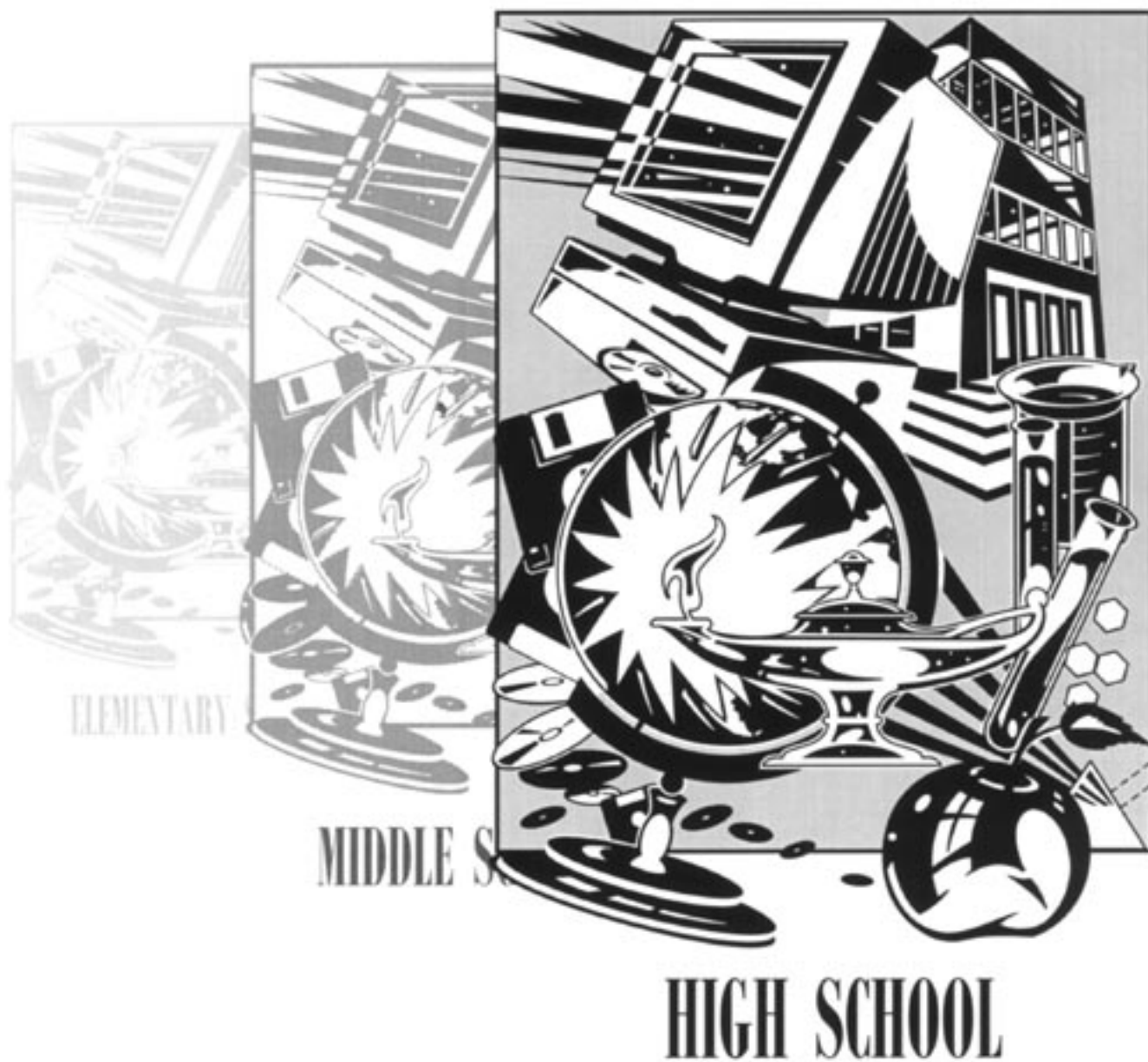


# Implementation Manual for the Program of Studies



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Gene Wilhoit, Commissioner

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**Gene Wilhoit, Commissioner**

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## Acknowledgements

The following Kentucky educators have given time and energy toward the development of the *Implementation Manual for the Program of Studies for Kentucky Schools, P-12*. Without their contributions, this document could not have been written. Listed are their work assignments at the time of their participation in the development process.

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# High School Implementation Manual

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## Scope and Purpose

The *Implementation Manual for the Program of Studies* provides both general information on implementing educational programs and specific suggestions on how to design courses using the content from the *Program of Studies for Kentucky Schools Primary - 12*. Numerous Kentucky educators have contributed to the informational sections and course models included in the document, which is intended to share ideas and provide assistance to others as they design instruction. While the use of the document is optional, it is believed that everyone will find something of use and benefit.

The introductory section includes advice on procedural guidelines (e.g., complying with the high school graduation regulation, designing and using student transcripts, designing course models) and general information (e.g., school governance, program standards for exceptional children, certification). It is intended both as an administrative and instructional resource on general issues related to implementation of educational programs.

The vast majority of the document is dedicated to various course models and course sequences. The organizational structure of this section is divided into required areas of Arts and Humanities, English/Language Arts, Health, Mathematics, Physical Education, Science, Social Studies and the elective area of World Languages.

Within the required content areas there are various course models — both traditional and nontraditional. These models are offered as examples of ways that courses could be structured, not as requirements for implementation. Teachers are invited to use the models as designed, to adapt them, or to use courses of their own design.

Recommended course sequences also are provided for appropriate content areas. In those areas where the graduation requirements indicate content areas (e.g., science, social studies) instead of specific courses (e.g., English I, Geometry), recommendations have been made on both the inclusion of content into courses and the organization of courses into a series or sequence to assure that all required content from the *Program of Studies* has been addressed.

Within the elective content areas, content charts and course models are provided. While the identified content is not required for instruction, its use is recommended. As with the required areas, the course models are just examples and do not reflect the only appropriate organizational structures.

Both required and elective course models include resources for teacher use. These are not exhaustive lists, but they do provide a range of information sources and materials that will assist teachers with instruction.

As teachers work with the *Program of Studies* and *Implementation Manual*, they will create other courses to address the identified content. As those models are completed, teachers are encouraged to submit them to the Kentucky Department of Education for distribution. Submission information is located at the end of the Introduction Section on page 116.

## How to Use This Manual

The *Implementation Manual* contains a great deal of information, background, and suggestions for implementing the required *Program of Studies* in districts, schools, and individual classrooms across the Commonwealth. It is not a regulatory document; however, it provides guidance in a number of areas important to curriculum, instruction, and assessment.

### Manual Organization

The opening sections of the manual contain general information. There are sections on the roles of several key programs, including school-based decision-making councils, library media resources, counselors, special education, and gifted and talented. Other topics include the correlation of the *Implementation Manual* with other documents and how to design models.

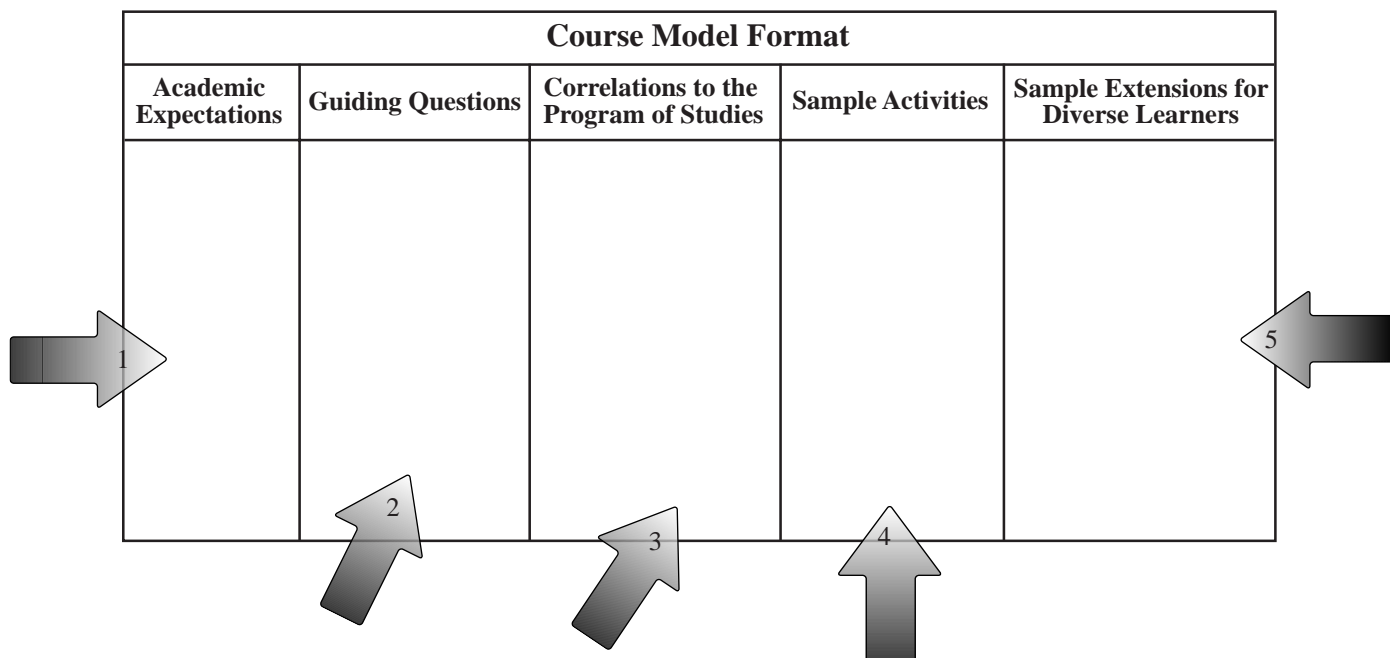
The largest part of this document contains models for instruction. The models are not intended to be prescriptive in nature, but rather offer suggestions on how the content can be presented effectively to students. These models are suggestions for organizing content for both required and elective courses. The required areas are those in which content or courses are identified for high school graduation: arts and humanities, English/language arts, health, mathematics, physical education, science, and social studies. Both required and elective course models are contained in these content sections. Interdisciplinary models are also included. The elective portion of the manual contains the subject area of World Languages in which no content is required for high school graduation. Not only do these sections have course models, they also include charts of suggested content. These charts are modeled after those of required content areas and courses. Content sections, whether required or elective, each contain overviews of models, models of courses and/or course sequences, glossaries, and suggested resources.

### Model Format

The course models are all constructed on the same model format. While some models may have slight variations, the format is essentially the same. An annotated model follows on page 3.

Models begin with an overview page that gives background information on the course. It will explain the origin of the content contained within the course, as well as the approach to instruction specific to this model. The page also includes categorizing information such as suggested number of credits, prerequisites, and grade level. The final section on the overview contains the guiding questions. Guiding questions are broad-based, engaging questions that students should be able to answer by the end of the course. They guide the way content is organized as well as instructional methods. These questions form the structure of the model charts.

Following the overview is a series of pages with each pair of pages organized around a guiding question. The first column (1) of the format (as shown on the following page) contains academic expectations, statements indicating what students should know and be able to do when they exit Kentucky schools (see the Kentucky Department of Education Web Site: <http://www.kde.state.ky.us> for a listing of Kentucky's Six Learning Goals and Academic Expectations). The selected learning goals and academic expectations provide the major focus of a course. However each column will not contain all academic expectations for the course, just those specifically related to the guiding question under development.



The second column (2) contains the guiding question. Guiding questions focus the learning and instruction for students and teachers throughout an entire course. These are broad-based, engaging questions that students should be able to answer by the end of the course. Generally, there will be a single guiding question in this section of the course format, but multiples may appear if they are closely related.

The third column (3) contains correlations to the *Program of Studies* or elective area content charts. Again, this is the content that is specifically covered by the guiding question(s) and set of activities. Bulleted items do not contain complete language, but carry the essence of the content so that it may be located easily in the *Program of Studies* or content chart. If a course is intended to fulfill a required credit, all content bullets from the *Program of Studies* for that specified credit should appear on one of the pages for that course. While these models address only content included in the *Program of Studies*, classroom instruction or courses designed by teachers can contain additional concepts, content, and skills important to the individual school or community.

The fourth column (4) is labeled “Sample Activities.” These suggestions include instructional activities that address the guiding question. They give guidance on what can be done, why it should be done, and how the work will be demonstrated (a product). Often these activities are “big” ideas, projects or performances that will take several days or even weeks to complete. Embedded are suggestions for assessment, community involvement, writing portfolio entries, technology integration, and open-response questions. These sample activities are intended to be neither comprehensive nor prescriptive; they are offered as possibilities. Some activities may not be feasible for a particular group of students or may require facilities or supplies that are not readily available in a certain school. They are intended to be a starting point for development of rich activities that engage students in their own learning and require them to demonstrate what they know and can do.

The final column (5), “Sample Extensions for Diverse Learners,” contains adaptations to the curriculum to help meet the needs, interests, and abilities of diverse groups of students, including gifted and talented students, exceptional children, children with disabilities, and those with limited English proficiency. These extensions are presented in the form of scenarios that describe hypothetical students and include methods, materials, services, and environments of instruction and assessment that allow those students to be successful. Within a course model, all thirteen types of extensions are addressed as suggestions for modifying instruction to meet the needs of all learners.

Each model will have approximately four to eight sets of pages organized by guiding questions. By the conclusion of all the sample activities, all of the content and academic expectations for the course should be covered at least once.

## Curriculum and Instruction Documents

The Kentucky Department of Education (KDE), and numerous Kentucky educators, have authored and published several documents that offer assistance on the implementation of the Kentucky Education Reform Act (KERA). The documents have been designed to be used together to guide instruction in the classroom. The following are brief descriptions of documents related to curriculum and instruction in Kentucky classrooms.

### National Standards

Various content groups have developed national standards for their subject areas. These standards outline content recommended for all students in this country. Some content areas are much more specific than others. National standards exist for English/language arts, science, social studies, various disciplines of arts and humanities, physical education, vocational studies, and mathematics, among others. National standards have been utilized, as appropriate, in the development of Kentucky documents. National standards are available from the respective content associations.

### Kentucky's Learning Goals and Academic Expectations

In 1989, Governor Wallace Wilkinson appointed the 12-member Council on School Performance Standards to identify what a high school graduate in Kentucky should know and be able to do. The result of this council's work, which involved gathering public input through a series of hearings, surveys, and focus groups, was adopted into state law as Kentucky's Six Learning Goals. The council then created 11 task forces to elaborate on these goals by identifying specific academic expectations on which to base curriculum and assessment. Kentucky's Learning Goals and Academic Expectations are the basis for curriculum documents developed by KDE.

### Program of Studies for Kentucky Schools P-12

The *Program of Studies* identifies overall academic content to be included in the curriculum. It was revised in 1998 to ensure that all students across the Commonwealth are provided with the same content and have the same opportunities to learn at high levels. The revised *Program of Studies* specifies the minimum content for the 15 required credits for high school graduation and the content for primary, intermediate, and middle level programs leading to these graduation requirements. Changes reflect new high school graduation requirements and embed academic expectations and *Core Content for Assessment*.

### Core Content for Assessment

The core content document represents content that has been identified as essential for all students to know and that which will be included on the state assessment for reading, writing, mathematics, science, social studies, arts and humanities, practical living, and vocational studies. Core content is designed for use with Kentucky's Academic Expectations to provide parameters for test developers as they design assessment items, including multiple choice and open-response questions, as well as on-demand writing prompts and writing portfolios.

### Transformations: Kentucky's Curriculum Framework

Published in two volumes, *Transformations* provides direction to local schools and districts as they develop curriculum. It provides benchmarks (demonstrators) of skills, processes, and content knowledge as further explanation of the academic expectations; suggestions on teaching and learning strategies; and multiple resources to assist with the development of curriculum and units of study.

## **Implementation Manual for the Program of Studies**

The *Implementation Manual for the Program of Studies* provides guidance and assistance to schools in the form of instructional approaches, models for configuring content, information on course structures, resources, and glossaries. The courses structures, activities, and strategies included in the document are provided as examples and are not required for implementation.

The manual is organized in three volumes, elementary, middle level, and high school and includes models of required and elective courses and sequences of courses. Introductory sections such as “Guidance and Counseling,” “Individual Graduation Plans (IGP),” “School Governance,” and “Library Media Services” also are included.

## **Developing a Standards-Based Unit of Study**

This document demonstrates how to develop an effective unit using the Curriculum Planning Map. It includes templates and step-by-step instructions on designing effective instruction through organization of content in units of study.

## **Designing an Effective Performance Task for the Classroom**

The design process for developing performance tasks for classroom use is contained within this document. Six sample performance tasks and accompanying scoring guides are included along with a set of worksheets for use in developing tasks.

## **Open-Response Questions in the Classroom**

Open-response questions are most appropriately incorporated into classroom instruction. This planning guide will take you through the basic steps of development. It includes templates for designing questions and scoring guides, as well as sample questions and scoring guides.

**All curriculum documents released from the Kentucky Department of Education can be accessed on the Web Site (<http://www.kde.state.ky.us>).**



## High School Graduation Requirements

The following chart outlines the new high school graduation requirements summarized from  
704 KAR 3:305.

<b>New Minimum High School Graduation Requirements for the Class of 2002</b>		
<b>Subject</b>	<b>Credits</b>	<b>Courses</b>
Language Arts	4	English I, II, III, IV
Social Studies	3	Credits to incorporate U.S. history, economics, government, world geography, and world civilization
Mathematics	3	Algebra I, Geometry, and one elective
Science	3	Credits to include life science, physical science, and earth/space science
Health	1/2	
Physical Education	1/2	
History and Appreciation of Visual and Performing Arts	1	History and Appreciation of Visual and Performing Arts or another arts course which incorporates such content
<b>TOTAL: 15 required credits plus 7 electives (22 credits)</b>		
Individual Graduation Plan: Each student shall complete a program that emphasizes career plans and courses. IGPs can be altered by students and parents.		

## Guidelines for Complying with High School Graduation Regulation

The new minimum high school graduation requirements for the class of 2002, addressed by 704 KAR 3:305, was approved in July 1997. This regulation contains a section outlining the district's and school's responsibilities in providing a letter of assurance of compliance to the Department of Education regarding graduation policy and the *Program of Studies*. The following information contains a procedure to follow for completing the letter of assurance and one example of a matrix that **could be** used to indicate how the goals and academic expectations are being addressed in the school/district course of studies. This matrix is just one suggested way to present this information, other formats are acceptable. For detailed information contained in the regulation, reference 704 KAR 3:305, Section 2, (3) and (4).

### Procedures to Follow for Letter of Assurance

#### Definition of the Letter of Assurance of Compliance

A letter of assurance of compliance states that the local board of education has a policy on high school graduation requirements including a description of how those requirements address Kentucky Learning Goals (KRS 158.6451) and Academic Expectations (703 KAR 4:060). (See Example: Matrix for Defining Academic Expectations and Graduation Requirements to Meet State Guidelines as one way to address this requirement.)

The policy statement shall identify the number of credits required for graduation plus any requirements beyond the state's minimum requirements. A copy of the local policy from the district board of education and school council(s) must be included as an attachment. A copy of the local policy, including a description by the school council of how those requirements are addressed, must be kept on file by the local board of education.

#### Where and When to Send the Letter of Assurance

The letter of assurance of compliance and a copy of the local policy from the local board of education and school council must be submitted to the Division of Curriculum Development, Kentucky Department of Education, by August 1. The letter must be signed by the superintendent and mailed in hard copy. The copy of the local policy and other attachments are to be sent electronically.

#### Amendment of Policy

If a local board or school council amends its policy, a letter of assurance of compliance referencing the amendments shall be filed with the Division of Curriculum Development, Kentucky Department of Education by the local board and signed by the superintendent.

#### Substitutions

If a local board of education is substituting an integrated, applied, interdisciplinary, or higher level course for the required course for graduation, a rationale and course description must be provided with the letter of assurance. Examples of courses that would require the submission of a rationale and course description are Algebra II for Algebra I, Integrated Mathematics I and II for Algebra I and Geometry, or American Studies for English III and United States History. However, if an Advanced Placement (AP) course is being offered instead of the state requirement, a rationale and course description do **not** have to be submitted.

If a local board of education is substituting a functional, integrated, applied, interdisciplinary, or higher level course for a required course for graduation for students with disabilities, a rationale and course description also must be filed with the letter of assurance. The alternative course must provide rigorous content and address the same applicable components included in the academic expectations.

### Sample Matrix for Identifying Learning Goals and Academic Expectations for Required Graduation Credits

<b>Program Area</b>	<b>Required Units</b>	<b>Course Titles</b> (Listed below and defined in a local Program of Studies)	<b>Goals and Academic Expectations (AEs)</b>
<i>English</i>	4	English I-IV	1.1, 1.2, 1.3, 1.4, 1.11, 1.12, 1.16, 2.22, 2.24, 2.25
<i>Mathematics</i>	3	Algebra I Geometry Mathematics Elective*	1.5-1.9, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13
<i>Science</i>	3	Integrated Science I, II, III*	2.1, 2.2, 2.3, 2.4, 2.5, 2.6
<i>Social Studies</i>	3	Integrated Social Studies I, II, III*	2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20
<i>Health</i>	1/2	Health	1.15, 2.29, 2.30, 2.31, 2.32, 2.33, 2.34, 2.35,
<i>Physical Education</i>	1/2	Physical Education	3.2, 4.4
<i>Visual and Performing Arts</i> (Arts/Humanities)	1	History and Appreciation of Visual and Performing Arts*	1.12, 1.13, 1.14, 1.15, 2.22, 2.23, 2.24, 2.25, 2.26
<i>Individual Graduation Plan</i> (Vocational Studies)			2.33, 2.36, 2.37, 2.38, 3.1, 3.3, 3.4
Academic Expectations that go across program areas	15		1.1, 1.2, 1.3, 1.4, 1.10, 1.11, 1.12, 1.16, 2.36, 2.37, AEs in Goals 3, 4, 5, and 6
<i>Electives</i>	7	Specific Courses to be Determined by the School Council or Local Board	Goals and Academic Expectations to be Determined

**\*Example** - specific courses will be determined by the school council or local board of education.

**Note:** The matrix provided above is just an example. The school does not have to use this format, and this particular example should not be submitted as compliance for an individual school. Each course should be listed separately (e.g., English I, English II, English III) with the learning goals and academic expectations specific to each individual course. Academic expectations from goals 1, 3, 4, 5, and 6 should be listed by each specific course where they are addressed.

## 704 KAR 3:305 Minimum Requirements for High School Graduation

### Section 2.

- (2) A local board of education may substitute an integrated, applied, interdisciplinary or higher level course for a required course if the alternative course provides rigorous content and addresses the same applicable components of 703 KAR 4:060 (academic expectations). If a substitution is made, a rationale and course description shall be filed with the Department of Education.
- (3) For students with disabilities, a local board of education may substitute a functional, integrated, applied, interdisciplinary or higher level course for a required course if the alternative course provides rigorous content and addresses the same applicable components or 703 KAR 4:060 (academic expectations). If a substitution is made, a rationale and course description shall be filed with the Department of Education.
- (4) Each local board of education shall maintain a copy of its local policy on high school graduation requirements.
  - (a) This policy shall include a description of how the requirements address KRS 158.6451 (1) (b) (6 Learning Goals) and 703 KAR 4:060 (Academic Expectations).
    1. If a high school does not have a school council, this description shall be provided by the local board.
    2. If a high school does have a school council, this description shall be provided by the school council to the local board of education.
  - (b) A letter of assurance of compliance and a copy of the local policy from the local board of education and school council shall be submitted to the Department of Education by the local board. If the local board or school council amends its policy, a letter of assurance of compliance referencing the amendments shall be filed with the Department of Education by the local board.

## High School Graduation Credit

High school graduation credit can be awarded in either of two ways — Carnegie units or performance-based credit. However, performance-based systems developed by local school districts are subject to approval by the Kentucky Board of Education (KDE) before being implemented. The Division of Curriculum Development will provide guidelines for performance-based systems and procedures for obtaining approval from the State Board.

## Professional Staff Data Codes

Professional Staff Data (PSD) Codes provide an identification for each course for use in verifying that teachers have the correct certification to teach that specific course. Since the *Program of Studies* no longer identifies specific courses, the PSD Codes do not appear in that document. They will be printed separately and distributed annually by the Division of Finance.

## Maximum Credits for Program Areas

The State Board of Education identifies the minimum credits required for graduation, and the local district sets limits on the maximum number of credits that may be earned in any single program area (e.g., Band, Foreign Language, Military Science). If districts adopt a limit, the specification of those limits should be included as part of the district's graduation policy.

## Pre-College Curriculum

The Council on Postsecondary Education (CPE) is in the process of reviewing the Pre-College Curriculum in light of the new graduation requirements and establishing Kentucky Educational Excellence Scholarship (KEES) Curriculum. Information on both of these programs will be provided at a later date under separate cover.

## Guidelines for Dual Credit

### Dual Credit Defined

Dual credit exists when both a high school and a college/university award credit to a high school student for the same course. Guidelines governing dual credit are established by the Council on Postsecondary Education.

### Admissions Standards.

- A letter of recommendation from the high school principal or counselor addressing the student's qualifications to take the course, as identified by the Council on Postsecondary Education, must be submitted. The letter is to include a statement that the student is pursuing the Pre-College Curriculum.
- Enrollment is restricted to seniors with exceptions permitted for non-seniors enrolled in "advanced" courses in the following discipline fields:
  - √ mathematics - calculus or above;
  - √ sciences - second year physics, chemistry, or biology;
  - √ foreign languages - third year or above; and
  - √ any Advanced Placement (AP) course.

- Enrollment is restricted to students who meet each of the following standards:

1. Composite score:

For the ACT/P-ACT+, a composite score that exceeds the national mean;

or

For the SAT/PSAT, a total score (verbal plus mathematics) above the national mean to be computed by adding the national mean scores on the verbal and mathematics components.

2. Grade point average and percentile:

A high school grade point average of at least a 3.25 on a 4.0 scale in all courses completed at the ninth grade level or higher and at least the 60th percentile (national) on one of the accepted tests.

or

A high school point average of at least 3.0 on a 4.0 scale in all courses completed at the ninth grade level or higher and at least 70th percentile (national) on one of the accepted tests:

Accepted Tests

For the ACT/P-ACT+, the English percentile should be used for English and language arts courses, the mathematics percentile for mathematics courses, the science reasoning percentile (ACT Enhanced Assessment) for science courses, and the reading percentile (ACT Enhanced Assessment) for social studies courses;

or

For the SAT/PSAT, the verbal percentile should be used for English, language arts, and social studies courses, and the mathematics percentile for mathematics and science courses;

or

An appropriate percentile ranking on a nationally recognized, discipline specific, placement test (e.g., the Toledo Chemistry Exam) may be used in lieu of the disciplines scores cited previously.

### Course Level and Quality Assurance

- At the collegiate level, dual credit is restricted to introductory or lower division courses.
- Institutions of higher education which offer a dual credit course must ensure that qualitative standards shall be consistent with those for the course as offered on the college campus (e.g., through uniform procedures, materials, implementation, and evaluation.)

### Number of Courses

The maximum number of dual credit courses that may be completed by a high school student is four, with no more than two courses in a single discipline.

### Academic Qualifications of Faculty

In keeping with the “Criteria of the Commission on College, Southern Association of Colleges and Schools,” the minimum qualifications of the Teacher of Record is a master’s degree with 18 graduate hours completed in the discipline. In addition, the Teacher of Record must have a minimum of three years of teaching experience.

## Reporting and Evaluation

For funding purposes, the credit hours associated with dual credit courses will be excluded from formula calculations when the Teachers of Record (Instructors) are high school teachers. Dual credit courses taught by university personnel will be included in formula calculations. However, all courses taught, or sponsored, by an institution of higher education for which academic credit is awarded will continue to be reported to the Council and coded in an agreed upon manner to indicate their inclusion or exclusion for formula purposes.

### Guidelines for Evaluation of Dual Credit Courses.

- Each public institution of higher education offering dual credit courses shall submit an annual report to include:
  - √ Course name and number
  - √ High school or place course offered
  - √ Enrollment in course
  - √ Faculty member teaching course
  - √ Certification that each individual student met all standards of eligibility including student GPA; composite ACT/P-ACT+ or SAT/PSAT, or a nationally recognized placement test; high school letter of recommendation to take the course. This information may be summarized for the report, but must be available for audit.
  - √ Summary of dual credit activity by number of courses offered, program areas offered, number of faculty involved, enrollments, number of high schools involved, and counties served.
  
- Each public institution of higher education offering dual credit courses shall submit a report evaluating the program every three years. This evaluation shall include:
  - √ Assessment of the quality of dual credit offerings,
  - √ Description of the college or university monitoring process,
  - √ Assessment of the management and coordination of the program,
  - √ Assessment of the professional development component of the program,
  - √ Evidence that dual credit is meeting the needs of students, schools, and the colleges and universities,
  - √ Opportunity for input from all participants (i.e., students, parents, faculty, principals, university personnel), and
  - √ Assessment of the Dual Credit Guidelines and any suggested changes and/or recommendations.
  
- Each public institution of higher education offering dual credit courses shall submit a follow-up study of dual credit students as identified by the Council on Higher Education every three years.

Note: Council staff will present any proposed revisions in the Guidelines for Dual Credit to the Council of Chief Academic Officers and the Conference of Presidents for consideration, and staff will make its recommendation to the Council on Postsecondary Education after this consultation.

## **Academic Requirements for Athletes**

### **Kentucky High School Athletic Association**

#### **Bylaw 5. Minimum Academic Requirement**

##### **Sec. 1. Proper Grade Level For Schools/Districts Requiring 20 Carnegie Units for Graduation**

On the first day of each school year, a student must be at his/her proper grade level. To be considered to be at the proper grade level, a student must have been enrolled during the previous grading period and must be on schedule to graduate on the first day of school. For the verification of this provision, all course work, including summer and correspondence work, must be complete including receipt of the final grade(s) by the first day of the school year for the student body.

- (a) For a student in the ninth grade to be considered to be on schedule to graduate, that student must have been promoted from grade eight (8) to grade nine (9), and be in compliance with all other bylaws.
- (b) For a student in the second year following initial enrollment in grade nine (9) (normally grade 10) to be on schedule to graduate, that student must have received four full units of credit applicable to graduation prior to the first day of the second year following initial enrollment in grade nine (9), and be in compliance with all other bylaws.
- (c) For a student in the third year following initial enrollment in grade nine (9) (normally grade 11) to be on schedule to graduate, that student must have received nine full units of credit applicable to graduation prior to the first day of the third year following initial enrollment in grade nine (9), and be in compliance with all other bylaws.
- (d) For a student in the fourth year following initial enrollment in grade nine (9) (normally grade 12) to be on schedule to graduate, that student must have received fourteen full units of credit applicable to graduation prior to the first day of the fourth year following initial enrollment in grade nine (9), and be in compliance with all other bylaws.
- (e) The eligibility of a student failing to meet the provisions of subsections (a) through (d) above may be reinstated a maximum of one time. This reinstatement is possible by the student passing five full units of credit applicable to graduation during the year he/she is ineligible. He/she, upon reinstatement, shall remain eligible as long as he/she passes five full units of credit applicable to graduation during each subsequent year.

#### **Q 1 Why is there a minimum Academic Requirement?**

**A** Participants in the interscholastic athletic program are expected to be student-athletes. High school sports are not intended to be a “farm team” for college and professional sports, but a complementary activity to the total learning experience. Standards must be in place to ensure that in addition to sports participation, a student must be on schedule to graduate with his/her class. As class systems change (block and other alternative schedules), these requirements must be continually reviewed to make certain that all students are meeting the necessary requirements to graduate from high school and be positive contributors to society. While athletics serve as a deterrent for many students to become involved in less-desirable elements of society, the young persons must be student first, athletes second.

#### **Q 2 How is Section 1 of Bylaw 5 interpreted to determine eligibility of a student on the first day of school?**

**A** On the first day of school, guidance counselors or other personnel should use the following chart to determine eligibility based on the local district requirements for graduation.



## Requirements for First Day of School

Graduation Requirements	First Year (Normally Grade 9) Promoted from 8	Second Year (Normally Grade 10) 4.00	Third Year (Normally Grade 11) 9.00	Fourth Year (Normally Grade 12) 14.00	Required to Reinstatement 5.00
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**Q 3 How are credit hours and credits computed when a student changes from a traditional format to an alternative format school (i.e., 6 hour day to block schedule day) or vice-versa?**

**A** A student's eligibility status must be determined by converting either to or from the traditional system when dealing with transfer students. This must be done in accordance with accepted policy for computing graduation progress, and no special consideration can be given to student athletic participants.

**Q 4 Can summer school or correspondence courses satisfy the academic requirements of Bylaw 5, Section 1?**

**A** Yes, due to the fact that the verification date under Bylaw 5, Section 1 is the first day of school, summer school and/or accredited correspondence courses may be used to make up a failure or deficiency in the academic work of the preceding year. The course(s) must be complete and a grade received prior to the first day of school for the student body.

**Q 5 If a student is ineligible at the beginning of the school year according to Bylaw 5, Section 1, can this student become eligible during the school year?**

**A** No. These provisions state that in order to be eligible at any time during the school year, a student must be eligible on the first day of school. However, a student-athlete who is ineligible due to failing to maintain normal progress as defined in Bylaw 5, Section 1, may have eligibility reinstated for the following and subsequent years providing he/she meets all provisions for reinstatement in Section 1 (e).

**Q 6 May a school district or member school adopt an academic standard which is different from the KHSAA Minimum Academic Requirement?**

**A** Yes, provided the school or school district has not established a standard which is lower than the KHSAA minimal standard. However, a school or school district may set a minimal grade point average or require that students successfully complete more credits per semester or year that is required by the Association. The KHSAA requirement for participation is that a student must be at proper grade level, and on schedule to graduate in order to be eligible for interscholastic athletics.

### Sec. 2. Proper Grade Level For Schools/Districts Requiring More Than 20 Carnegie Units for Graduation.

On the first day of each school year, a student must be at his/her proper grade level. To be considered to be at the proper grade level, a student must have been enrolled during the previous grading period, and must be on schedule to graduate on the first day of school. For the verification of this provision, all course work, including summer and correspondence work, must be complete by the first day of the school year for the student body.

(a) For a student in the ninth grade to be considered to be on schedule to graduate, that student must have been promoted from grade eight (8) to grade nine (9), and be in compliance with all other bylaws.

(b) For a student in the second year following initial enrollment in grade nine (9) (normally grade 10) to be on schedule to graduate, that student must have received twenty (20) percent of the requirements of the school/district for graduation prior to the first day of the second year following initial enrollment in grade nine (9), and be in compliance with all other bylaws.

- (c) For a student in the third year following initial enrollment in grade nine (9) (normally grade 11) to be on schedule to graduate, that student must have received forty-five (45) percent of the requirements of the school/district for graduation prior to the first day of the third year following initial enrollment in grade nine (9), and be in compliance with all other bylaws.
- (d) For a student in the fourth year following initial enrollment in grade nine (9) (normally grade 12) to be on schedule to graduate, that student must have received seventy (70) percent of the requirements of the school/district for graduation prior to the first day of the fourth year following initial enrollment in grade nine (9), and be in compliance with all other bylaws.
- (e) The eligibility of a student failing to meet the provisions of subsections (a) through (d) above may be reinstated a maximum of one time. This reinstatement is possible by the student passing twenty-five (25) percent of the requirements of the district for graduation during the year he/she is ineligible. He/she, upon reinstatement, shall remain eligible as long as he/she passes twenty-five (25) percent of the requirements of the district for graduation during each subsequent year.

**Q 1 Why is there a Minimum Academic Requirement?**

**A** Participants in the interscholastic athletic program are expected to be student-athletes. High school sports are not intended to be a “farm team” for college and professional sports, but a complementary activity to the total learning experience. Standards must be in place to ensure that in addition to sports participation, a student must on schedule to graduate with his/her class. As class systems change (block and other alternative schedules), these requirements must be continually reviewed to make certain that all students are meeting the necessary requirements to graduate from high school and be positive contributors to society. While athletics serve as a deterrent for many students to become involved in less-desirable elements of society, the young persons must be students first, athletes second.

**Q 2 How is Section 2 of Bylaw 5 interpreted to determine eligibility of a student on the first day of school?**

**A** On the first day of school, guidance counselors or other personnel should use the following chart to determine eligibility based on the local districts requirements for graduation.

Requirements for First Day of School

Graduation Requirements	First Year (Normally Grade 9)	Second Year (Normally Grade 10)	Third Year (Normally Grade 11)	Fourth Year (Normally Grade 12)	Required to Reinstate
20	Promoted from 8	4.00	9.00	14.00	5.00
21	Promoted from 8	4.20	9.45	14.70	5.25
22	Promoted from 8	4.40	9.90	15.40	5.50
23	Promoted from 8	4.60	10.35	16.10	5.75
24	Promoted from 8	4.80	10.80	16.80	6.00
25	Promoted from 8	5.00	11.25	17.50	6.25
26	Promoted from 8	5.20	11.70	18.20	6.50
27	Promoted from 8	5.40	12.15	18.90	6.75
28	Promoted from 8	5.60	12.60	19.60	7.00
29	Promoted from 8	5.80	13.05	20.30	7.25
30	Promoted from 8	6.00	13.50	21.00	7.50
31	Promoted from 8	6.20	13.95	21.70	7.75
32	Promoted from 8	6.40	14.40	22.40	8.00

**Q 3 How are credit hours and credits computed when a student changes from a traditional format to an alternative format school (i.e., 6 hour day to block schedule day) or vice-versa?**

**A** A student's eligibility status must be determined by converting either to or from the traditional system when dealing with transfer students. This must be done in accordance with accepted policy for computing graduation progress, and no special consideration can be given to student athletic participants.

**Q 4 Can summer school or correspondence courses satisfy the academic requirement of Bylaw 5, Section 2?**

**A** Yes, due to the fact that the verification date under Bylaw 5, Section 2 is the first day of school, summer school and/or accredited correspondence courses may be used to make up a failure or deficiency in the academic work of the preceding year. The course(s) must be complete and a grade received prior to the first day of school for the student body.

**Q 5 If a student is ineligible at the beginning of the school year according to Bylaw 5, Section 2, can this student become eligible during the school year?**

**A** No. These provisions state that in order to be eligible at any time during the school year, a student must be eligible on the first day of school. However, a student-athlete who is ineligible due to failing to maintain normal progress as defined in Bylaw 5, Section 2, may have eligibility reinstated for the following and subsequent years providing he/she meets all provisions for reinstatement in Section 2 (e).

**Q 6 May a school district or member school adopt an academic standard which is different from the KHSAA Minimum Academic Requirement?**

**A** Yes, provided the school or school district has not established a standard which is lower than the KHSAA minimal standard. However, a school or school district may set a minimal grade point average or require that students successfully complete more credits per semester or year that is required by the Association. The KHSAA requirement for participation is that a student must be at proper grade level, and on schedule to graduate in order to be eligible for interscholastic athletics.

### Sec. 3. Continual Progress During the School Year

On Friday of each grading period, a student in grades nine (9) through twelve (12) must be enrolled as a full-time student according to regulations promulgated by the Kentucky Department of Education in order to be eligible for athletics. On Friday of each grading period, a student shall also be passing in at least four hours of instruction as defined by Kentucky Department of Education regulations (of the six hours of instruction required) or the equivalent of four hours of instruction acceptable to graduation in order to be eligible to participate in athletics during the next seven day period (Saturday to Friday). No special tests or recitations are to be given for the purpose of making the student eligible. Cheerleaders, student managers, and any other student having an official connection with the athletic program shall comply with this rule.

**Q 1 May a school district or member school adopt an academic standard which is different from the KHSAA Minimum Academic Requirement?**

**A** Yes, provided the school or school district has not established a standard which is lower than the KHSAA minimal standard. However, a school or school district may set a minimal grade point average or require that students successfully complete more credits per semester or year that is required by the Association. The KHSAA requirement for participation is that a student must be at proper grade level, and on par to graduate in order to be eligible for interscholastic athletics.

**Q 2 How is Bylaw 5, Section 3 interpreted as it relates to schools with nontraditional (block) schedules?**

**A** A student must be enrolled as a full-time student (four of six hours) and passing in four full credit hours (240 minutes) worth of classes. For example, if a student is attempting four full credits of one and one-half hours each, he/she would need to pass three (four and one half hours) worth. As another example, the periods are 80 minutes, he/she would need to pass three. It is imperative when interpreting this rule that the amount of credits attempted and class length be considered when determining the eligibility of a student-athlete as the student must pass 240 minutes of class (four full credit hours).

**Q 3 Are subjects or credit hours involved in the Scholarship Rule (Minimum Academic Requirement)?**

**A** Credit Hours. To be eligible, a student must be passing currently in the required number of full-credit subject hours applicable to graduation and must be at his/her proper grade level according to Bylaw 5. However, their equivalent in units of credit accepted for graduation may be substituted.

#### Sec. 4. Pre-Secondary School Students

Pre-secondary school students (grades 1-8) participating in athletics representing a KHSAA member school shall be passing in at least two-thirds of the subjects in which they are currently enrolled in order to be eligible.

**Q 1 May a student who is ineligible under the provisions of Bylaw 5 practice with the team?**

**A** Students ineligible under Section 3 (the weekly grade check) may continue to practice if permissible by local school policy. All other students who are ineligible in accordance with Bylaw 5 or any other Bylaw may not practice with the team.

## Certification

### Guidelines for Use

The Kentucky Education Reform Act of 1990 established the Education Professional Standards Board and charged the board to “reduce and streamline the credential system to allow greater flexibility in staffing local schools while maintaining standards for teacher competence” (KRS 161.028[1g]). This is very much in keeping with the new emphasis on local control of education, and the board has been diligent in its efforts to facilitate the transfer from the old certification system to the new.

As the state becomes less prescriptive as to who can teach which courses, it becomes increasingly important for school districts and school councils to carefully review the transcripts and experiences (i.e., the “portfolios”) of prospective teachers. Ensuring a good “match” between each faculty member’s responsibilities and expertise is imperative to creating a climate of success for students, teachers, administrators, parents, and the community-at-large.

To this end, the following guidelines are suggested for use in determining appropriate certification:

- Every teacher’s teaching assignment should be appropriate to the grade level(s) for which he/she is certified.
- The basic structure of a teacher’s preparation program should align with the basic structure of the course being taught. For example, a teacher certified only in music should not be assigned to teach a course in algebra. Students cannot be expected to do well in their courses and on the assessments if they never have been afforded appropriate learning experiences. Teachers must know their content.
- A teacher who teaches an interdisciplinary course should have a background in at least one of the disciplines included in the course. For example, if an American Studies course entails work in both U.S. history and American literature, certification in either social studies or English should be required.
- Each teacher who team-teaches an interdisciplinary course should have a background in a different discipline included in the course. For example, when two teachers are assigned to team-teach integrated science, one teacher should be certified in life science and the other in physical science. An elementary teacher who team-teaches an interdisciplinary course should have at least a demonstrated preference/expertise (as defined by the local school district or school council) in one of the disciplines.
- Courses listed in the *Program of Studies* are not intended to address every academic expectation. Each local district is responsible for determining what additional electives are needed to cover the remaining curricular areas. Each district also should determine the certifications required for teaching the electives. A district should submit to the Department of Education as part of its local policy on high school graduation requirements a description of how it will stipulate and oversee the certification requirements for elective courses.

## Individual Graduation Plans

### What is an Individual Graduation Plan?

Beginning with the graduating class of 2002, each student in a common school shall complete an Individual Graduation Plan (IGP). An IGP is a curricular plan that emphasizes career development and the learning experiences that will lead to successful transition after high school. Schools must work with all students, including transfer students and students with special needs, to develop IGPs.

Individual Graduation Plans set learning goals for students based on academic and career interests. Prior to entering high school, a student, with the guidance of parents and school personnel, develops an IGP that outlines how he or she will achieve Kentucky's Learning Goals and Academic Expectations. Students will choose programs that help them make successful transitions to college, vocational/technical school, the workforce, or the military. Students create IGPs to plot a course through required academic coursework and elective choices leading to postsecondary options. IGPs encourage students and their parents or guardian to consider educational and career goals and plan how best to achieve them.

Students start planning for high school while still in the middle grades. High school and district staff work with middle level faculties to ensure that eighth grade students and their parents or guardian have sufficient information regarding high school course sequences and postsecondary opportunities to make informed decisions regarding the development of an IGP.

Individual Graduation Plans are not static; they change as students progress and change their goals. Therefore, students' plans should be reviewed annually and approved by students, parents or guardian, and school officials. Schools develop multiple strategies to ensure that timely and accurate information is available to students as they reassess their educational plans.

Kentucky's Learning Goals and Academic Expectations, along with students' identified goals, shape the IGP. The academic expectations that emphasize career development and should be addressed through the IGP process are described as follows:

**Academic Expectation 2.36:** Students use strategies for choosing and preparing for a career. Awareness of careers starts in the primary grades and at the middle level more specific exploration experiences occur. The total experience through high school allows students to determine a career path which fits their interests, aptitude, and abilities, while providing strategies to prepare for a career(s).

By the time a student reaches the halfway point in high school, the Individual Graduation Plan should start emphasizing the transitional aspect of the plan in order to direct the student's curricular goals toward whatever it is that the young person wants to achieve after earning a diploma. An optional, part of the IGP may include reports of achievement that are reviewed with parents and later, submitted to colleges and/or potential employers. This cumulative plan of progress toward graduation is maintained by the student and grows larger with time. It may also include out-of-school work-based learning or service learning experiences.

**Academic Expectation 2.37:** Students demonstrate skills and work habits that lead to success in future schooling and work. The basic skills, knowledge, and positive work habits for successful transition from school to postsecondary experiences and to life itself are addressed throughout a student's educational experience. However, the connections between success in the workplace and skills, knowledge, and work habits are emphasized at the high school level.

**Academic Expectation 2.38:** Students demonstrate skills such as interviewing, writing resumes, and completing applications that are needed to be accepted into college or other postsecondary training or to get a job. This expectation is more significant for high school students who are preparing for the transition to the world of work. However, many aspects of learning to market oneself need to begin earlier with an awareness at the elementary level and practice at the middle level.

### How are Individual Graduation Plans Developed?

All students should develop an Individual Graduation Plan prior to entering high school. Under the direction of counselors and/or teachers, students update their IGPs prior to scheduling classes for the next school year.

The following four stage process is provided to assist administrators, teachers, and other personnel in implementing a successful program for students. This material is not intended to be a “prescription” to serve all schools, but is intended to be a starting place and to stimulate ideas to meet individual needs.

#### I. Planning Stage

- A. Identify personnel to coordinate and implement the Individual Graduation Plan process.
- B. Develop procedures for implementation of process.
- C. Develop an evaluation of the Individual Graduation Plan process.
- E. Plan professional development session on Individual Graduation Plans for personnel who are to implement the process and communication plans for parents and/or guardians.

#### II. Implementation Stage

- A. Begin process of career planning in the eighth grade for all students.
- B. Develop learner profile which includes existing information (formal and informal) related to:
  - academic records;
  - pre-vocational experiences;
  - achievement test including information regarding reading, math; language, and reference skills;
  - attendance;
  - personal goals; and
  - social or work history.
- C. Administer assessment instruments on interest and learning styles.
- D. Conduct counseling session (group or one-on-one) with students to review results of interest and learning styles assessment. This may be done by teachers, guidance counselor(s), psychologist, and/or psychometrist.
- E. Assist students in completing sections of the Individual Graduation Plan related to career goals, interests, hobbies, co-curricular activities, work experience, and community activities.
- F. Conduct sessions with student/parent/guardian upon revisions and updating of the Individual Graduation Plan.
- G. Select courses needed for upcoming school year.
- H. Evaluate the Individual Graduation Plan process and make appropriate changes to the process.

### III. Monitoring and Updating Stage

- A. Designate a teacher to serve as an advisor/mentor for each student.
- B. Conduct assessment to determine student career aptitudes at the ninth grade. This function is to be coordinated by guidance counselor.
- C. Conduct counseling sessions for student/parent/guardian as needed during the school year.
- D. Solicit individual teacher's input in process (e.g., students' classroom progress and/or behavior).
- E. Update individual assessment as needed (e.g., work samples, job tryouts) in grades 10-12. Referral for assessment by an outside agency such as vocational rehabilitation may be appropriate at this level.
- F. Select courses needed for upcoming school year and update the Individual Graduation Plan.
- G. Identify post-school outcomes (i.e., employment, postsecondary education, military) and services needed to achieve transition goals.

### IV. Transition Stage

- A. Conduct joint counseling session with twelfth (12th) grade students, and identified personnel needed to provide student services, to enhance the transition process from secondary education to work, postsecondary education, or the military.
- B. Complete senior transition surveys and conduct follow-up.

### Implementation Time Line

In implementing Individual Graduation Plans, it is recommended that the following serve as guidelines for providing students with experiences that will assist them in making a successful transition from school to work, postsecondary education, or the military.

#### Grade 4

- All students have experienced career awareness and computer literacy through the curriculum offered in the primary program.

#### Grade 8

- All students have developed keyboarding and other computer literacy skills.
- All students have completed a career awareness and exploration course such as "Career Choices."
- All students have developed an Individual Graduation Plan which indicates a career objective and identifies a planned program of studies.
- All students have completed an assessment to determine career interest and learning styles.

#### Grade 10

- All students have refined their transition objective and received additional counseling on their transition plan.
- All students have become involved in or have identified student organizations or other school activities in which they will participate to develop leadership and teamwork skills.



## Grade 12

- All students have developed academic and occupational skills necessary to make successful transition to postsecondary education, the workforce, or the military.
- All students have participated in authentic learning experiences which are related to their career objective. These experiences may include peer tutoring projects or events, community service, registered pre-apprenticeship, mentoring, shadowing, simulation, and co-op experiences.
- All students have participated in student organizations and/or other school activities to develop leadership, teamwork, and social interactive skills.

## What Should an IGP Include?

The following are required components of IGPs:

- Personal information
- Participants in planning process
- Action plans for students with special needs
- School and community activities
- Hobbies and leisure activities
- Work experiences
- Career goals and level of training needed to reach specific goals
- Career development experiences

The following are recommended components of IGPs:

- Transcripts
- Documentation of certificates and rewards
- Print and nonprint examples of performance
- Best pieces from writing portfolios
- Best pieces from other academic portfolios
- Employability skills rating

The following sample IGPs are included to help schools with the development process.

## Sample Individual Graduation Plan

### A. Personal Information

1. Name: Last \_\_\_\_\_ First \_\_\_\_\_
2. Social Security Number \_\_\_\_\_ 3. Telephone No. (\_\_\_\_) \_\_\_\_\_
4. Home Address \_\_\_\_\_
5. Birth Date \_\_\_\_\_ 6. Sex M F
7. Ethnic Code: White ( ) African American ( ) Hispanic ( ) Japanese ( ) American Indian ( )  
Asian American ( ) Other ( )
8. Parent or Guardian \_\_\_\_\_ 9. Telephone No. \_\_\_\_\_
10. Address (if different from #4) \_\_\_\_\_

### B. Participants in the Planning Process (Names Optional)

\*Codes: **A:** Attendance at meeting **B:** Input provided (written or verbal) **C:** No Response

**Directions:** Place the code A, B, or C in the column each year indicating participation in the planning meeting.

Meeting Date

	8th	9th	10th	11th	12th
1. Student .....					
2. Parent(s)/Guardian .....					
3. Teacher(s) .....					
4. Instructional Supervisor/Principal .....					
5. Vocational Education Representative .....					
6. Guidance Counselor .....					
7. Social Worker .....					
8. Community College/University Representative ...					
9. Vocational/Technical School Representative .....					
10. Employment/Social Service Representative .....					
11. Other .....					

### C. Assessment

Type of Instrument	Results	Date	Grade
Learning Styles (List ways student learns best)			
Career Interest Survey (List top three)			

**C. Assessment (Continued)**

**Career Aptitude (See Assessment file for results)  
(ASVAB, OASIS, DAT, CAPS, etc.)**

<b>Name of Instrument</b>	<b>Grade</b>	<b>Date</b>
_____	_____	_____
_____	_____	_____
_____	_____	_____

**ACHIEVEMENT RESULTS  
(PLAN, PSAT, ACT, SAT)**

**PLAN label**

**PSAT, SAT labels**

**ACT labels**

**CATS**

SAMPLE

**D. Student's Career Goals**

**Level of Training Needed to Reach Goal**

	Voc/Tech School	2-Year College	4-Year College/University	Military	Employment
8th _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9th _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10th _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11th _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12th _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E. Action Plan for Service(s) Needed in Transition Plan**

Check the appropriate box to indicate services needed

- a. Additional Vocational Assessment
- b. Career Counseling and Guidance
- c. Employability Skills
- d. Work-Based Learning (e.g., Coop, Pre-Apprenticeship)
- e. Self-Sufficiency Skills Instruction.
- f. Social Skills
- g. Community Skills

	8th	9th	10th	11th	12th	Post Sec.	Person Responsible
a. Additional Vocational Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b. Career Counseling and Guidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c. Employability Skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
d. Work-Based Learning (e.g., Coop, Pre-Apprenticeship)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
e. Self-Sufficiency Skills Instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
f. Social Skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
g. Community Skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

**F. School-Sponsored and Approved Activities**

List student activities in which you have participated during grades 9-12 and “X” the appropriate grade level(s).  
List leadership positions held and accomplishments and “X” the appropriate grade level(s).

(To be updated each year)

Activity	Grade				Leadership Position or Accomplishment	Grade			
	9	10	11	12		9	10	11	12
<i>Example: Student Council</i>	X	X	X	X	Vice-President			X	
					President				X

- G. In addition, during the years the student is enrolled in high school, he/she may actively participate in the following activities:

**Service Learning**— meaningful activity that benefits the community. (Briefly describe activity completed. Include the number of hours).

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**School Service**— meaningful activity that benefits the school, school personnel, and/or other learners. (Briefly describe activity completed. Include the number of hours.)

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**Work-based Learning**— a work program, internship, or simulation with predetermined learning goals, at an approved place of employment and in compliance with applicable youth employment laws. (Please list place of employment.)

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**Student-initiated Experience** — a personally enriching activity or experience that complements the student’s graduation plan. (Briefly describe activity or experience completed. Include the number of hours.)

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**H. Hobbies and Leisure Activities**

Lined writing area for Hobbies and Leisure Activities.

SAMPLE

### SAMPLE INDIVIDUAL GRADUATION PLAN

_____ Commonwealth Diploma _____ College Prep _____ Tech Prep _____ Employment Prep					EXIT REVIEW			
<b>REQUIRED COURSES FOR MAJOR</b> _____			<b>CREDIT</b>	9	10	11	12	<b>Directions: Place a check in the appropriate box to indicate successful participation.</b>
<b>ENGLISH</b>			<b>4 REQUIRED</b>					
English I		1						<b>Specific Academic Courses (Four-Year Plan)</b>
English II OR World Studies-Eng		1						
English III OR Amer Studies-Eng		1						
Eng IV and Speech OR Eng IV and Appl Comm OR Eng IV and Reading OR AP English Lit and AP English Com		1						
<b>MATHEMATICS</b>			<b>4 REQUIRED</b>					<b>Academic Portfolio - Including the Following:</b>
Algebra I		1						
Geometry		1						
Algebra II		1						
Practical statistics OR Probability & Statistics		1						
Math Elective: _____		1						
<b>SCIENCE</b>			<b>3 REQUIRED</b>					<b>Documentation of School-Sponsored and Approved Activities</b>
Integrated Science		1						
Biology I		1						
Chemistry I OR Physics I		1						
Other Science		1						
<b>SOCIAL STUDIES</b>			<b>3 REQUIRED</b>					<b>Documentation of School-Sponsored and Approved Activities</b>
Integrated Social Studies I		1						
Integrated Social Studies II		1						
Integrated Social Studies III		1						
Other Social Studies		1						
<b>COMPUTERS &amp; RELATED TECH</b>			<b>1 REQUIRED</b>					<b>Documentation of School-Sponsored and Approved Activities</b>
Keyboarding & Applications OR Intro to Computers OR Technology Education I		1						
<b>FINE ARTS &amp; HUMANITIES</b>			<b>1 REQUIRED</b>					
History and Appreciation of Visual and Performing Arts		1						<b>Documentation of School-Sponsored and Approved Activities</b>
<b>HEALTH AND PHYSICAL EDUCATION</b>			<b>1 REQUIRED</b>					
Health		1/2						<b>Documentation of School-Sponsored and Approved Activities</b>
Physical Education		1/2						
<b>CAREER MAJOR</b>			<b>4 REQUIRED</b>					<b>Final Approval/Date/Comments</b>
_____	_____	4						
_____	_____							
<b>ELECTIVES</b>			<b>2-6 REQUIRED</b>					<b>Final Approval/Date/Comments</b>
_____	_____	2-6						
_____	_____							
<b>DATE REVIEW/INITIAL</b>								



**Career/Transition Plan For:** \_\_\_\_\_

PLANNING PROCESS					
A=In Attendance, B=Input Provided, C=No Response					
Meeting Date					
	9	10	11	12	13
Student					
Parent/Guardian					
Teacher(s)					
Counselor					
Principal/Supervisor					
Vo Ed Representative					
University Representative					
Tech School Rep					
Employment/Soc Svc					
ACTION PLAN - SERVICES NEEDED					
Addtl Vocational Assmnt					
Career Counseling					
Employability Skills					
Work-Based Learning					
Self-Sufficiency Skills					
Social Skills					
Community Skills					
Continuing Education					
Representative Post-Second					
Comm College/University					
Vocational Rehabilitation					
Employment Services					
Job Placement					
Ongoing Job Support					
CAREER GOAL					
8th					
9th					
10th					
11th					
12th					

SCHOOL SPONSORED AND APPROVED ACTIVITIES							
Date	Specific Work/Experience	Business/Organ.	Mentor	Svc Learn	Sch Svc	Work Based	Hrs
CAREER MAJOR:				ASSESSMENTS ADMINISTERED			
ADVISOR:				Career Interest Survey			
PLANS AFTER HIGH SCHOOL				Learning Styles Inventory			
8th Grade				Career Aptitude Assessment			
9th Grade				Achievement Test/CTBS 4			
10th Grade				PLAN, PSAT, Etc.			
11th Grade				ACT, SAT			
12th Grade				College Entrance/Vocational			

## **Transition Plans for Students with Disabilities**

### How do you Design Transition Plans for Students with Disabilities?

A transition plan for students with disabilities must include both an IGP and an Addendum for Students with Disabilities. The Individuals with Disabilities Education Act (IDEA-PL 105-17) requires that beginning at age 14 all students with disabilities have a statement of transition service needs in their Individual Education Program (IEP). The transition plan is developed by school staff, the student and parents, as well as agency representatives who play a role in helping students reach their desired post-school outcomes. The transition document should include, but is not limited to, the following:

- personal information,
- participants in the planning process,
- assessment information,
- career goals and desired post-school outcomes, and
- action plans.

A suggested transition plan for use with students with disabilities follows. For questions involving the use of this document or other transition issues call:

The Kentucky Transition Collaborative  
University of Kentucky  
(800) 288-0961  
Transition Timeline

The Kentucky Department  
of Education  
(502) 564-4970

## Individual Graduation Plan Addendum for Students with Disabilities

### Instructions for Using the Addendum for Students with Disabilities

The *Kentucky Students Career/Transition Plan* and the *Addendum for Students with Disabilities* are to be used together, as a single document, to facilitate the development of an effective transition plan. Sections A and B of the Addendum are a continuation of these sections from the Students Career/Transition Plan. There are six sections in the Addendum:

- A. Personal Information.**
- B. Participants in the Planning Process** - Identification of participants and the extent of their involvement in the transition planning process. Enter information on both forms as needed. No entry indicates that the particular individual was not contacted. Enter one of three codes for all individuals contacted: A = attended transition planning meeting; I = provided input (written or verbal) but did not attend meeting; N = no response, did not attend meeting or provide input.
- C. Assessment** - Complete this section on the Student Career/Transition Plan.
- D. Career Goals/Desired Post-School Outcomes** - A statement of consensus opinion concerning projected post-school and long-range outcomes in the areas of employment, education or training, residential and recreation/leisure. It is important that selection of outcomes be based on the wishes and needs of the student, not on availability of services in a particular community. Services that are not presently available should be noted and this information can be used at the state and regional level to plan for expansion and creation of needed services. Student and parent/guardian input may be facilitated by prior completion of Student and Parent/Guardian Surveys for Transition Planning. These survey forms may be obtained from the Kentucky Transition Project.
- E. Education Plan** - References the need for a statement of transition services in the IEP.
- F. Action Plan** - After desired outcomes have been identified, this section offers a list of potential steps that might be needed to attain post-school outcomes. Check each needed service and identify the person and agency responsible. Services can be provided by parents, public schools and/or community programs and agencies. During each annual transition meeting, services provided in the previous year should be circled.

**NOTE:** The information obtained in sections B, and F, may serve as documentation of interagency responsibilities and linkages required by IDEA (section 300.346).

**Student Name:** \_\_\_\_\_ **Social Security Number:** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

**A. Personal Information** (*Address items #1-11 on the Student Career/Transition Plan*)

12. Disability Category (*check one*): FMD MMD MD EBD PD HI  
VI LD OHI SP/L DB AUT TBI

13. School District: \_\_\_\_\_

14. Type of School (*check one*): Regular high school Other (*describe*): \_\_\_\_\_

15. Program Placement (R indicates 80% or more time in regular education environment, S indicates 20% or more time in special education environment):

School year .....	8	9	10	11	12	
Program placement (R or S).....						
Projected date of school exit (month/year).....						
Diploma (D) or Certificate (C).....						
Current Adult Status: E (Emancipated), G (Guardianship), NA (Not Applicable).....						

**B. Participants in the Planning Process** (Address items #1-11 on the Student Career/Transition Plan)

[Codes: A = Attendance at meeting; I = input provided (written or verbal); N = No response]

	Meeting Date (Month/Year)					
	/	/	/	/	/	/
School Year	8th	9th	10th	11th	12th	
12. Special education teacher(s) .....						
13. Special education director .....						
14. Psychologist .....						
15. Vocational trainer/job coach .....						
16. DVR or DFB counselor .....						
17. JTPA representative .....						
18. Community living skills training rep						
19. Residential services provider .....						
20. Adult services case coordinator .....						

**C. Assessment** (Complete this section on the Student Career/Transition Plan)

**D. Career Goals/Desired Post-School Outcomes** (Recommendation: Refer to the Parent/Guardian and Student Surveys for Transition Planning)

	Meeting Date (Month/Year)					
	/	/	/	/	/	/
School Year	8th	9th	10th	11th	12th	
<b>1. Employment</b> (check one)						
a. None (expected enrollment in post-secondary ed.)						
b. Competitive employment .....						
c. Supported employment .....						
d. Other (describe) _____						
<b>2. Postsecondary education or training</b> (check one)						
a. None (expected post-secondary employment) .....						
b. Community College or University .....						
c. Technical/Trade School .....						
d. Adult Education .....						
e. Other (describe) _____						
<b>3. Residential</b> (I for Immediate; L for Long term)						
a. With parents or relatives .....						
b. Independent living .....						
c. Group home living .....						
d. Other (describe) _____						
<b>4. Recreation and Leisure</b> (check one)						
a. No assistance required to participate .....						
b. Support needed to participate .....						
c. Other (describe) _____						

**E. Education Plan:** After completion of the Action Plan on the following page, incorporate a statement of transition services into the IEP within the present level of performance, annual goals and short-term instructional objectives regarding transition services determined to be the responsibility of the school.

**F. Action Plan for Service(s) Needed in the Transition Plan to Attain Desired Post-School Outcomes.** Indicate service(s) needed with the corresponding letter code. Briefly describe each service and write the one of the person(s) and agency responsible for providing each service.

- |  |                                     |                                 |
|--|-------------------------------------|---------------------------------|
| a. Vocational assessment/evaluation        | i. Community                        | q. Family support               |
| b. Career counseling/guidance              | j. Social skills                    | r. Income support               |
| c. Career development/vocational education | k. Self advocacy training           | s. Transportation assistance    |
| d. Community work experiences              | l. Recreation/leisure instruction   | t. Medical needs/therapies      |
| e. Job placement                           | m. Post-secondary education support | u. Assistive technology         |
| f. Post-employment support                 | n. Military                         | v. Case management/coordination |
| g. Academic training                       | o. Residential services support     | w. Emancipation/guardianship    |
| h. Domestic skills instruction             | p. Social support                   | x. Other ( <i>describe</i> )    |

Meeting Date:	/	Meeting Date:	/	Meeting Date:	/	Meeting Date:	/	Meeting Date:	/
Service Description and Responsible Party	Timeline Begin/End	Service Description and Responsible Party	Timeline Begin/End	Service Description and Responsible Party	Timeline Begin/End	Service Description and Responsible Party	Timeline Begin/End	Service Description and Responsible Party	Timeline Begin/End
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/
<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/	<i>Letter Code:</i>	/

## Advisory Programs

### What is an Advisory Program?

The Student Advisory Program, while not required, is a model for implementing the IGP. There is no standard or right way to organize advisory programs, but development of an IGP is a comprehensive process that should involve all school faculty. While there are many options, each school should select the organizational structure that best meets the needs of the students.

**How Long:** Advisory programs can vary in length depending upon the needs of the students.

**When:** Sessions may be scheduled for anytime during the school day. Whatever the choice, there must be a definite, regularly scheduled and designated time to complete advisory curriculum activities. Planning and structure is more important than the time of day.

**Where:** Sessions may be scheduled wherever advisees will feel comfortable and secure discussing advisory topics. Since some topics may be more personal in nature, care should be given to selecting meeting space that will allow privacy for discussions.

**Who:** Since groups are recommended to consist of only 12 - 15 students, some schools must use nearly all certified staff to meet this ratio. Most schools have found that administrators, counselors, media specialists, and other support staff enhance the program by serving as resource personnel instead of advisors. Ultimately, the decision as to the size of the advisory group depends upon the program goals and objectives. Groups may be composed of students from one grade level, multiple grade levels, or by career majors. The majority of programs assign students by grade level because the advisory curriculum activities are grade-level based. ALL students should be involved in the advisory process.

**What:** Advisory program activities should be selected to meet program goals and be sequenced developmentally. Some activities should assist students in developing individual graduation plans, examining career clusters, planning for school-to-work transitions, examining academic progress, and improving problem-solving skills. Teachers and advisors are encouraged to collaborate in the design of a Transition Plan for diverse learners. Materials may be purchased from a wide array of commercial products, or they may be developed by the planning committee.

### Why Have Advisory Programs?

School counselors need assistance from other educators in helping students develop Individual Graduation Plans that meet their academic and career needs. Advising, therefore, is a program that involves the entire school. The primary goals of advisory programs are to

- advise students regarding individual graduation plans;
- assist students in occupational exploration and the selection of a career major;
- assist students in planning a sequence of courses leading to a chosen career major;
- develop trusting relationships;
- emphasize positive student self-esteem and personal development;
- create a caring school climate;
- monitor the academic progress of students;
- promote critical-thinking skills through discussion and problem-solving activities;
- assist students in making responsible choices; and assist students in accepting responsibility for their actions.

### What are the Roles of Advisors?

- Role:** Advisors will serve as an advocate for each advisee and facilitate small group discussions and/or activities that will help students build self confidence, understand themselves and others, and evaluate their own progress. Advisors will facilitate advisory sessions in which advisees explore career clusters, select career majors, develop and update individual graduation plans, monitor academic progress, and improve decision-making skills.
- Primary Goal:** To provide a supportive environment that encourages the personal growth and development of all students by establishing a relationship with each advisee which is characterized by warmth, genuine concern, and understanding
- Primary Responsibilities:**
- Serve as an advocate for advisees
  - Provide a nurturing environment which promotes communication between advisor and advisees
  - Implement advisory program curriculum
  - Serve as positive role model for advisees
  - Foster quality communication and relationships between the school and the parents/guardians of advisees
  - Develop and update IGPs

### What are the Roles of Administrators, Counselors, and Other Support Staff?

- Role:** Administrators, counselors, media resource specialists, Youth Service Center staff, and other staff not serving as advisors should provide support, encouragement, materials and any other means needed to make the advisory program successful. All school staff members must work as a team to promote advisory program goals, objectives and activities.
- Administrators' Responsibilities:**
- To generate a total school philosophy that supports the advisory program
  - To promote the advisory program within the school and the community
  - To provide appropriate professional development training for advisors
  - To allocate time and space within the school for planning and implementing the advisory program activities
- Counselors' Responsibilities:**
- To help develop advisory programs by
    - selecting a Site Coordinator and forming a Planning Committee to include teachers from all grade levels and departments, students from each grade level, parents, counselors, Youth Service Center Staff, and administrators
    - gathering research/information about other successful programs and practices
    - determining school needs to be addressed in the Advisory Program
    - identifying primary goals and focus for Advisory Program
    - setting objectives for Advisory Program based upon identified needs and program goals
    - developing scope and sequence for program objectives
    - determining advisory group composition, advisor composition, frequency of meetings, and time scheduled for each meeting

- developing or acquiring advisory curriculum activities that will address objectives
- publicizing advisory program with teachers, students, parents and community leaders
- training all staff in group facilitation and interpersonal skills, and the career development process, and advisory program curriculum activities before implementing program
- designing procedures for on-going evaluation and revision
- maintaining on-going public relations campaign about advisory program with parents and community

- To coordinate and provide staff development training for advisors
- To respond to referrals about advisees from advisors
- To serve as a consultant and resource person for advisors
- To serve as a consultant for parents

Youth Service  
Center Staffs'  
Responsibilities:

- To help develop advisory program activities
- To promote parent involvement in advisory program activities
- To facilitate student referrals to community agencies
- To provide training and support to advisors
- To provide parent training workshops that will enhance the advisory program activities
- To respond to referrals regarding student needs such as food, clothing, and shelter

Media Resource  
Specialists'  
responsibilities:

- To serve as a resource for advisors
- To seek out books, videos, and other materials that can supplement and reinforce the advisory program activities



## High School Transcripts

In order to provide a more useful, comprehensive picture of what graduating students have learned, accomplished and experienced, the traditional high school transcript must be significantly redesigned and expanded. Rather than a simple listing of courses taken, grade-point average, and extra-curricular activities, a student's transcript should serve to document - for parents, employers, post-secondary institutions and other key publics - the full range of knowledge, skills, and abilities with which he or she leaves school.

The redesigned high school transcript should include, but not necessarily be limited to, the following components:

- high school courses and grades;
- attendance records;
- assessment results (achievement and aptitude), appropriate to the individual student;
- evidence of extra-curricular activities, if available; and
- evidence of service or work-based learning, if available.

Following this section, are two transcript prototypes which could be used to report courses completed, grades, and attendance. This is only a sample; school districts may use one of these prototypes or a transcript of their own design to report similar information.

## HIGH SCHOOL TRANSCRIPT

**SCHOOL NAME:**  
**SCHOOL ADDRESS:**

**SCHOOL PHONE:**  
**SCHOOL FAX:**

**STUDENT:** \_\_\_\_\_  
**CAREER MAJOR:** \_\_\_\_\_

	1 <sup>st</sup> Semester Grades			2 <sup>nd</sup> Semester Grades				1 <sup>st</sup> Semester Grades			2 <sup>nd</sup> Semester Grades		
	Subject	Grd	Cr	Subject	Grd	Cr		Subject	Grd	Cr	Subject	Grd	Cr
Year _____							Year _____						
Grade _____							Grade _____						
Days Absent _____							Days Absent _____						
Days Present _____							Days Present _____						
Total Credits _____							Total Credits _____						
	1 <sup>st</sup> Semester Grades			2 <sup>nd</sup> Semester Grades				1 <sup>st</sup> Semester Grades			2 <sup>nd</sup> Semester Grades		
	Subject	Grd	Cr	Subject	Grd	Cr		Subject	Grd	Cr	Subject	Grd	Cr
Year _____							Year _____						
Grade _____							Grade _____						
Days Absent _____							Days Absent _____						
Days Present _____							Days Present _____						
Total Credits _____							Total Credits _____						

**GRADING SYSTEM**

- A 94-100
- B 86-93
- C 76-85
- D 70-75
- F Below 70

**TOTAL CREDITS**

\_\_\_\_\_

**RANKED** \_\_\_\_\_

**IN CLASS OF** \_\_\_\_\_

**GRADUATION DATE**

\_\_\_\_\_

**PRINCIPAL:** \_\_\_\_\_

## HIGH SCHOOL TRANSCRIPT

School Name: \_\_\_\_\_

Name _____	SSN _____ - _____ - _____	DOB ____/____/____
Address _____	Phone No. _____	Sex _____
Parent _____	Entered ____/____/____	From _____

Code	Course Name	9	10	11	12	13	Cr	Code	Course Name	9	10	11	12	13	Cr
<b>ENGLISH - 4 Total Credits Required</b>								<b>SOCIAL STUDIES - 3 Total Credits Required</b>							
	English I								World Civilization/Geography						
	English II or World Studies								U.S. History/Economics						
	English III or American Studies								Government						
	English IV								World Civilization						
	AP English								U.S. History						
									Economics/Government						
									Geography						
<b>MATHEMATICS - 3 Total Credits Required</b>								Integrated Social Studies I							
	Preparatory Algebra								Integrated Social Studies II						
	Algebra I								Integrated Social Studies III						
	Geometry														
	Algebra II							<b>ARTS &amp; HUMANITIES - 1 Total Credits Required</b>							
	Data and Measurement								History and Appreciation of Visual and						
	Integrated Math I								Performing Arts						
	Integrated Math II														
	Integrated Math III							<b>HEALTH/PHYSICAL ED - 1 Credit Required</b>							
	Applied Math 1								Health Education I						
	Applied Math 2								Physical Education I						
	Applied Math 3														
<b>SCIENCE - 3 Total Credits Required</b>								<b>ELECTIVES</b>							
	Physical Science														
	Life Science														
	Earth/Space Science														
	Integrated Science I														
	Integrated Science II														
	Integrated Science III														
	Introductory Physics w/Earth/Space Science														
	Intro. Chemistry w/Earth/Space Science														
	Intro. Biology w/Earth Space Science														

Graduation Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ GPA: \_\_\_\_\_ Program: \_\_\_\_\_ Major: \_\_\_\_\_ Distinction: \_\_\_\_\_

Prototype 1 or 2

**SCHOOL NAME:** \_\_\_\_\_  
**ADDRESS:** \_\_\_\_\_

**STUDENT NAME:** \_\_\_\_\_  
**ADDRESS:** \_\_\_\_\_

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**EXTRA CURRICULAR INVOLVEMENT**

**SERVICE OR WORK-BASED LEARNING**

SAMPLE

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**HONORS/AWARDS**

## School Counseling Services

School counseling programs assist in enabling all students to achieve success in school, and to develop into contributing members of our society. The school counseling program touches and serves every aspect of the school, from dropout prevention and school safety to consolidated planning.

School counselors facilitate the achievement of the six learning goals as set forth in the Kentucky Education Reform Act (KERA) by participating in

- assessment activities,
- curriculum committees,
- cooperative learning groups,
- school improvement activities,
- strategic or consolidated planning efforts,
- school council activities,
- school-to-career initiatives, and
- professional development programs.

The centerpiece of KERA is its vision of what students should know and be able to do as a result of their school experiences. School counselors have the expertise and occupy a unique position from which they can address Kentucky's Six Learning Goals.

**Goal 1: Students are able to use basic communication and mathematics skills for purposes and situations they will encounter throughout their lives.**

Responsibilities of certified school counselors can include

- providing assistance in this goal's achievement by helping students and parents see the importance of communication in key areas of life, such as educational and career planning, public and community awareness, and personal/social relationships.
- helping students make appropriate selections of courses as they plan for their school program, post-secondary education, or for a career.
- reinforcing the importance of communication skills as they work with students in career planning and course selection.
- encouraging students to practice communication skills as they conduct individual and group activities in such areas as: conflict resolution; assertiveness versus aggression; effective listening; and other important areas.
- working with school staffs by helping them understand student progress and needs, and in developing an appropriate communications and math curriculum.

**Goal 2: Students shall develop their abilities to apply core concepts and principles from mathematics, the sciences, the arts, the humanities, social studies, practical living studies, and vocational studies to what they will encounter throughout their lives.**

Responsibilities of certified school counselors can include

- working directly with students by helping them to see the relationship between school work and their future lives, including post-secondary education, employment, and personal/social life.

- stressing the importance of good attendance and staying in school.
- encouraging students to develop an appreciation for those aspects of the curriculum that enrich their lives via music, literature, and the arts.
- guiding students through group and individual work to examine their interests, aptitudes, and experiences as they relate to self understanding and appropriate educational and career choices.
- helping parents understand the abilities, needs, and behaviors of their children.
- assisting school staffs in planning a curriculum that will meet student needs, and also will help the school achieve its goals.
- conducting activities that assist students in overcoming traditional barriers to appropriate educational experiences, such as, assisting girls in maintaining an interest in math and science.
- developing and implementing other important programs such as: tutoring; after school study; extended school services; community and school related programs; and family resource/youth services centers.

**Goal 3: Students shall develop their abilities to become self-sufficient individuals.**

Responsibilities of certified school counselors can include

- conducting group and individual activities in positive self concepts, substance abuse, personal safety, family-related issues (e.g., divorce, abuse, death/loss, relocation, sibling relationships), study skills, time utilization strategies, goal setting, conflict management, respecting the rights of others, assertiveness training, peer counseling, self discipline, responsible and nonviolent behavior, decision making, human relations, and critical thinking.
- providing teachers and parents resources, consultation, and training in areas of effective parenting, effective discipline techniques, understanding child growth and development, planning and implementing appropriate education experiences, helping develop student assistance programs, advisor/advisee programs, and classroom management strategies.

**Goal 4: Students shall develop their abilities to become responsible members of a family, work group, or community, including demonstrating effectiveness in community service.**

Responsibilities of certified school counselors can include

- conducting group and individual activities which promote, reinforce, or allow for practical skills in critical thinking, consideration of new ideas, decision-making, and problem-solving. Such activities might include group counseling; group problem-solving and planning; conflict management; multicultural programs supporting diversity; visits and field trips to areas of the community, work place, or other schools; and community-related work or community services with student opportunities.
- helping to reduce the potentially negative effects of our society's heavy emphasis on competition.
- designing programs which utilize students as leaders, as aides, and as positive role models for other students.
- helping parents and faculties understand barriers to cooperation and how to develop programs and classroom activities which promote responsible group work.

- assisting school staff in being sure that all students are involved in some school activities.
- guiding parents and faculties in developing cooperative behaviors which model appropriate behavior and group work.

**Goal 5: Students shall develop their abilities to think and solve problems in school situations and in a variety of situations they will encounter in life.**

Responsibilities of certified school counselors can include

- leading activities which promote the application of critical thinking skills, including gathering information and resources, analyzing data, personalizing information about self and other opportunities, and using this information in making appropriate decisions.
- conducting activities such as, educational, career, vocational, and personal/social decision-making; maintaining a career portfolio; conflict resolution; and understanding logical consequences.
- consulting with parents on how to foster and reinforce these skills in their children.
- coordinating with teachers on activities that might be included in their curriculum which help develop these skills.

**Goal 6: Students shall develop their abilities to connect and integrate experiences and new knowledge from all subject matter fields with what they have previously learned, and build on past learning experiences to acquire new information through various media sources.**

Responsibilities of certified school counselors can include

- helping students develop appreciation and positive attitudes toward learning by providing activities and resources which show how a combination of learning disciplines are essential to the successful pursuit of personal fulfillment and satisfying careers.
- assisting students to understand that learning gains meaning and significance as it builds on previously acquired knowledge.
- planning and coordinating programs which take students outside the classroom into the community and into the world of work.
- facilitating activities to include dropout prevention strategies, identification of students at risk, and development of school attendance and performance incentive programs.

## School Governance

Since July of 1990, schools in Kentucky have been directly accountable for developing curriculum (what is to be taught), determining instruction (how course content is delivered to students), and assessing progress of students in their building (KRS 160.345). Councils are legally responsible for making school level policy to enhance student achievement and meet the KERA goals [(KRS 160.345 (2)(c) 1.], on which the Commonwealth's testing and accountability system is based. Principals must administer the policies of the school council, and the entire staff is required to implement the policies.

Because schools are held accountable, Kentucky lawmakers have given school councils some very specific policy responsibilities in the area of curriculum, including but not limited to:

- determination of curriculum, including needs assessment and curriculum development. (2)(i)
- assignment of all instructional and noninstructional staff time. (2)(i)
- assignment of students to classes and programs within the school. (2)(i)
- planning and resolution of issues regarding instructional practices. (2)(i)
- selection of professional development. (2)(8)
- selection of textbooks. (2)(g)
- selection of instructional materials. (2)(g)

According to KRS 160.345, when determining the curriculum policy and/or developing the curriculum for their school, school councils must consider the Commonwealth's six goals and the KBE regulations containing the *Program of Studies* and minimum high school graduation requirements for Kentucky students. In order to implement the chosen curriculum, school councils can determine, through policy, how students and staff are assigned to classes and programs in the building, what effective instructional practices staff will use with students, what materials and textbooks students will use, and what types of professional development staff will need in order to implement their curriculum. Additional school council policy areas can be found in KRS 160.345 (2).



## Library Media Programs

The purpose of the library media program is to promote student achievement, lifelong learning, and information literacy<sup>1</sup> by helping students:

- efficiently and effectively locate, organize and present information relevant to a specific need or problem (Academic Expectations 1.1, 1.10, 1.16);
- critically evaluate, interpret and select information that meets their needs (Academic Expectations 1.2, 1.3, 1.4, 1.16);
- function as independent learners by using library media resources as well as resources beyond the school site (Academic Expectations 1.1, 1.12, 1.4, 1.16, 3.7); and
- pursue areas of personal interest through reading and research in the library media center and beyond (Academic Expectations 1.2, 3.7, 5.1, 5.5).

The library media program is an essential part of the school's instructional program, providing services to the entire school community. Both the library media center and the library media specialist are accessible to all students during the school day and support each curricular area as well as the interests and self-education needs of individual students. Library media collections should be developed and evaluated collaboratively with teachers and others in the school community to support and enhance the school's curriculum and to meet students' diverse learning styles and needs.

To promote learning, the library media program

- provides a range of information and services including print, nonprint, and electronic resources;
- provides physical, flexible, and equitable access to all information resources to support diverse learning abilities, styles, and needs;
- encourages students to engage in reading, viewing, and listening for understanding and enjoyment;
- includes appropriate, current and accurate print and nonprint resources for supplemental and leisure reading;
- includes appropriate, current and accurate print and nonprint resources for research/inquiry in subject areas; and
- includes appropriate, current and accurate print and nonprint resources to meet the instructional and professional needs of teachers.

The library media program should provide activities to promote reading, student achievement, and life-long learning in a climate conducive to learning. To promote student achievement of learning goals, the library media program must be essential to both learning and teaching and fully integrated into the objectives and content of the school's curriculum.

The school library media programs encourage students to

- employ successful research/inquiry strategies and evaluate resources which stress critical thinking.
- develop multimedia products to relate information to whole group.

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<sup>1</sup> "Information literacy, the ability to locate, process, and use information effectively, equips individuals to take advantage of the opportunities inherent in the global information society." (Association for Supervision and Curriculum Development, 1991)

- responsibly use the intellectual property of others from all formats (e.g., print, nonprint, electronic) and credit accurately.
- read for entertainment as well as knowledge-building.
- collaborate with others, both in person and through technology, to create and evaluate information products.

The library media specialist should teach information literacy, inquiry strategies, and effective use of the library media center. The library media specialist should model and promote collaborative planning, curriculum development, and effective teaching. Also, the library media specialist should model technology integration for learning and for teaching. The library media specialist collaborates with teachers to

- teach the information literacy process with emphasis on successful inquiry strategies and evaluation of resources to stress critical thinking.
- guide student(s) in multimedia production.
- encourage individual and/or small group projects which are initiated by student interest.
- guide students to incorporate information from print and electronic resources in student products.
- stress responsible use of intellectual property of others in all formats (e.g., print, nonprint, electronic).
- encourage “critical” reading of all assignments to promote higher order thinking.
- encourage students to read for entertainment as well as knowledge-building.
- select materials for use by students and teachers.

Additional information can be found in *Online II: Essentials of a Model Library Media Program* which is located on the Internet in the Library Media Specialist Academic Village, <http://lmsvillage.k12.ky.us> under “Resources”.

# Exceptional Children

## Introduction

The section of this manual on “Designing Your Own Courses,” identifies the importance of understanding the characteristics, needs, and abilities of your students when you design and deliver a course of study. Critical components of designing quality and effective course models includes thinking about who the students are; how to organize the content to make sure each student has the opportunity to learn; how to design intentional well connected learning activities; and what extensions (accommodations and specially designed instruction) are necessary to incorporate into the course model design and delivery. For more information about extensions refer to the extensions piece in the Designing Your Own Courses section of this manual.

This section of the manual addresses guidelines for providing instruction to exceptional children based on the *Program of Studies*. Exceptional children are children with disabilities and children who are gifted and talented. This section covers the curriculum framework for all students and how it applies to exceptional students; a context for making decisions about an exceptional child’s course of study leading to a diploma or a certificate program; and the design of course models using a functional approach. It is important to understand what the curriculum framework is for all students and how it applies to exceptional students.

## Curriculum Framework for All Students

*What is the Curriculum Framework that guides instruction for students with disabilities and students who are gifted and talented?*

Kentucky expects all students to achieve at high levels and holds schools responsible for providing learning experiences and curricula that ensure this achievement. Kentucky’s Learning Goals and Academic Expectations define what all students, including all exceptional students should know and be able to do as a result of progressing through an educational course of study in Kentucky’s schools. The learning goals and academic expectations provide the anchor for everything else we use to develop content standards, curricula, courses, units of study, and instructional plans.

The *Program of Studies*, written to be inclusive of all students, contains the required content standards correlated with the academic expectations and the *Core Content for Assessment* for all students primary through high school. It incorporates national standards for the content area and defines the standards for the high school graduation requirements discussed previously in this manual.

*Transformations: Kentucky’s Curriculum Framework* is a document schools have used as a technical assistance guide for curriculum development. It is also based on the learning goals and academic expectations illustrating demonstrators as benchmarks of learning. It is a supportive document that remains a valuable tool for curriculum, course, and unit development. You will find that *Transformations* provides guidance in designing learning experiences for all students, including exceptional students. *Transformations* contains teaching strategies and examples of activities that might be used at various school levels.

Individual student planning for exceptional children is anchored in what we want all students to know and be able to do—the general education curriculum. Individual instructional planning supports the attainment of the six learning goals and academic expectations and, therefore, is carefully and intentionally designed to make clear connections for student learning. The complexity and depth of content may vary based on each student’s needs, interests and abilities as well as the types of learning experiences, the pace of learning, how students demonstrate their learning, and the tools needed to learn. Critical to student success is teacher knowledge of content and a range of instructional strategies to communicate the content. For exceptional students, keep the following points in mind.

Individual student planning for all exceptional students

- supports student learning by defining how students in Kentucky will access curriculum and instruction;
- actively involves students in the content;
- involves selecting meaningful goals and objectives which lead to acquisition of content, skills and processes that will help them access the general education curriculum;
- provides for continuous progress;
- includes necessary support structures, materials and resources; and
- involves collaborative planning among general education teachers certified in content areas, special education, gifted education, Title 1 teachers, and other support personnel.

Discipline-based content is critical for all students to be successful at school, at home, on the job, and as a contributing citizen. We use science, social studies, mathematics, language arts, arts and humanities, and practical living as life-long learners and, therefore, students need to know the content. However, students with disabilities frequently have challenges in areas that impact learning content; that is, they lack efficient strategies for reading, writing, and math; memory strategies; or strategies for efficiently processing information. They also may have sensory impairments including vision and hearing losses; social, emotional and behavioral issues; or cognitive issues that interfere with learning content if there are no extensions for learning. Extensions can be provided to support learning. However, these will not be successful if the student cannot link reading, writing, and math to content; use them to respond to content, read about the content, listen to the content, and demonstrate what they know about the content; or develop other ways to learn content.

The Individual Education Program (IEP) or 504 Plan, developed for students with disabilities, is designed to help students with disabilities access and move through the curriculum to achieve higher levels of knowledge and reach Kentucky’s Learning Goals and Academic Expectations designed for all students. That is why it is so important to embed instruction for students with disabilities in the context of content. An IEP or 504 Plan targets individual student goals and objectives essential to reaching the academic expectations. They include services, supports, and extensions needed by the student to be involved and progress in the general education curriculum as defined in the *Program of Studies*.

For students with disabilities, achieving results requires

- knowledge of the content for the discipline;
- intentional and deliberate planning of instruction;
- selection and implementation of research-based practices which improve student learning;
- rich and engaging content connected to real-life applications and authentic contexts;
- instructional alignment of IEPs and academic expectations, content standards, school curricula, unit and lesson planning;
- supplementary aids and services to support the opportunity to learn and access to the general

- education curriculum; and
- remediating, teaching strategies, or circumventing their barriers to accessing content.

Content for students who are gifted and talented in one or more of Kentucky’s recognized areas (i.e., intellectual, creativity, academic, leadership, and visual and performing arts) must challenge the individual student based on the student’s needs, interests and abilities. For these students, it is important to arrange for extensions and design courses and instruction to meet their challenging needs. Using continuous progress strategies will help you identify what your students already know and what they are ready to learn. Providing extensions such as varying the complexity of the content, accelerating the pace, and providing alternative ways for students to demonstrate what they know opens the course to challenge students ready to learn at various levels. Extensions are designed to replace or modify an instructional or assessment activity rather than add an additional task to be assigned after completing a whole class assignment.

Therefore, special education, gifted education, and general education teachers must work collaboratively as they plan, design, and deliver curriculum to assure appropriate instruction for exceptional students. As the process of designing courses of study is initiated, remember that courses, units of study, and lesson plans for exceptional students

- are anchored in specific content of the general education curriculum with appropriate extensions for depth and complexity of content based on student needs, interests, and abilities;
- include a range of instructional strategies and instructional routines to deliver content;
- provide a range of continuous assessment options for students to demonstrate learning;
- anchor learning and assessment activities in meaningful (real world) contexts; structured around an issue, a problem, or guiding or essential questions which assist students with connecting and integrating their learning experiences with a framework for learning;
- are designed and implemented to facilitate students making explicit connections;
- are inclusive of a variety of materials and technology supports which allow a student to access content in a variety of ways; and
- are designed to develop the skills and processes a student needs to maximize access and success in the general education curriculum.

You can think of all these structures—Kentucky’s Learning Goals, Academic Expectations, *Program of Studies*, *Transformations: Kentucky’s Curriculum Framework*, the *Core Content for Assessment*, local curricula, courses, instructional units and individual student planning including IEPs or 504 Plans—as the building blocks for student learning in Kentucky. All parts are interconnected and supportive blocks which build a competent student who reaches Kentucky’s Learning Goals, Academic Expectations, and lifelong goals of successful transition to employment, post-secondary education and other life choices.

### High School Graduation Requirements

*How do the new high school graduation requirements and the Program of Studies impact decisions about what we teach, how we plan and how we deliver instruction for exceptional children?*

The chart “What’s New and What’s the Same,” on the following page provides an overview of changes in the high school graduation requirements and the *Program of Studies*, including some key changes as applied to exceptional children. One of the key changes is content standards for all students are now defined in the *Program of Studies*. Also, the *Program of Studies* requires special and gifted education teachers to collaborate with teachers certified in content areas to design, develop, and plan for the delivery of courses for high school credit. For students with disabilities, the Admissions and

## *Program of Studies*

### What is New and What is the Same for Exceptional Children

What is new?	What is the same?
<ul style="list-style-type: none"> <li>• <i>Program of Studies</i> is aligned with Kentucky’s Learning Goals, Academic Expectations, and Core Content.</li> <li>• “Rigorous content” for functional classes refers to the content identified in the <i>Program of Studies</i>.</li> <li>• Integrated or interdisciplinary courses are planned and designed collaboratively with teachers certified in content areas.</li> <li>• High school courses delivered by special education teachers are collaboratively planned and designed by special education teachers with general education teachers certified in content areas. The admissions and release committee process documents the collaborative course development.</li> <li>• Schools do not need approval from KDE to teach an elective course; if an integrated, applied, interdisciplinary, or functional course is substituted for a required course for graduation, a rationale and course description must be provided.</li> <li>• Individual Graduation Plan (IGP) format is aligned with the new high school graduation requirements and the <i>Program of Studies</i>.</li> <li>• Pathways to Careers replaces Special Vocational Program of Studies/the World of Work.</li> <li>• “Functional” is redefined as an approach to designing and delivering content to all students.</li> <li>• Individual Disabilities Education Act, as amended 1997, requires Individual Education Programs (IEPs) to be anchored in the general education curriculum and to support access to, participation in, and progress in the general education curriculum.</li> <li>• IEPs include supplementary aides and services to support the opportunity to learn and access to the general education curriculum.</li> <li>• Certificate Program for Students with Moderate to Severe Cognitive Disabilities is aligned with the eligibility criteria for the Alternate Portfolio.</li> </ul>	<ul style="list-style-type: none"> <li>• For students with disabilities, the student’s Admissions and Release Committee (ARC) determines placement.</li> <li>• Special education teachers providing resource or special class plan services may teach high school courses and grant high school credits to students with disabilities.</li> <li>• Eligibility criteria for the Certificate Program is the same.</li> <li>• School councils set policy for curriculum.</li> <li>• Schools continue to have flexibility in organizing and delivering content in primary through high school.</li> <li>• Schools continue to provide services matched to the needs, interests, and abilities of students who are gifted and talented.</li> <li>• Instruction for students is based on continuous progress.</li> <li>• Instruction is delivered across school and non-school settings (community, job sites).</li> <li>• Honors and Advanced Placement courses continue to be options for meeting the academic needs of advanced level students.</li> <li>• Honors courses continue to be offered in middle school to meet advanced academic needs of students.</li> <li>• Students may receive high school credit for courses taken in middle school that meet the high school content standards and other provisions outlined in this manual and the <i>Program of Studies</i>.</li> <li>• Content builds from one level to another (i.e., primary to intermediate to middle to high school).</li> </ul>

Release Committee or 504 committee will decide how and when collaboration will take place, and the appropriate placement for services based on an individual student's needs.

There is also a new definition for "functional." For many teachers, the new definition for "functional" will change how you think about content, course design, and delivery. The chart on page 107 indicates the changes in the definition. Also, you will learn more about the functional approach in the section

## **Certificate Program for High School Students with Moderate and Severe Disabilities**

### Overview

This section of the exceptional children program description is intended to provide the reader with the broad framework for the development of individualized, secondary level programs for students in Kentucky's Certificate Program. Referenced throughout this section are additional resources and links to more in-depth information to support program design and implementation.

The Certificate Program cannot be implemented by a single teacher acting in isolation and can only be successfully implemented through a strong team effort. This team must include the building-level administrator, special education teacher, collaborating general education teachers, and related service personnel as needed. The student's family can be especially helpful and the student himself/herself should be included. Nondisabled peers also have proven to be valuable members of this team.

This section is organized into three basic parts:

- Certificate Program Eligibility
- Service Delivery Standards
- Policy Issues Related to Service Delivery Standards

### Certificate Program Eligibility

Eligibility for a Certificate Program is determined prior to the student entering high school in order to make preparations for secondary services consistent with the student's transition plan and Individual Education Program (IEP). This decision significantly impacts the student's future course of study, therefore, time must be allowed for planning appropriate service delivery and involvement of the parent and student in the process.

Student eligibility for participation in the Certificate Program is determined by the Admissions and Release Committee (ARC), which at a minimum is comprised of a special education teacher, regular education teacher, support staff, student, parent, and school administrator. This decision is a serious one as students in the Certificate Program will receive a certificate of program completion versus a high school diploma. Students who shall be considered are those whose limitations in cognitive functioning prevent the completion of *Kentucky's Program of Studies* even with extended school services and other program modifications and adaptations. Eligible students require *extensive* instruction in multiple, community-based settings to ensure skill acquisition, maintenance, and generalization to real-life contexts.

The eligibility criteria for the Certificate Program is commensurate with student eligibility for Alternate Portfolio Assessment: therefore, the ARC should have extensive information regarding previous ARC consideration of Alternate Portfolio Assessment eligibility as a strong indicator of the appropriateness of Certificate Program services. State data indicates that approximately .06 percent of public school students (i.e., those students with the most significant cognitive disabilities) meet the eligibility criteria for the alternate portfolio. Anytime a local district has data indicating higher percentages of students being determined eligible for a Certificate Program, there needs to be a thorough review to assure the eligibility determination process is being carried out appropriately.

### ARC Determination of Certificate Program Eligibility

The following addresses each of the regulatory requirements for Certificate Program eligibility and the ARC process to follow in making this decision.

According to 704 KAR 3:305, if the severity of student's disability is such that it precludes a course of study leading to a diploma, an alternative program shall be offered. As stated in *Kentucky's Program of Studies*, the ARC shall document that the following criteria are met

- The student's demonstrated **cognitive disability** and adaptive behavior prevent completing the regular course of study, even with program modifications, adaptations, and extended school services.

A fundamental issue of student eligibility for the Certificate Program is the cognitive functioning level of the student. If the student's cognitive level is such that the requirements for earning the required course credits for a diploma cannot be completed, the student may be a candidate for a Certificate Program. This assumes that **full** consideration is given to extensive program modifications, adaptations, and extended services as ways to allow the student to receive a regular diploma, and in spite of the range and nature of accommodations provided, the student does not have the intellectual capacity to master the content. It **must** be clearly documented that there is evidence of attempts to provide accommodations to allow earning a diploma and that these have proven insufficient. Students potentially being moved into a Certificate Program without substantiation of exhaustive accommodations being tried and proven unsuccessful could lead to due process concerns.

- The student's current **adaptive behavior** requires extensive direct instruction in multiple settings to apply functional skills in school, work, home, and community environments.

Documentation must be provided to demonstrate that the student's current adaptive behavior functioning in social competency and independent functioning is limited to the point that the student requires a high degree of direct instruction in natural contexts. This may refer to social skills that need to be developed, and/or independent living skills that are only acquired by instruction in natural school, work, home, and/or community settings.

- The student's inability to complete a regular course of studies is not the result of excessive or extended absences nor the result of visual or auditory disabilities; specific learning disabilities; emotional behavioral disabilities; or social, cultural, or economic differences.



A decision to serve a student in a Certificate Program cannot be on the basis of common problems in earning a regular diploma, such as a lack of credits due to poor school attendance. In addition, screening and/or evaluation data should verify it is not attributable to problems with vision or hearing. Learning disabilities and or behavior problems may be present, but these difficulties cannot be the reasons for Certificate Program consideration, as is also the case with student diversity in terms of their social, cultural, or socio-economic differences.

- The student, when instructed solely or primarily through school-based instruction, is unable to apply academic skills at a minimal competency level in natural settings; and the student is unable to acquire, maintain, and generalize skills without intensive, frequent, and individualized, community-based instruction (CBI).

One of the strong indicators of Certificate Program eligibility is data that indicates the student cannot use instruction in real environments unless direct instruction is received in home, community, and work settings. This is due to a documented problem with generalization of skills taught primarily in school settings. The student needs natural cues and circumstances associated with the real environment to learn and apply the skills after instruction. This means a need exists for small group and or individual CBI, which is not the same as a field trip experience that just provides awareness or exposure to community settings. While CBI can be a good strategy to foster skill application for all students, the intensity and frequency is much greater for Certificate Program candidates, including the provision of situational assessment in community settings to determine instructional needs.

Validating Certificate Program eligibility through the ARC committee process requires the following steps:

- determination and documentation in the ARC Conference summary that the student meets each of the eligibility criteria for the certificate program; and
- documentation during the ARC Conference summary the basis for its decision, using current and longitudinal data such as performance data across multiple settings; behavior observations in multiple settings; cognitive functioning information, adaptive behavior assessment; and continuous assessment of progress on IEP goals and objectives.

### Access to the General Curriculum

At all age levels, the student must be provided supports and services to be involved in and to progress in the general curriculum, whether delivery occurs in general education settings or in special education settings. Collaboration must occur between special education teachers and general education staff in planning instruction to assure alignment of instruction with the Kentucky's Academic Expectations. In accordance with the requirements of *Kentucky's Program of Studies* (704 KAR 3:303), the IEP and/or ARC conference summary should address how and when this collaboration takes place prior to and during the course of implementation of the IEP. Even though a Certificate Program student is not working toward a diploma, their course work still needs to reflect Kentucky's Academic Expectations, demonstrate access to the general curriculum (IDEA 1997), and reflect a comparable challenge consistent with the goals of the IEP. For students on a Certificate Program, demonstration of those expectations is still to be evident in their alternate portfolio.

The IEP and curriculum link directly to *Kentucky's Program of Studies* and academic expectations. The Alternate Portfolio Assessment is based on the unique learning needs of students with moderate to severe cognitive disabilities, but is still well-grounded and connected to the majority of the academic expectations. While students in the Certificate Program are not required to demonstrate the same degree of mastery of the academic expectations as other students, they are required to evidence a connection between their instructional activities and the conceptual basis of most of the academic expectations. For example, a student with moderate to severe disabilities may address the academic expectation related to *patterns, constancy and assessing information* through the use of a communication system during activities such as arrival, class meetings, development of a Kentucky history theme, or in completing journal in language arts. Using the communication system in the context of daily routines requires understanding of *patterns and constancy*. Applications for purposes of expressive or receptive communication requires *accessing information*. By embedding their instruction in the existing curriculum and daily routines, access to the general curriculum is greatly facilitated while still allowing for student participation in meaningful activities related to their IEP goals and objectives. Students in a Certificate Program can participate in regular classroom activities in one of four ways. Students may participate in

- curricular activities in the same way as other students,
- the same activities but a different level than other students,
- the same activities but different educational goals that are embedded into the classroom activities and routines, and
- different activity with different goals but related to the classroom activities.

### Service Delivery Standards

The Certificate Program for students with moderate and severe disabilities is based upon a set of core Service Delivery Standards. These standards are reflective of the Scoring Dimensions and entry requirements of Kentucky's Alternate Portfolio Assessment as well. The following text identifies and explains the eight Service Delivery Standards.

- **Opportunities for choice, decision making, and self-advocacy**, leading to the goal of self-determination, are systematically embedded into the student's program. This includes the opportunity to be a primary participant in the development of both the Individual Transition Plan and IEP, but it also extends to the choice of elective classes and extracurricular activities, as well as opportunities to practice decision-making throughout the regular school day.
- Along with the student, **the family is a full partner** in the development of the student's educational program. This does not mean merely sitting in on the IEP meeting and signing off on the forms; this means having a full voice in determining the essential life outcomes for which the IEP is the yearly road map. The process of prioritizing these life outcomes and identifying educational goals with families can be accomplished through personal futures planning or other similar means of family involvement.
- Needed related services (speech/language therapy, physical and/or occupational therapy, rehabilitation counseling, therapeutic recreation) are provided through a **transdisciplinary team approach that embeds critical skills** (e.g., communication) into 'real-life' performances. Isolated therapy approaches do not allow the student to practice the skills in the settings in which those skills are needed. Team members must therefore be willing to share their knowledge and expertise with the other members of the team, to support the attainment of the student's desired life outcomes.

- The student’s program provides maximum opportunities for **positive, sustained interactions with nondisabled peers, with the goal of promoting mutual friendships**. This includes social interactions opportunities for participation in cooperative learning in general education classes, school-sponsored extracurricular activities, structured peer tutoring options, and/or natural supports in work settings. A critical outcome of education (and one of the best predictors of successful post-school adjustment) is the development of supportive friendships, which can only occur when students share significant amounts of time together as well as common interests and age-appropriate activities.
- The student’s program samples a **range of curricular options**, based on the general education curriculum and such life domain areas as vocational, recreation-leisure, and personal management (e.g., community and daily living). At the same time, students must evidence performance of Kentucky’s Academic Expectations, as these expectations are intended for all students. General education courses provide excellent opportunities for the performance of critical interpersonal and cooperative work skills for high school students in the Certificate Program, as well as opportunities for evidencing Kentucky’s Academic Expectations. Designation of eligibility for the Certificate Program does not limit or prevent the student’s participation in any general education class, if the student’s IEP goals can be achieved in the context of the regular education class with appropriate modifications and supports.
- Instruction is provided within the context of **real-life activities with actual performance demands**. Learning and practicing skills occur in the setting(s) where the behavior is to occur (e.g., community-based instruction, general education classroom settings). This is absolutely essential for students whose very eligibility for the Certificate Program is based in part on the criteria that: “the student, when instructed solely or primarily through school-based instruction, is unable to apply academic skills at a minimal competency level in natural settings” and “is unable to acquire, maintain, and generalize skills without intensive, frequent, and individualized community-based instruction” (704 KAR 3:303). School- or classroom-based instruction alone is insufficient.
- Students receive instruction in age-appropriate settings that provide **materials, accommodations, and instructional techniques, including assistive technology**, commensurate with the student’s **chronological age** and that promote independence and self-determination. Secondary programs for all students must always convey a respect for the student as an emerging adult member of his/her community in accordance with the student’s own preferences. To the extent possible, accommodations are nonintrusive, competence building, and in accordance with the student’s own preferences.
- Instruction focuses on those **skills and supports** necessary for successful **transition to adult life** in the community. This requires coordinated transition planning across school and community agencies, and means that both skill development (e.g., job skills, mobility, money-management skills) and the creation of formal and informal supports (e.g., job coach assistance, mentoring from coworkers, transportation to work) are critical to successful post-school outcomes. Each of these issues must be addressed in the student’s transition plan.

In the next section of this document, we turn to the regulatory and policy basis for these Service Delivery Standards. In the Implementation Guidelines following this section, the specific application of the standards to high school programs for students with moderate and severe disabilities will be addressed.

### Policy Issues Related to Service Delivery Standards

The following provides a description of the relation of each of the Program Standards to existing regulatory or statutory requirements. It also includes examples of indicators that may serve as evidence of compliance with the regulation.

#### Service Delivery Standards I - *Self-Determination*

Regulatory Basis: 707 KAR 1:180. Section 6. Notice. (6)

If the purpose of a transition planning meeting is the consideration of transition services, the notice shall also... indicate that the Local Education Agency (LEA) will invite the child or youth.

All students with disabilities are to have a statement of transition services in their IEP beginning at age 14 that takes into account the youth's preferences and interests (IDEA 1997).

*Indicators: Documentation of student instruction in self-advocacy to prepare them to take an active role in their transition planning and IEP meetings.*

#### Service Delivery Standards II - *The Family as a Full Partner*

Regulatory Basis: 707 KAR 1:180. Section 6 and 9.

Section 9. Representation. (1) The LEA shall assure that each child or youth is represented by a parent at all decision making points in the identification, evaluation, and placement process and relative to a free appropriate public education.

Section 6. Notice. The LEA shall provide written notice to parents within LEA established time lines and procedures each time the LEA proposes or refuses to initiate, continue, or change the identification, evaluation, placement, or provision of a free and appropriate public education.

Indicators: (Representation) There must be documentation that the district determined the student's representative no later than the point of referral. (Notice) Notice shall be provided at the point of referral, initial evaluation, initial placement, continued or change in placement and reevaluation.

#### Service Delivery Standards III - *Maximum Opportunities for Sustained Interactions with Non-Disabled Peers*

Regulatory Basis: 707 KAR 1:220. Section 5. Participation with Children and Youth Who are Not Disabled

- (1) Each LEA shall ensure, to the maximum extent appropriate, that children and youth with disabilities, including children and youth in public or private institutions or other care facilities, are educated with children and youth who are not disabled.
- (2) Each ARC shall ensure that the placement alternative and location determined for each child or youth with a disability:
  - (a) Is chronologically age-appropriate; and
  - (b) Provides an opportunity for interaction with children and youth who are not disabled

*Indicators: ARC conference summaries verify that when a student is served in separate settings, it is supported by evidence of full consideration of Least Restrictive Environment.*

Least Restrictive Environment: When an ARC committee is developing an IEP and determining the best place for those services to be provided, Kentucky Administrative Regulations (707 KAR 1:220) require that, “Regular education classes in a regular school shall be the first alternative considered by an ARC for implementing the IEP of a specific child or youth with an educational disability.” This is not to say all students with disabilities are to be served in regular classes as their primary placement, but it does require that the ARC document this as their first consideration. The regulation is equally clear in specifying that a rejection of services in the regular class cannot be based on the following:

- the category of disability
- availability of services
- facility and equipment utilization
- reimbursement or transportation costs
- special design or unique attributes of a facility
- lack of or better qualified staff
- availability of related services
- smaller pupil teacher ratio
- administrative convenience
- parent preference
- configuration of service delivery

In the Implementation Section, examples are provided of how students with moderate to severe disabilities can be appropriately accommodated in a general education setting. The ARC conference summary should document discussion of supplementing aided services that would facilitate consideration of services in the regular class. Clearly, there are some students which still may not be served primarily in regular class settings appropriately even with full examination of supports. It then becomes critical to determine what part of the student’s day can be devoted to IEP implementation outside of a special education setting.

*Service Delivery Standards IV - Range of Curricular Options from the General Education Curriculum and Life Domain Areas*

Regulatory Basis: 704 KAR 3:303; 704 KAR 3:305; 707 KAR 1:200.

For a student with educational disabilities, the Admissions and Release Committee (ARC) develops a student’s IEP targeting goals essential for reaching the Kentucky’s Learning Goals and Academic Expectations. In addition, the ARC identifies specially designed instruction including instructional

strategies, supports, services, and accommodations needed by the student to be involved in and to progress in the general education curriculum and to earn a diploma or a certificate of program completion. Planning an educational program for a student with disabilities requires careful planning and implementation by the ARC; alignment of the student's IEP with Kentucky's Learning Goals, Academic Expectations, and content and skills identified in the *Program of Studies*; and collaborative involvement of the general and special education teacher.

General education staff with certification in academic discipline areas and special education staff shall collaborate in the design and planning for the delivery of course content instruction within academic disciplines to assure alignment with Kentucky's learning goals, academic expectations, and content standards for each discipline. Each student's ARC or 504 committee shall address how and when this collaboration takes place to assure joint planning prior to and during implementation of a student IEP or 504 Plan.

*Indicators: Documentation in the ARC conference summary of the method by which general education staff collaborate with special education staff in the design and planning for how students will meet the Kentucky Learning Goals and Academic Expectations. Documentation should also support how students are to be involved in and progress in the general education curriculum (IDEA, 1997).*

Service Delivery Standards V - *Instruction within the context of real life activities*

Regulatory Basis: 707 KAR 1:230. Section 8. (3)(a)2.

A youth shall be eligible for a certificate program completion if an ARC determines that the severity of the disability prevents the youth from acquiring, maintaining, generalizing skills, and demonstrating performance without intensive, frequent, and individualized community-based instruction. Such youth require extensive direct instruction in multiple settings for application and transfer of skills and is unable to apply or use academic skills at a minimal competency level in natural settings when instructed solely or primarily through school-based instruction.

*Indicators: Documentation of frequent and systematic instruction in multiple school and non-school settings commensurate with the student's age and needs to be able to function successfully in their natural environments.*

Service Delivery Standards VI - *Utilizing materials, accommodations, and instructional techniques commensurate with student age that promote independence and self-determination*

Regulatory Basis: 707 KAR 1:230. Section 4. Program Services and Resources.

Each LEA shall make available all instructional materials, supplies, textbooks, technology, and equipment needed to implement the IEP of each child or youth with a disability. This includes instructional materials, supplies and equipment that: (a) Facilitate attainment of student outcomes and IEP goals and objectives; and b) Are appropriate for the chronological age of the child or youth.

*Indicators: Documentation of adequate and appropriate materials and instructional techniques being available to implement the IEP. Documentation in the ARC conference summary of consideration of any need for assistive technology to implement the IEP (IDEA, 1997).*

Service Delivery Standards VII - *Skills and supports necessary for successful transition to adult life*

Regulatory Basis: 707 KAR 1:220. Section 10. Transition. (4)(b)

The plan for transition shall address

(1) Projected post-school activities and long-range outcomes including:

- (a) Adult status;
- (b) Work (jobs and job training, including competitive, supported; sheltered; volunteer employment; work activity; and the military);
- (c) Post-secondary training and learning (continuing education, such as college, vocational technical school, literacy programs);
- (d) Home living (independent living with or without support, group home living, living with parents or relatives, day habitation, residential);
- (e) Community participation (accessing community resources independently, with or without support, or through group participation. Community resources include banking, shopping, public transportation, medical or health services, governmental agencies and services and voting.); and
- (f) Recreation and leisure activities (preferred free time activities with or without support).

*Indicators: Documentation of a completed transition plan beginning at age 14, and annually thereafter, with a statement of transition services in the IEP. The statement of transition services at age 14 must focus on the student's course of study and how it will help the child make a successful transition to his or her goals for life after secondary school. Agency linkages and responsibilities need to be specifically identified by the age of 16 in the transition plan.*

Service Delivery Standards VIII - *Transdisciplinary Team Approach*

Regulatory Basis: 707 KAR 1:210. Section 4. (4) Specially designed instruction and related services.  
(b)

Related services shall:

- 1. Relate directly to the specially designed instruction needed for the child or youth to achieve IEP objectives and directly affect acquisition of essential skills or information;
- 2. Be necessary for the child or youth to benefit from specially designed instruction;
- 3. Be described by the type and nature of each service; and
- 4. Not be needed solely for aesthetic or medical reasons

*Indicators: The IEP and or conference summary includes a description of specially designed instruction and related services that integrates therapeutic (e.g., OT/PT/SLP) services into the IEP in an educational context. Planning is evident for how therapists will collaborate with teachers and other staff in implementation of therapy services across daily routines in an educational context.*

## Certificate Program Implementation Guide for Secondary Age Students

A program of studies for students with disabilities receiving a certificate should incorporate eight service delivery standards. These standards are described in detail with illustrative examples throughout this document. Each section contains an explanation of the standard, other best practice exemplars and a toolbox. The toolbox provides resource information for more in-depth study.

Service Delivery Standard I:

*Students have opportunities for choice, decision-making, and receive instruction in self-advocacy.*

Program planning for students with disabilities in Kentucky’s Certificate Program occurs on two levels. First, individualized program planning that involves the student and family begins with the development of the Transition Plan and Individual Graduation Plan (IEP). The student, as early as age 13, should be prepared for participating in transition planning through classroom instruction. The actual planning should occur for students at age 14 and their families, immediately prior to the transition from middle level to the high school setting.

Service Delivery Indicator:

*Students transition from middle level to high school at the same chronological age as their nondisabled peers.*

Transition from middle level to high school is an excellent time to begin using person-centered planning approaches such as Lifestyle Planning (O’Brien, 1987), MAPS (Forest and Pearpoint, 1992), or Personal Futures Planning (Mount, 1987). These processes invite the participation of family, friends, and service providers to assist the student in creating a vision of the future. This vision of the future then can be used to identify appropriate learning targets. Person centered planning starts with three essential questions (O’Brien, 1987). In the following example, these three questions were addressed in Bob’s person-centered plan. Bob and his family, a couple of close friends, teachers, and vocational rehabilitation specialists convened after school with pizza to come up with this plan.

**Figure 1: Bob’s Person Centered Plan**

Desired Lifestyle	Necessary Supports	Who Will Provide Support
A home near Mom Job - making pizza Transportation Movies and music Friends and activities College classes A dog	Transportation Roommate Improve reading skills Improve work skills Improve communication skills Improve money skills	Carpool with neighbor or coworker Reading specialist Vocational rehabilitation Counselor/job coach Speech/language specialist Supported living



**Transition Plans:**

Transition services are defined as a “coordinated set of activities for a student that are designed within an outcome oriented process which promotes movement from school to post-school activities” (IDEA 1997). “Activities include post-secondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.” These transition services must be based upon student preferences or interests as well as individual needs” (IDEA 1997).

A transition plan must be developed for each student beginning at age 14 and reviewed annually, until the student exits school. A statement of transition services, developed at the age of 16, must be embedded into the IEP. This coordinated set of activities includes instruction, related services, community experiences, employment, post school adult living, functional vocational evaluation and daily living skills. Each of these areas must be considered as a part of the statement of transition services; therefore, the transition plan must be developed prior to the IEP. The transition plan establishes a destination, and the IEP serves as the road map to reach the destination.

**Service Delivery Indicator:**

*High quality transition planning and service provision are reflected through integration with non-disabled peers, functional curriculum, access to vocational education programs and services, community-based instruction, drop-out prevention programs, systematic transition planning, parent and student involvement, and interagency collaboration.*

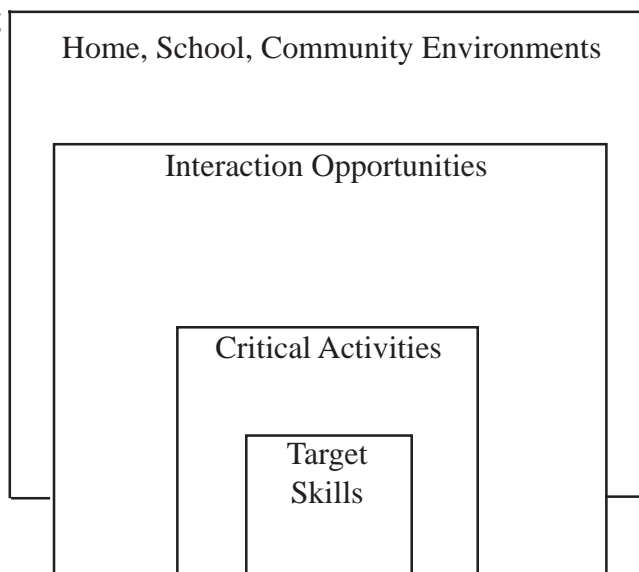
**Tool Box:**

*Kentucky Student Career/Transition Plan and Addendum for Students with Disabilities  
Student Transition Survey, Parent Transition Survey  
Planning for Life After High School: A Handbook for Information Resources for Families and Young Adults with Disabilities. Available from: KY Transition Collaborative, Human Development Institute-UAP, University of Kentucky, Lexington, KY 40506-0051.*

**IEP Planning**

The IEP forms the basis of the transition plan and is illustrated in Figure 2.

**Figure 2: IEP Planning**



As this figure illustrates, the IEP should include specific learning targets that focus on basic skill needs in the following seven areas: Communication Functioning, Social Competence, Physical Functioning, Cognitive Functioning, Vocational, Academic, and Recreation/Leisure. It should also include targets that specifically prioritize critical activities (e.g., tasks that must be performed for the student if he/she can not do it for him/herself) and interaction activities with non-disabled peers. Skills should be practiced within the context of real-life activities that come from three domain areas of vocational, personal management (domestic), recreation/leisure areas. Skills identified for the IEP should facilitate the student's ability to function in a variety of home, school, and community environments as well as address post-school outcomes (Hunt & Goetz, 1992).

Service Delivery Indicator:

*The student's IEP reflects the basic skills, critical activities, and social interactions necessary for the student to demonstrate the skills in home, school, and community environments consistent with the transition planning process.*

The sample IEP objective for Bob includes the basic skills of task completion and increasing job endurance. These skills will be practiced within the context of vocational activities at Pizza Hut, Movie Warehouse, and The Human Society. These vocational settings were based on the Desired Lifestyle (O'Brien, 1987) illustrated in Figure 1 on page 61. Interaction opportunities will be facilitated with co-workers at these community locations.

### **Figure 3: Sample IEP Objective for Bob**

Annual Goal: Bob will improve vocational skills in the areas of task completion and endurance on the job.

By May 2000, Bob will improve his rate of task completion using a task checklist, which includes five different tasks within a three-hour work block at three different community work-sites.

Pizza Hut Tasks: Refill salad bar items, wrap silverware, bus tables, fill napkin holders, check salt and pepper.

Movie Warehouse: Type name into the computer, check movies into the computer, place movies on the shelves, count movies, check for misplaced movies.

Humane Society: Fill food and water dishes, clean cages, brush animals, walk animals, play with animals.

Bob may also practice task completion at home by completing a chore checklist that includes setting and clearing the table, feeding a pet, and cataloging his home movie collection. Bob will work on social interaction skills simultaneously in these same settings. The IEP/Activity Matrix on the following page in Figure 4 shows the relationship between Bob's IEP goals and his daily schedule.

**Figure 4: IEP/Activity Matrix**

<b>Basic skills</b>	<b>Task Completion</b>	<b>Job Endurance</b>	<b>Reading</b>	<b>Communication</b>	<b>Money Skills</b>
Schedule					
English Class 8-9	X		X	X	
CBI Shopping 9-10	X		X	X	X
College Technology Class 10-11	X		X	X	
Work w/lunch 11-3	X	X	X	X	X

As figure 4 illustrates, Bob has multiple opportunities throughout the day to practice the basic skills on his IEP within the context of meaningful activities in home and community settings. Specific opportunities for social interactions also are considered.

Tool Box:

Giangreco, M.F., C. G. Cloninger, and Iverson. *COACH: Choosing Outcomes and Accommodations for Children*. Baltimore: Paul Brookes Publishing, 1997.

Forest, M. and J. Pearpoint, *MAPS: McGill Action Planning System*. Toronto: Inclusion Press, 1992.

O'Brien, J. and Lovett. *Lifestyle Planning*. Baltimore: Paul Brookes Publishing, 1992.

Mount, B. *Personal Futures Planning*. (1987).

Service Delivery Program Standard II: Family Partnerships

*Family is a full partner in the development of the transition plan and IEP.*

The transitions from middle level to high school and high school to life for students with moderate and severe disabilities and their families are important ones. High school age students must be involved in planning the transition from school to life and are the focus of the transition services. Families, however, are critical participants in this effort as well. The following strategies will encourage active family involvement throughout the student's high school experience (York and Vandercook, 1992):

- Families are invited to participate in the preplanning stages of the transition plan and IEP, prior to the final IEP conference. Using family focused interviews or person-centered approaches (e.g., MAPS, Personal Futures Planning, COACH) invite family participation.

- Family-centered practices are incorporated across the age-span. Student needs can be met more efficiently and effectively if family priorities are addressed. At the high school level families may need assistance in defining their roles as parents of a teenager or young adult.
- Family support services should be flexible, individualized, and designed to meet the diverse needs of families. Families are more likely to utilize services and supports if they are flexible and based on family priorities. Families of high school age students may need information and support in accessing adult services (e.g., Medicaid, SSI, Supported Living).
- Language is changed to support family-centered principles (e.g., using “family” instead of “parents”, “priorities and concerns” instead of “strengths and needs”). Use of terminology like “strengths and needs” assumes that the service provider (teacher in this case) can judge a family’s strengths. On the other hand, a focus on family priorities puts the student and family in the lead role. It increases the likelihood that the family will utilize the services and supports.
- Families are provided with the opportunities to express satisfaction/dissatisfaction with the process.

The example in Figure 5 shows how family-centered services can be provided at the high school level.

**Figure 5: Family Centered Services**

Ann’s family was really interested in developing a routine to teach Ann to shower and dress herself. These objectives were prioritized and incorporated into her IEP. Instead of teaching her to shower at school, the services were provided in her home using instructional assistant support provided to students in community-based instruction. This demonstrates the flexible use of services and is based on family priorities. In addition, teaching these skills at home increased the likelihood that Ann would generalize and reach independent performance.

Tool Box:

Farmer, B., and M. Wilson. *Family Resource Youth Service Center Guide, KY Systems Change Project*, Lexington: University of Kentucky Human Development Institute, 1995.

Service Delivery Program Standard III: Transdisciplinary Team Approach

*Needed related services (speech/language therapy, physical or occupational therapy, rehabilitation counseling, therapeutic recreation) are provided through a transdisciplinary team approach.*

Physical therapy, occupational therapy, and speech/language therapy are related services that are necessary for students with disabilities to benefit from their educational program. These services must be educationally relevant (i.e., the appropriateness and the extent of services must be related to the educational needs rather than medical needs of students with disabling conditions) (KDE, 1995). These services are most appropriately provided in the least restrictive environment with an emphasis on collaborative teaming models and a variety of instructional strategies.

A transdisciplinary approach involves a team commitment to teaching, learning, and working with others across traditional discipline boundaries to better serve individuals with disabilities (Rainforth, York and McDonald, 1992). Rick is a student requiring this type of team approach. The example in Figure 6 illustrates both related services and transition services.

**Figure 6: Rick and Related Services**

Rick, a 20 year old senior, has significant disabilities. He uses a wheelchair for mobility, a communication board with six messages, and textured schedule card for making choices about daily activities. He enjoys sounds, music, and like any other typical high school student, likes to hangout with friends. Friends help Rick in getting off the bus and putting his things in his locker. Together, Rick and Tori collect the morning attendance sheets. Rick practices holding the sheets on the tray. Then it's off to the Wellness Center swimming pool in town where he meets the physical therapist. Together, they work on improving Rick's range of motion. After swimming, they stop for a snack at McDonalds. The speech/language pathologist meets them at McDonalds. She is teaching Rick how to use an augmentative communication device. Then he stops at the store to pick up a couple of grocery items for Mom. Rick uses an envelope system to budget his money for the groceries. From the grocery store, Rick goes to the college cafeteria where he works "swiping meal cards" through a machine with a partner. The occupational therapist meets them there to help determine the correct positioning and adaptations that might be needed. Rick will receive an assistive technology evaluation next week. The Department for the Blind is coordinating that effort with Vocational Rehabilitation. Rick then returns to school for his favorite class, choir. He uses an adapted switch to turn on taped music for their up-coming choir performance of "Oklahoma." Rick loves this class. He will stay for choir rehearsal after school this afternoon. Tonight, Rick's Personal Futures Planning Team is meeting to develop a Supported Living Proposal so he can get his own apartment.

Rainforth et al.(1992) suggest the following checklist (see Table 1) for discussing educational relevance for related services provided to students with moderate and severe disabilities in educational settings.

**Table 1: Checklist for discussion of educational relevance** (Rainforth et al., 1992, p. 33)

_____	The need for collaboration with related services is determined by that persons' contribution to student achievement of priority educational goals.
_____	Related services personnel assess student capabilities in the context of the educational program, including typical school, home, community environments, routines, and activities determined to be priorities for each student.
_____	Related services personnel work directly with students within the context of the educational program.
_____	Related services personnel work with teachers and other team members to identify motor and communication priorities within the educational program.
_____	Objectives related to improving motor and communication abilities are embedded throughout the IEP, as opposed to being separate components.
_____	Related service personnel and teachers work together to design instructional methods for teaching students to participate with a greater degree of success.
_____	Therapists teach each other to use the instructional methods they have found effective in facilitating improved motor, communication, or other competencies.
_____	Related services personnel work on an ongoing basis with students and other team members to evaluate student progress in educational activities.

Tool Box:

Kentucky Department of Education. *Guidelines for the Delivery of Occupation and Physical Therapy Services in Educational Settings*, Frankfort, Kentucky: Author, 1995.

Smith, P. *Integrating Related Services. KY Systems Change Project*, Lexington: University of Kentucky Human Development Institute, 1992.

Rainforth, B., J. York, and C. Macdonald, *Collaborative Teams for Students with Severe Disabilities*. Baltimore: Paul H. Brooks Publishing, 1992.

Service Delivery Program Standard IV: Assessment of Current Levels of Performance  
*Targeted skills from the student's IEP should be embedded into real-life activities with natural performance demands. These can occur in general education classes or the community.*

Assessing a student's current level of performance can be accomplished with a variety of assessment strategies. Performance-based and authentic assessment procedures produce the most valuable information for developing instructional programs. Functional assessment also known as ecological assessment considers the real-life demands of a particular task or objective (Falvey, Brown, Lyon, Baumgart, and Shroeder, 1980; Gaylord-Ross and Browder, 1991; McDonnell, Wilcox, and Hardman, 1991). The team observes the student in numerous setting over a period of days or weeks to determine the student's learning style. Gaylord-Ross and Browder (1991) outline functional assessments that

- focuses on practical independent living skills that enable the person to survive and succeed in the real world,
- has an ecological emphasis that looks at individual functioning in the student's current and future environments,
- examines the process of learning and performance,
- suggests teaching techniques that may be successful, and
- specifies ongoing monitoring procedures that can evaluate progress.

Similarly, McDonnell, Wilcox, and Hardman (1991) suggest

“Skills are never taught in isolation from actual performance demands. Additionally, the individual does not ‘get ready’ to participate in the community through a sequence of readiness stages as in the developmental model, but learns and uses skills in the setting where the behavior is expected to occur (p.23).”

Ecological inventories are surveys or observations that are used to identify skills within current and future settings in which the student functions (Brown et al., 1979). The steps for conducting an ecological inventory include

- divide the curriculum into subjects,
- delineate the environments that are available to peers without disabilities,
- delineate the sub-environments within each environment,
- delineate the activities within each sub-environment, and
- delineate the specific skills expected or required in order to participate in each activity.

**Figure 7: Ecological Inventory for Work Place Breakroom**

Curriculum Domain:	Vocational
Environment:	Break room at work
Sub-environment:	Vending Machine
Activity:	<i>Locating Vending Machine</i>
Skills:	Enter the break room door Scan for vending machine Go to vending machine
Activity:	<i>Purchase soft drink</i>
Skills:	Select correct change Put change in slot Scan selections Push selection Wait for can to fall Pick up soft drink

Once the ecological inventory has been completed, a student repertoire inventory is the next step. A student repertoire inventory measures a student’s existing performance against the skills identified in the ecological inventory as performed by peers without disabilities (Falvey, Brown, Lyon, Baumgart, and Schroeder, 1980). A student repertoire inventory has four steps including:

- Delineating the skills performed by peers without disabilities for a given activity (step 5 of the ecological inventory).
- Observe and record the student’s performance in these skill areas.
- Conduct a discrepancy analysis of the student’s performance against the performance of peers without disabilities.

If the student is unable to perform any of the skills, utilize one of the following options: teaching the student the skill, developing an adaptation and teach the student to use it, or teaching the student to perform a different or related skill.

Figure 8 illustrates a student repertoire inventory for Bob on a break at work.



### Figure 8: Student Repertoire Inventory

Name: Bob  
 Curriculum Domain: Vocational  
 Environment: Break Room  
 Subenvironment: Vending machine  
 Activities: 1) Locate vending machine  
 2) Purchase soft drink

Date	Inventory for Student without Disabilities	Student Inventory	Discrepancy Analysis	Adaptation Hypothesis	Adaptation
4/3	1) Locate the Break room A. Enter the Breakroom door	-	Looks around	Pair with coworker	Co-worker teaching
	B) Scan for the soft drink machine	+			
	C) Go to the machine	+			
	2) Purchase soft drink				
	A. Find correct change	-	Puts all change in machine	Coin matching card Use \$1.00	Teach correct change Count by fives
	B. Put in slot	+			
	C. Scans selections	-	Pushes first button	Logo card	Teach logo
	D. Push selection	+			
	E. Wait for selection	+			
	F. Pick up soft drink	+			
	G. Check for change	-	Walks away	Change task order	Peer reminder

Scoring Key: (+) = Correct Response (-) = Incorrect Response

This student repertoire inventory indicates the skills that Bob needs to learn in order to purchase a coke in the employee break room. Bob needs to be taught how to count change and/or give him an adaptation for coin selection as in using a \$1.00 bill. To simplify the task of coin counting, he will be taught to count by fives because change for machines usually comes in denominations of five. He needs to be taught to scan the selections to make sure he gets the soft drink he prefers. A coworker could support Bob in locating the break room. The sequence of the task analysis could be changed so that Bob gets his change before he picks up the soft drink.

Ecological Inventories also may be used to assess the student's participation in general education classroom activities as well. The example in the following figure illustrates an ecological inventory/classroom activity analysis for a high school student.

## Figure 9: Classroom Activity Analysis

Student: Bob

Steps	Activities Cues	Expected Responses	Discrepancies	Possible Adaptations
Writing personal narrative	Teaching direction			
Cooperative learning groups	Other student placement	Work in groups chatter noise level	Could not find a group	Identify a peer partner
Ask questions of group members	Sample interview questions	Ask questions of group members	Did not know what to ask	Simplify interview questions. Reduce the number of questions
Take notes	Paper and pencil	Jot down notes	Did not make notes	Make a note guide
Report out	Others speaking	Answer questions	Did not understand questions	Identify three functional questions and rehearse response

Tool Box:

Ford, A., R. Schnoor, L. Meyer, L. Davern, J. Black, and P. Dempsey. *The Syracuse Community Referenced Curriculum Guide*. Baltimore: Paul H. Brookes Publishing, 1989.

Wilcox B. and G.T. Belamy *The Activities Catalog: An Alternative Curriculum for Children and Youth with Severe Disabilities*. Baltimore: Paul H. Brookes Publishing, 1987.

Falvey, M. *Inclusive and Heterogeneous Schooling*. Baltimore: Paul H. Bookes Publishing, 1995.

Special Program Standard V: Friendships And Social Relationships

*Students should have maximum opportunities for positive, sustained interactions with non-disabled peers, with the goal of developing mutual friendships.*

Friendships provide the context for displaying a variety of social skills (Falvey, 1995). A smile, laugh, or touch displays a positive interaction style. Communication skills are emphasized using verbal and non-verbal responses. Friendships are reinforcing and provide a natural context for increasing appropriate social skills. Listening, sharing belongings and feelings, sharing likes and dislikes, trustworthiness and loyalty are all practiced within the context of naturally occurring friendships. Other social skills that may be impacted by friendships include appropriate dress, grooming, touching, voice level, discriminating between strangers and acquaintances, rights, and privacy (Falvey, 1995). The concept of natural supports is based on the understanding that relying on typical people and environments enhances the potential for inclusion more effectively than specialized services and personnel (Nisbet, 1992).

These opportunities may be found within the context of cooperative learning in general education classes, school sponsored extracurricular activities, structured peer-tutoring, or natural supports in the work settings. These relationships can only occur if students with and without disabilities share common interests and age-appropriate activities that result in time spent together.

Bob, in the Figure 9 Classroom Activity Analysis, has many opportunities to develop friendships with nondisabled peers. In English class, he works in a cooperative group in which group members assist each other in asking questions about their personal narrative. Bob asks his group members about their jobs and hobbies. From these conversations, students develop personal narratives. Bob is working on providing accurate personal information upon request (e.g., name, birthday, age).

During the grocery shopping outing, Bob and peer tutors work on budgeting and banking skills. The peer tutor has developed a computer spreadsheet to assist Bob in budgeting his money for weekly activities. Alison, the peer tutor, is interested in banking as a possible career option, so this experience is relevant for her future as well.

Nathan is Bob's workout partner at his college weight training course. They work on the same equipment, but their programs are individualized. They check and encourage each other. Working out with a partner is helpful to both. In the technology class, Bob again works within a cooperative group. These college students are developing a video production. Bob plays an actor in the video production.

The manager at Community Video is pleased that Bob gets along well with coworkers Julie and Jed. Usually, Julie or Jed will share lunch with Bob. Jed often gives Bob a ride home after work. Bob's work extends approximately one hour after school. This helps Bob's mom who would have to pick him up. Bob budgets money to pay Jed for gas. Sometimes they stop at the video arcade or the driving range to hit a few golf balls after work.

As Falvey (1995) points out, friendships are highly complex and unique and do not lend themselves to task analysis or traditional instructional approaches. Falvey et.al (1995) recommended three instructional approaches to facilitate the development of appropriate behaviors that lead to friendships by both students with and without disabilities. These three instructional approaches are shaping, modeling, and coaching.

Shaping – Shaping is the systematic reinforcement of a desired behavior. The desired behavior is initiating a social interaction. The teacher or the peer will reinforce the student for moving toward the other person. Gradually, more complex behaviors are required in order to receive the reinforcement.

Modeling – Modeling refers to demonstrating a behavior for the student to imitate. Teachers or peers can serve as models for appropriate social behaviors.

Coaching – Coaching is a good way to practice social skills in a safe environment. Coaching involves direct instruction, opportunities to practice, and a review session following the interaction (Falvey, 1995).

Tool Box:

Forest, M. and J. Pearpoint. *Circle of Friends Activity*. Toronto: Inclusion Press, 1992.

M. Falvey. “Developing and Fostering Friendships.” *Inclusive and Heterogeneous Schooling*. Baltimore: Paul H. Brookes Publishing, 1995.

Kleinert, H. K. *Kentucky Classrooms: Everyone’s Welcome*. Lexington: University of Kentucky Human Development Institute, 1997.

Kleinert, H., S. Gultinan, J. Farmer-Kearns, A. Longwill. *High School Peer Tutoring Manual*. Lexington: University of Kentucky Human Development Institute, 1996.

Service Delivery Program Standard VI: Curriculum Options

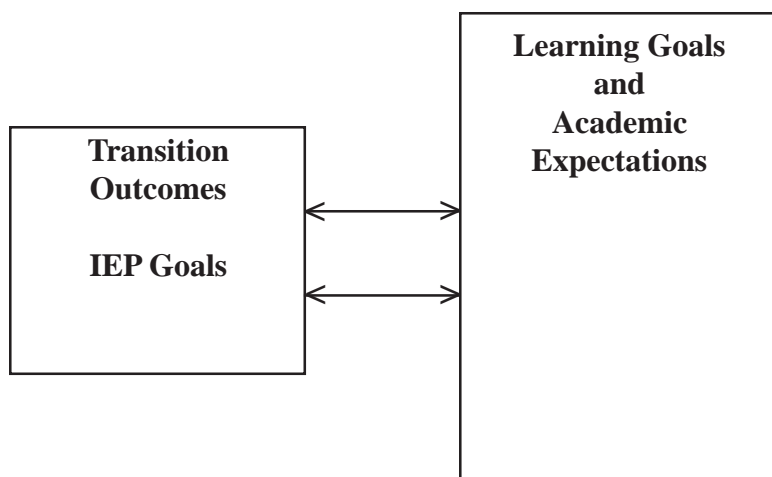
*A student’s program should include a range of curricular options in the general education curriculum and life domain areas.*

Service Delivery Program Standard VII: Transition Planning

*Instruction should focus on those skills and supports necessary for successful transition to adult life in the community.*

Curriculum for students in the Certificate Program has traditionally come from the identification of activities from three life domain areas: vocational, recreation-leisure, and domestic. However, the Kentucky Education Reform Act (1990) mandates that all students are required to evidence Kentucky’s Academic Expectations. While students with disabilities in the Certificate Program are not required to demonstrate the academic expectations with the same performance indicators, **they are required to evidence the academic expectations**. In addition, recognition that students with disabilities in the Certificate Program may have special interests or abilities in a variety of subject areas has resulted in encouraging these students to develop those interests and abilities. The Alternate Portfolio Assessment includes 28 of the academic expectations for all Kentucky students. Designation of a Certificate Program does not limit the student’s participation in any general education curriculum course. In fact, supports must be provided so that the student may participate successfully in that course work. Figure 10 illustrates the relationship of transition and IEP goals and objectives to the curriculum and academic expectations.

**Figure 10: Relationship of Transition and IEP Outcomes to Academic Expectations**



Example: Bob wants to develop skills in the vocational area of food service (i.e. make pizza). This directly corresponds to the “Post Secondary Opportunities” academic expectation. Students in the Certificate Program may have individual schedules that reflect a range of instructional activities representing a balance between general education classroom activities and domain-based activities with an emphasis on instruction that occurs in real-life settings. Vocational experiences are particularly important at the high school level.

Students like Bob who are 18 or older should spend much more time in community settings with more active involvement from the transition team. Bob is taking a college class and working that extends to after school. Educational outcomes for high school students with moderate and severe disabilities should focus on exploring employment, leisure and living options available to nondisabled adults as well as establishing performance of age-appropriate leisure and personal management activities. By age 18, students should be establishing employment and living options as well as performing daily living routines (McDonnell, Hardman, McDonnell, Kiefer-O’Donnell, 1995). The following example illustrates a daily schedule for Patricia who is a freshman.

## Figure 11: Curriculum

### **Patricia, age 14, Freshman**

Patricia is interested in child care vocational experiences. To assist her in developing skills in this area, she is taking a child development class and volunteering in the school nursery. In addition, she works five hours per week in a local day care center and volunteers in the church nursery on Sunday. Her special education teacher met with the general education teacher to determine appropriate targets from the general education curriculum in child development. In English class, she is organizing a list of literature for young children and practices reading aloud to the children at the day care center. Using a spreadsheet computer application, Patricia is learning to budget her pay from the day care center for a special purchase. For her biology project, she chose to study places where germs collect in the day care center. In social studies class, Patricia will develop a chart of her “rights” as a citizen under ADA and IDEA.

This schedule is based on Patricia’s preferences and amounts of time she will be spending in community-based instruction. As Patricia approaches age 21, she will be spending most of her time in community settings and age-appropriate educational settings such as adult education or community college settings. She will be establishing and practicing daily living routines from the vocational, personal management, and leisure domains.

Four general outcomes are important as students with moderate and severe disabilities exit school programs (McDonnell et al., 1995). These include

- Establishing a network of friends and social relationships,
- Developing skills in using community resources,
- Securing a paid job, and
- Establishing independent autonomy and make choices.

The example in Figure 2 illustrates these outcomes for Patricia.

**Figure 12: Classroom and Community Balance for Patricia**

<u>Patricia, age 14</u>	<u>Patricia, age 18</u>	<u>Patricia, age 21</u>
School Nursery (Before school MW)	School Nursery (Before school MW)	Home Training - (meal preparation, house keeping) 2 hours daily
Child Development Class	English - Resume	Dolly's Day Care (3 hours)
Math (CBI 3 times weekly)	Home Economics- Budgeting	CBI - Banking, shopping, workout etc. (1 hour daily)
English	CBI - Banking, Shopping, Community Services, Joe's Gym 2 hours daily	College Class (2 hours 3 times)
Science		Adult Education Class - Computers (2 hours 2 times)
Social Studies		
Dolly's Day Care Center (2 times weekly 2 - 4) 1 hour after school	Dolly's Day Care (daily 3 hours (1 hour after school)	
5 hours Vocational CBI 3 hours CBI	10 hours Vocational CBI 10 hours CBI Other	10 Hours Home Training 15 Hours Vocational CBI 5 Hours Other CBI 10 Hours Classes
<b>8 hours Total CBI</b>	<b>20 hours Total CBI</b>	<b>40 hours Total CBI</b>

In this example, the amount of time Patricia spends in community settings increases significantly from her freshman year at age 14 to age 21. At age 21, school services look very much like the first day of real life.

Service Delivery Indicator:

Students 14-16: community based vocational training typically occurs a **minimum of 5 hours** per week; in addition to other CBI activities.

Students 17-21: community-based vocational training typically occurs a **minimum of 10 hours** per week.

Tool Box:

Dyer, L. and J. Kearns. *TASKS: Teaching All Students in Kentucky's Classrooms*. Lexington: University of Kentucky Human Development Institute, 1998.

The Community-Based Work Transition Program. University of Kentucky Human Development Institute.

School-to-Work Program, University of Kentucky, Human Development Institute.

Jorgensen, C. *Restructuring High Schools to Include All Students*. Baltimore: Paul H. Brookes Publishing, 1998.

### Service Delivery Program Standard VIII: Instruction

*The student's program should provide materials, accommodations, instructional techniques, including assistive technology that are commensurate with the student's chronological age.*

While students with disabilities are expected to evidence the academic expectations, how they accomplish them is of primary importance. Falvey (1995) suggests that systematic and organized learning experiences are essential to learning in any curriculum. Students learn best when the following conditions are met:

- Safe learning environment,
- Students are actively involved and engaged,
- Students are teaching each other,
- Students are learning through their preferred modality,
- Students are learning at an appropriate rate, and
- Goals are individualized.

#### Service Delivery Indicator:

*Individualized instruction, collaborative teaching, motivation, choices, and appropriate selection of reinforcement are all employed that contribute to enhance student performance.*

Individualized instruction here refers to specific lesson accommodation and not necessarily one-to-one instruction. Lessons should hinge together from one day to the next so that the student can understand and use the learning, as well as apply learning to real life situations. Lesson activities and materials must be age appropriate and take place in natural learning environments. Students should be taught to make choices within the context of all instructional activities. The example for Patricia in the previous section illustrates how Patricia's program includes variety of contexts for instruction. Instruction takes place in a variety of natural environments and is activity-based. She receives community-based vocational training at the day care center. In math, she uses computer-assisted instruction. In biology, she works in a cooperative-learning experiment group. A whole language approach is being used to develop reading skills in English class. In the child development class, simulation, role-play, and demonstration serves as the context for instruction.

Once the context for instructional activities has been designed, Patricia's teachers will then need to make some decisions regarding appropriate instructional approaches. They should consider the following questions in Figure 3.



**Figure 3: Making Instructional Decisions**

<p>1) What are the learning strengths of the student? How does he/she learn best?</p> <p>Patricia responds well to verbal directions and modeling. Visual models are particularly helpful. Modeling is needed for complex motor skills. She responds well to coaching for social interactions.</p>
<p>3) What is the type of skill?</p> <p>4) Can the student perform the skill with the same instruction as other students?</p> <p>5) Will adaptations facilitate learning? What types?</p> <p>6) Who will need to be involved in teaching the skill?</p> <p>7) Which type of instruction is least stigmatizing?</p> <p>8) Which type of instruction promotes self-determination and choice?</p> <p>9) Which type of instruction is least intrusive, yet still effective and efficient?</p> <p>10) Which type of instruction will fit best into the general education classes and community?</p>

Patricia may very well need some specialized instruction within these instructional contexts. As the decision-making process indicates, a least-to-most intrusive instructional hierarchy should be considered. The following chart considers these questions as they relate to each instructional activity. The worksheet on the following page is an analysis of each instructional activity in Patricia’s day. It includes the activity, student objectives, instructional strategies, possible accommodations, and supports required.

**Figure 14: Classroom Activity Analysis Worksheet**

Student: Patricia

Activity	Student Objectives	Instructional Strategies	Adaptations	Support
Child development Class Child care notebook	Organizing information	Verbal directions	Use three ring-binder with colored tabs	Peer support
School nursery Story time Playing games	Improve reading skills Improve communication skills	Preview book ahead of time. Time delay for new words Modeling Books on tape	Practice reading into tape recorder	None Vocational trainer Speech
English Class Cooperative groups Class project	Organizing information Increase sight word reading list	Verbal and modeling Partner reading Books on tape	Card file with book comprehension questions organized by topic	Peer partner

Activity	Student Objectives	Instructional Strategies	Adaptations	Support
Math class Spread sheet for budget	Organizing information Communication	Verbal and model	Computer program Grocery list Money envelopes	Teacher Peer partner
Science Making bacteria cultures	Organizing Materials Working in a group Improving communication	Verbal and model	Written directions with pictures for collecting specimens.	Cooperative learning

In addition to determining instructional strategies, on-going progress data should be collected on a twice-weekly basis. The following data collection sheet provides a multi-purpose data collection tool using an embedded basic skill approach.

**Figure 15: Data Collection Tool**

Objective	Task Request	Data					Total
Activate switch	Blender						
	Slide projector						
	Hot air popcorn						
Grasp and hold	Attendance sheets						
	Meal cards						
Recording Key:	(+) = Correct (-) = Incorrect FP = Full Physical PP = Partial Physical M = Model I = Independent						

Actual instruction for the student should follow a systematic process. Systematic instructional procedures insure consistent, near errorless learning that is necessary for students with severe disabilities to acquire and demonstrate performance.

A sample instructional program can be found on the following page. Systematic instructional programs begin with preparing the student for instruction. For community based instruction, the planning can be as important as the lesson itself. In this part of the lesson, the student uses his/her individual student schedule to identify the next activity for the day. Ann, a student with severe disabilities, receives a verbal prompt by the teacher to check her schedule. The next picture on her schedule is grocery shopping. She will need to get the materials for grocery shopping: a picture list of three items, her grocery shopping budget envelope, her purse, and her jacket. The grocery items come from a list of products used by her family, the budget envelope contains \$1.00 bills and was completed in an earlier activity. Next, the teacher will review the learning target with Ann. The teacher uses the progress chart from last time. For this lesson, Ann is only working on matching the items on her list. Last time, Ann found two of the three items, this time she is working to find all three items. Ann and the teacher review the grocery items she must find using the pictures on her list.

At the store, Ann and a peer tutor scan the aisles for the three items on her list. The partner determines the prompts Ann needs to locate the items and records the prompts on the data sheet. Once all the items are found, they proceed to the checkout counter. Ann independently uses her envelope to pay the cashier.

Upon returning to school, the teacher reviews the lesson with Ann and the peer tutor. This time Ann found all the items independently. They fill in the progress graph and lesson review sheet. Ann uses a stamp to answer the questions on the lesson review sheet. She adds these review sheets and chart to her portfolio folder. This folder also includes all of the pictures that Ann uses in her schedule and the product items she purchases on a regular basis. Ann has a portfolio folder for each of basic skills that she is working on this year.

**Tool Box:**

Kentucky Department of Education. *Transformations: Kentucky's Curriculum Framework*. Frankfort, Kentucky: Author, 1995.

Dyer, L. and J.F. Kearns. *TASKS: Teaching All Students in Kentucky's Schools*, Lexington: University of Kentucky Human Development Institute, 1998.

Sample Instructional Program Design

Environment: Foodtown  
Activity: Grocery Shopping  
Student: Ann  
Teacher: Jacqui  
Dates:  
Transportation: School Bus  
Materials: Budgeting Notebook, Picture Cards

Procedures: Preparing and Planning the shopping trip

- 1) Ann checks her picture schedule, she finds a picture of Foodtown.
- 2) Wait 10 seconds to see if Ann initiates getting the materials for her shopping trip.
- 3) If yes, then praise. If no, then provide verbal reminder and point to planning sheet "What do you need for shopping?" The planning sheet has pictures of grocery list, money envelope, and jacket.
- 4) Review progress chart from last time. Ann will find three items by herself this time, matching the picture to the item.

Locating the items.

- 1) Ann will get a shopping cart, put her purse in the seat, and get her list.
- 2) Ann will scan the list and scan the aisle.
- 3) Ann will locate item and place it in the basket.
- 4) Proceed to the next aisle.
- 5) Signal finished when all items are found.

A system of least prompts instructional procedure will be used. The teacher will wait five to seven seconds for Ann to initiate the step. If she does not initiate within five to seven seconds, the teacher will provide a verbal prompt and wait five seconds before providing the next level of prompt.

Objective	Task Request	Data					Total
Scan aisle, list	Item #1						
	Item #2						
	Item #3						
Organize materials	Shopping cart						
Sign Finished	Finished						
Recording Key:	(+) = Correct (-) = Incorrect FP = Full Physical PP = Partial Physical M = Model V = Verbal I = Independent						

Ending the Lesson

- 1) Put away materials.
- 2) Review the data card and the lesson asking these questions.
  - You found \_\_\_\_\_ items at the store.
  - Next time you need to work on \_\_\_\_\_.
- 3) Color in chart for number correct.

## References

- Brown, L., M. Branston, S. Hamre-Nietupski, I. Pumpian, N. Certo, and L. Gruenwald. "A Strategy for Developing Chronologically Age Appropriate and Functional Curricular Content for Severely Handicapped Adolescents and Young Adults." *Journal of Special Education* 13(1) (1979): 81-90.
- Dyer, L., and J. F. Kearns. *TASKS: Teaching All Students in KY Schools*. Lexington: University of Kentucky, Human Development Institute, 1998.
- Falvey, M. *Inclusive and Heterogeneous Schooling: Assessment, Curriculum and Instruction*. Baltimore: Paul Brookes Publishing Co., 1995.
- Falvey, M., L. Brown, S. Lyon, D. Baumgart, and J. Schroeder. Strategies for Using Cues and Correction Procedures. In *Methods of Instruction for Severely Handicapped Students*. Eds. W. Sailor, B. Wilcox, and L. Brown. Baltimore: Paul H. Brookes Publishing Co., 1980. 109-133.
- Forest, M., and J. Pearpoint. "Commonsense Tools: MAPS and Circles." In *The Inclusion Papers: Strategies to Make Inclusion Work*. Eds. J. Pearpoint, M. Forest, and J. Snow. Toronto: Inclusion Press, 1992.
- Giangreco, M.F., C. G. Cloninger, and Iverson. *COACH: Choosing Outcomes and Accommodations for Children*. Baltimore: Paul Brookes Publishing Company, 1997.
- Gaylord-Ross, R., and D. Browder. "Functional Assessment: Dynamic and Domain Properties." In *Critical Issues in the Lives of Persons with Severe Disabilities*. Eds. L.H. Meyer, C.A. Peck, and L. Brown. Baltimore: Paul Brookes, 1991. 45-66.
- Jorgensen, C. *Restructuring High Schools for All Students*. Baltimore: Paul Brookes Publishing Co., 1998.
- Individuals with Disabilities Education Act (IDEA) Amendments of 1997
- Kentucky Department of Education. *Transformations: Kentucky's Curriculum Framework, Vols. 1 and 2*. Frankfort, KY: Author, 1995.
- Kentucky Department of Education. *Guidelines for the Delivery of Occupation and Physical Therapy Services in Educational Settings*. Frankfort, KY: Author, 1995.
- Kleinert, H. K. *KY Classrooms: Everyone's Welcome*. Lexington: University of Kentucky Human Development Institute, 1997.
- Kleinert, H., S. Gultinan, J. Farmer-Kearns, and A. Longwill. *High School Peer Tutoring Manual*. Lexington: University of Kentucky Human Development Institute, 1996.
- Mount, B. *Making Futures Happen: A manual for Facilitators of Personal Futures Planning*. St. Paul: Governor's Council on Developmental Disabilities, 1989.

## References

- McDonnell, J., M. Hardman, A. McDonnell, and R. Kiefer-O'Donnell. *An Introduction to Persons with Severe Disabilities*. Boston: Allyn & Bacon, 1995.
- McDonnell, J., B. Wilcox, and M. Hardman. *Secondary Programs for Students with Developmental Disabilities*. Boston: Allyn & Bacon, 1991.
- Nisbet, J. *Natural Supports in School, At Work and In the Community for People With Severe Disabilities*. Baltimore: Paul H. Brookes, 1992.
- O'Brien, J. "A Guide to Lifestyle Planning." In *A Comprehensive Guide to the Activities Catalog*. Eds. B. Wilcox and T. Bellamy. Baltimore: Paul H. Brookes, 1987.
- Rainforth, B., J. York, and C. Macdonald. *Collaborative Teams for Students with Severe Disabilities*. Baltimore: Paul Brookes, 1992.
- Smith, P. *Integrating Related Services: KY Systems Change Project*. Lexington: University of Kentucky Human Development Institute, 1992.
- York, J., and T. Vandercook. *Systems Change From Collaborative Planning. What's Working: Minnesota Inclusive Education Technical Assistance Program*. Minneapolis: Institute on Community Integration, University of Minnesota, 1992.

## **Counselors' Roles with Exceptional Children**

The school counselor's role with exceptional children is to assist learners and school staff with reducing educational, physical, and mental health barriers to learning. Counselors can

- provide individual and group counseling sessions to improve social competencies in the school and community settings.
- assist the school staff in structuring a service delivery system.
- support the collaborative efforts as defined in students' Individual Education Programs, 504 Plans, Individual Transition Plans, and Gifted Education programs/opportunities.
- provide support and curriculum alternatives to parents/students.
- assist students with connecting activities which provide a smooth transition from school to work.

## Designing Your Own Courses

This section is for those who have already identified a need to prepare a course for students. That need focuses on offering specific content to a particular group of students. This section of the manual helps identify factors to be considered as instruction is planned.

Designing a course begins with answering a basic question:

*What do I want my students to know and be able to do when they complete this course?*

Focusing on the end goals of the course will determine what content will be presented and how the class will be structured. Begin with the easiest part of the question: characterize the intended student audience.

- For what grade level will the content be appropriate?
- What are the students' particular skills or interests? Are they at the introductory level or at a more advanced level?
- What is the best approach for these students? Will the best design be traditional, thematic, interdisciplinary, applied, integrated, or functional? For example, two courses may offer identical content and yet provide entirely different ways of presenting material. A health and fitness course, for instance, could be taught as theories of healthy living or as activity-based program designed to improve students' general health.

The next step is to determine specific content that will be taught. If you are beginning with a course or credit defined in the *Program of Studies*, the content is outlined. The next step will be to identify instructional methods and any additional content you wish to add. However, if you are designing a new class, such as an elective in speech communication or horticulture, you will need to consider steps to identify content for the course.

### Identifying Content

Begin your search for content by examining all available standards. National standards may exist for your content area. National standards vary greatly in their specificity, but they all provide guidelines about key concepts for students in academic areas.

Another set of standards to examine closely is Kentucky's Learning Goals and Academic Expectations. These define what Kentucky students should know and be able to do by the time they exit high school. Each course should be founded on an identified set of academic expectations, but should also address learning goals three through six which identify how students get along with each other, think, solve problems, and relate to the real world.

There are a number of additional standards that may offer insight into content you would like to include. Other state standards may provide ideas. Professional organizations both state and national offer suggestions. For example, the Environmental Council has recommendations for content of environmental studies classes.



***Think: What are my expectations for students in this course?***

While required courses all include *Core Content for Assessment*, many electives will also address selected parts of those requirements. The core content document specifies the subject matter on which students will be tested for statewide assessment. Covering that content is not just the responsibility of teachers in those accountability years, nor the domain of only certain classes. English teachers, for example, are not the only teachers of reading. A course in business education will probably include instruction in mathematics, writing, reading, and economics as well as the obvious connection with vocational studies. Students and teachers should be able to clearly identify how each class supports the acquisition of skills and knowledge necessary for school and student accountability.

***Think: What Core Content for Assessment can this class support?***

Once you have identified these broad goals for this course, you must begin to refine the specific content. Begin by listing categories or content strands for your course. These strands, which should be linked to academic expectations, provide the basic road map for organizing the content and instruction. A mathematics course, for instance, may address geometry, problem-solving, and computation. A journalism class may include areas of history, writing, layout and design, photography, and ethics. The number of strands should provide both a sufficient coverage of content and a realistic expectation of the time constraints of the course. A course that lasts for only a few weeks cannot cover the range of material of a full year course.

***Ask yourself: What are the areas my students need to know to complete this course?***

Now that strands are identified, specific content within each strand must be outlined. This content statement will be written as objectives: Students will do something. All should contain strong, higher-level verbs. Analyze, solve, write, and create are more definitive than learn or know. For example, “Students will write and solve equations” is more specific than, “Students will learn to do equations.” Make statements broad enough so that they are not single-day lessons. A content statement may be covered repeatedly through the year or may be addressed only once, but should contain significant content and process for students.

***Keep asking: What will students DO with this fact or set of facts?***

Once you have completed this process, you will have developed the content chart for your course. This lays the foundation of **what** will be taught, now you must consider **how** you will teach this content. That is the focus of a course model.

### Developing Course Models

A course model is simply that, a model of how content for the course can be structured. It configures content into logical groupings with sample activities. Course models also consider concerns such as multicultural exposure, incorporation of technology, and extensions for diverse learners.

1) As you design the model, return to the idea of what type of course you want to present. Is this a hands-on approach? Will it be based on inquiry? Creating an overview statement that describes the conceptual background of the course will help you define your **instructional approach**.

2) Next choose the **guiding questions** for the course. These four to eight questions are the broad goals or organizers for students during the course. They should not be able to be answered with a yes or no or even with a simple set of facts and they should be written in student friendly language. Guiding questions should be personal to the student and often use the word, I. Since they guide the exploration and learning of students, very often they are phrased as “How can I...” For example, “How can I take real-world problems and solve them systematically?” “How can I use the inquiry process to help me learn about my world and share what I learn with others?” Although writing guiding questions is not an easy task, it is a critical one. Since these questions direct the instruction for the course, they must be clearly stated and appropriate for both the goals and the content for the course.

3) Once you have completed the guiding questions, you will design **activities** to help students answer those questions. Activities should

- be broad enough to cover more than a day’s instruction;
- relate to guiding questions;
- connect directly to specified content;
- tie to academic expectation(s);
- be “active” or have students actively participate in learning;
- answer “why” students are doing this activity;
- include products (e.g., performances, writings, paintings, lab reports, speech) that could be used for assessment;
- encourage use of technology and other tools; and
- be adaptable to students with special needs or considerations.

Activities should not be disconnected things for students to do. Rather they must be designed to meet overall parameters of guiding questions. Activities should be structured to lead students progressively through required content. There is no magic number of activities for each guiding question. Some activities may be broad enough that a single “project” may thoroughly address the guiding question. At other times, a half dozen related activities may help students explore different aspects of the guiding question.

***Decide: How will these activities support what my students need to know and be able to do?***

### Other Considerations

As you build a course, there are additional considerations that will be discussed below.

### Resources

As you build the activities for the course, you will also want to construct a bibliography of resources to help you in your instruction. These are people and materials to assist you and your students in the content of this course. Resources may include information from content associations, reference materials, web sites, community resources, or even student reading materials.

## Technology Integration

Almost every lesson can be strengthened by incorporating technology in some way. Technology cultivates the learner's multiple intelligences by providing a variety of learning opportunities. Assistive and adaptive technology assist the user with disabilities in becoming an independent learner.

- Productivity tools (word processing, spreadsheet, and database programs) may be used in all curricular areas by P-12 students and teachers. These software tools save time and reduce mistakes as data is organized and stored. Word processing programs enhance brainstorming and encourage creativity with the variety of formatting and editing options. (Examples of tools: Claris Works, Claris Works for Kids, Microsoft Office)
- Communicating via electronic mail (e-mail) and conducting research on the Internet are powerful learning strategies applicable to almost all subjects and grade levels. Students may ask questions of experts and students in other locations via e-mail with online projects. Students and teachers who are proficient in searching strategies can locate current, applicable information on the Internet even more quickly. Academic Villages, which provide additional resources for most content areas, may be accessed from KDE's Web pages at <<http://www.kde.state.ky.us>> -click on Kentucky's Academic Villages. (Examples of tools: Microsoft Exchange, Netscape Navigator)
- Specific content-based software may also be integrated into each content area with all grade levels. Teachers may access electronic instructional material lists identified in the textbook adoption process on KDE's Web Site <<http://www.kde.state.ky.us>> -click on Technology-click on Instruction- click on Electronic Instructional Materials. Additional software reviews may be accessed on the Internet at the Southern Region Education Board's evaluation Web page <<http://www.evalutech.sreb.org>>.
- Reference CD-ROM software and online reference database (e.g. periodical, encyclopedia) are often used either in the library media center or in the classroom to support student and/or teacher inquiry. The library media specialist can teach appropriate search strategies for the tools. ( Examples of databases: UMI Pro Quest, Britannica Online)
- Presentation software and desktop publishing programs allow students and teachers to synthesize and deliver information in innovative ways. (Examples of software: Microsoft Power Point, HyperStudio, PageMaker)
- Other technologies such as graphing calculators, laser disks, and distance education should be considered to provide additional learning opportunities. Graphing calculators are utilized in science and math classes to develop models of mathematical principles. Laser disc technology permits large groups of students to view scientific experiments/dissections which cannot be conducted in class. (Examples of laser disk software: Windows for Science, Great Ocean Rescue.) The Kentucky Telelinking Network (KTLN), an example of distance education, involves students within various locations in the Commonwealth in discussing issues and solving real-world problems. For more information on KTLN refer to the Kentucky Academy for Technology Education Web page at <<http://www.mursuky.edu/kate/kate.htm>> for more information on KTLN.

## Extensions for Diverse Learners

### Introduction

Every good teacher knows that no two students learn at the same pace, to the same level, at the same time, in the same way. Effective educators have instinctively addressed the uniqueness of each student, considering it part of the natural and necessary aspect of educating students. In an effective classroom teachers use materials, methods, or services that address the unique needs of the students naturally immersed in the context of the classroom. The effective teacher will do whatever it takes for students to be successful, from something as simple as giving a student five extra minutes to finish an assignment to something as extravagant as dressing up as Macbeth to engage students in Shakespearean studies.

As educators, we must design instruction and assessment in such a way that it accommodates ALL students. This is not as difficult as it may seem. Providing extensions requires that educators understand the relationships of the needs, interests, and abilities of the student to the instruction and assessment. Teachers then use this information for intentional and deliberate planning when developing and delivering instruction and assessment. In short, providing extensions ensures that the student has what she or he needs to benefit from the instruction and assessment.

The intention of making educational extensions is to build a student's opportunity for learning, NOT to diminish the integrity of content, instruction or assessment. Extensions provide access to curriculum and content that otherwise may not be experienced, thus increasing the level of knowledge and skills. Increasing the access to the content transforms the student from passive to active learner, which in turn increases their success rates.

For most students with diverse learning needs, providing extensions requires changes to the environment, materials, instruction or assessment routine that are necessary for the student to be successful. The types of extensions needed in an instructional or assessment environment depend upon the student, the content, skills, processes necessary for learning, and the environment. For one student, only one type of extension may be necessary to address learning needs. While for another student, the complexity of his needs or the content, skills, and processes required for learning may require several types of extensions to access the content and participate in learning.

### What are Extensions?

Extensions are the methods, materials, services, and environments of instruction and assessment that allow a student to be successful. Extensions are provided to ensure students reach their intended goal without jeopardizing the integrity of the content or learning processes.

For students with disabilities, extensions include the specially designed instruction as indicated on their Individual Education Programs (IEPs). Specially designed instruction includes the

...modifications or alterations in instruction methods, techniques, materials, media or content, including physical and environmental adaptations that are unique or different from those used with most or all of the children or youth of the same or similar age, but which are required for a student with educational disabilities to meet IEP goals and objectives. Specially designed instruction includes instructional services and community experiences needed to meet transition needs and assistive technology devices and services. (707 KAR 1:210)

For example, a student with a visual impairment uses extensions such as large print textbooks, books or lessons on tape, low-vision devices, or Braille books to access content and engage in learning.

There are extensions provided for students in every learning situation that seem so simple we almost forget they are there. We take them for granted as natural to the environment. For example, in public schools we “extend” to students a teacher, the use of tables or desks, overhead lighting, and textbooks, all of which are important for students to benefit from learning. These items are so naturally ingrained in most educational environments that we do not typically think of them as materials or services which are necessary for the students to be successful in their learning.

Because not all students learn the same way, when planning courses, instruction and assessment, teachers must consider and provide for students who require extensions that are different from those we typically offer for all or most students in a classroom. For students whose first language is not English and who have limited English proficiency, courses may routinely include not only content standards for the discipline but also language objectives specific to the content and development of speaking, listening, writing and reading. Extensions including using strategies to activate prior knowledge, provide language support, and reduce language demands become a necessary component in designing effective courses and instruction to meet the needs of students with limited English proficiency. For example, teachers may use scaffolding, semantic maps or other graphic organizers, dialog journals and various forms of multimedia to support language and content learning. In addition, they may use other research-based approaches [e.g., Cognitive Academic Language Learning Approach (CALLA), the Total Physical Response Approach (TPR), the Natural Approach].

For gifted and talented students extensions are necessary to meet the requirement to provide differentiated curricula matched to diagnosed student interests needs, and abilities (704 KAR 3:285 Sections 6 and 7). Differentiation requires extending, replacing or supplementing learning beyond the standard curriculum. For example, a student who is gifted and talented in science and math or a student who has an interest in medical research, is matched to a mentor in medical research at a hospital or university either through face-to-face opportunities for interaction or through technology.

The challenge for teachers is to determine the difference between typical extensions and those unique extensions required for a student to meet specific educational goals. The primary difference between what the typical student needs and what the diverse learner requires is in the **degree** of change from what is normally provided.

## Case Studies

*The majority of Ms. Wolf's class is learning about the five food groups. However, Emil has already mastered the skills identified in this health unit and needs challenging work two grade levels above his peers. Instead of making him repeat work he has already mastered, the extensions for Emil included developing a research contract between the teacher and him in which he would research the amino acids, vitamins, and minerals found in the different food groups.*

*Several extensions were designed for Emil that are different than most of the other students.*

- He participates differently in the learning (conducts independent research instead of group work).*
- The materials will be different (higher level vocabulary, more complex content).*
- His demonstration of knowledge will be different (creating a report instead of a food pyramid).*

*Another student in the class, Beth has an IEP goal for reading comprehension. To meet this goal, the specially designed instruction requires that Ms. Wolf provide highlighted materials and a note-taking guide for answering factual questions.*

*Two basic extensions were provided for Beth.*

- Highlighted materials (indicating the most important facts for her to know and remember) are provided.*
- The identified routines she would use to learn (note-taking guide) provide assistance in identifying important information.*

In all, there are at least thirteen (13) different types of extensions to consider and provide for students without jeopardizing the integrity of the content or learning. Extensions provide equity for learning. For more information on these types of extensions, see the next page.

### Which Students are Eligible for Extensions?

Extensions are provided for all students to facilitate access to content and learning. However, there are specific laws and regulations which require providing extensions for certain students to ensure they have both the opportunity to learn and the support structures necessary to assist them in reaching higher expectations. When we think of students who are typically provided extensions, we usually think about students with limited English proficiency (LEP), gifted and talented students, students with disabilities, and students participating in Title I or other support services.

Federal and state laws provide for and protect students who have diverse learning needs by requiring planning and implementation of successful instruction activities, strategies and assessments. These include extensions to ensure students have access to the curriculum and assist with the attainment of high expectations. A short list of such laws include

- Individuals with Disabilities Education Act Amendments of 1997
- Section 504 of the Rehabilitation Act of 1973
- Kentucky Revised Statutes
- Kentucky Administrative Regulations Related to Exceptional Children

- Kentucky Administrative Regulations Related to Gifted and Talented Students
- Title VI of the Civil Rights Act of 1964
- Equal Education Opportunities Act of 1974
- Title VII, Bilingual Education Language Enhancement and Language Acquisition Program under Improving America’s School Act
- American with Disabilities Act

What are specific types of extensions?

Based upon research, including eleven (11) years of classroom research across Kentucky schools, at least thirteen (13) different types of extensions have been identified that are effectively used to ensure that students have access to content and attain high expectations without negatively impacting the integrity of the content, instruction, or assessment. As a course is designed, it is important to develop appropriate learning activities for all students, and any design should allow for diverse needs. A brief description and examples of each extension are provided below.

Purpose and Appropriateness of Task matches the intent, goal, or reason for the task to the interests, needs, and abilities of the student. Example: write a resume for a summer job, mentor with a scientist if that is an occupational goal, build English language skills along with discipline content knowledge.

Complexity of Task identifies the level of sophistication or depth of the task, approach to problem, process for solving problems, dimensions, degree of decision-making required, or level of challenge. Examples: measure using the nearest inch instead of the neared quarter inch, use a four step problem solving process instead of an eight steep process, devise a new formula, research and create a novel product.

Size of Task/Magnitude specifies the quantity, scope, magnitude, or proportions of the task or assignment. Examples: use three research tools instead of five; conduct on-going, year-long research instead of a five-week project; interview one person rather than four.

Time specifies the duration, cycle, length, or interval for learning and demonstrating knowledge. Examples: assess at smaller intervals, allow additional time without penalty, eliminate task based on mastery demonstrated on pretest.

Pace, Rate, Velocity, Speed, or Acceleration of Learning identifies time related aspects of assignments. Examples: eliminate unnecessary practice to reduce redundancy; complete course over two semesters instead of one.

Environment of Learning identifies a variety of settings, situations or domains necessary for learning, access and need for specialized resources, or physical characteristics of environment. Examples: community learning opportunities, wall charts for visual stimuli, seating arrangements, university courses or projects.

Order of Learning gives attention to student’s prior knowledge to determine the appropriate instruction sequence, priority, or progression of learning experiences. Examples: teach/review prerequisite skills, model an algorithm using multiple examples, use curriculum compacting, activate prior knowledge, teach language of content, teaching text structure first.

Procedures and Routines identify a variety of methods used to organize; manipulate; and translate content, skills, and processes into understandable structures for students. Examples: flexible grouping routines, guided practice, mastery learning, advanced organizers, *Content Enhancement Routines*.

Resources and Materials identify software, equipment, fixtures, gear, supplies, print, non-print, human resources, and furnishings appropriate for learning. Examples: dark colored markers, large print text books, graphics, audiotapes, e-mail contact with research professor, Internet connections with other second language learners, Phonic Ear, speech-text converter.

Application and Demonstration of Knowledge identifies the process of transferring learning to real life situations by making connections among familiar and unfamiliar ideas and settings demonstrated through performances and or products. Examples: learning logs, varied test formats, book report instead of an essay, presentation of independent project recommendations to the city council, presentations in one's native language, modified performance standards.

Level of Support and Independence specifies the degree of dependence/independence, need for direct or indirect guidance, or encouragement. Examples: job coaching, independent studies, interpreter support, bilingual mentors.

Participation identifies the degree of interaction for optimum learning. Examples: active learning, group instead of individual projects, individual research mentorships.

Motivation: provides incentives (intrinsic/extrinsic) that match the student's needs, abilities and interests. Examples: student teacher partnership, goal setting, menu of reinforcers for token economy system, independent pursuit of intense interests, making connections to one's culture.

#### Who is Responsible for the Design and Implementation of Extensions?

The teacher who provides the instruction and assessment for the student is ultimately responsible for the implementation of the extensions. For example, the gifted specialist teacher may arrange for a student to work with a university professor in a project which will meet requirements for a classroom assignment. In many cases there is a team of teachers who work together to identify specific extensions that students will need for daily instruction.

#### *Case Study*

*Glenna completely comprehends information when it is presented orally but, she only understands written information on or about the fourth-grade level. She will be in the eighth grade this fall. As the eighth-grade science teacher prepares instruction for the beginning of the school year, she works with the special education teacher to develop extensions that will help Glenna understand the content from the written textbook in different ways. The teachers agree to have the chapters in the text put on audio tape so that she can listen to the information from the text book and gain the content knowledge. In addition, they agree that any written information used in class will be either read aloud, read to her before class, or rewritten using semantic maps to build vocabulary and relationships of concepts so she can comprehend the content.*



*The decision regarding who will actually create extensions that must be developed (e.g., make tapes, modify the texts) is made by the team of teachers. Different teams choose different roles. For example, the special education teacher may make modified text books while the general education teacher has students from the high school make audio tapes of the text books as part of their service learning program.*

### How are extensions determined and designed?

When teachers design instruction and assessment, general decisions are made regarding the content and skills to be taught, instructional methods and activities used, prerequisite skills, and the materials necessary for learning. The challenge is taking the general decisions about the instruction and assessment and applying those decisions to individual students who require specific extensions. Below is a brief list of the most basic questions to ask as instruction and assessment is matched to the unique needs of individual students.

1. What are the interests, needs, and abilities of the student?

Example 1: Joe loves airplanes and other mechanical objects. He has difficulty with writing words on paper, but can verbally explain what he knows. He is distractible and requires quiet when writing.

Example 2: Janet has a wide range of interests but especially likes animals. She reads two years beyond grade level, has an advanced vocabulary, performs at or near the top of the class in all subjects, has few friends, attends a pullout for intellectually gifted students two hours per week.

2. What specific instructional or assessment needs will this student have in any educational situation? That is, does the student understand and use appropriate learning strategies? Does the student understand the language of the instruction? Does the student have the reading skills for the written materials?

Example 1: Joe can verbally express what he knows but has difficulty writing. Therefore, in any writing situation across the curriculum he may need extensions for written work such as audiotaping his test responses or journal entries.

Example 2: To ensure continuous progress and challenge, Janet will need ready access to advanced level reading materials across all content areas. It will be important to assess her knowledge of content prior to teaching (e.g., using pretests) to eliminate unnecessary repetition and to assist in placing her in an appropriate instructional group.

3. How will the student's specific needs impact and be impacted by the content, instruction, and assessment as it is typically provided in a specific content area?

Example 1: Instruction and assessment in a topic area require extensive writing. Joe writes slowly and requires additional time to complete writing assignments.

Example 2: Students such as Janet typically become underachievers if given tasks that are too easy. Flexible instructional grouping with students of similar ability will meet some of her social emotional needs as well as learning needs.

4. What is the match among the content, instruction, and assessment and the student's interests, needs, and abilities?

Example 1: Joe's interest in airplanes and mechanics will enhance interest in algebraic equations that relate to these properties. He can verbalize mathematical equations quickly and accurately, but he cannot write them quickly.

Example 2: Janet's teacher consults with the gifted education specialist classroom teacher to identify Janet's specific needs. They plan together who will be responsible for meeting each of the identified needs and what materials resources and service options are most appropriate to meet Janet's needs.

5. Are there indications that some aspect of the environment may interfere with or enhance student learning?

Example 1: Joe needs a quiet place without distractions when required to write, but his classroom is an "open" room connected to other rooms.

Example 2: Janet needs ready access to advanced, complex materials and instruction. This may include regular instruction in a content area in a classroom with older students, use of technology not available in the classroom or off-site investigations with a mentor.

6. What types of extensions are indicated for the student?

Example 1: environment, materials, demonstration of knowledge.

Example 2: purpose and appropriateness, complexity environment, procedures and routines level of support, demonstration of knowledge, resources and materials, order of learning.

7. What is the simplest degree of change in an extension that can be provided that will maximize the student's learning?

Example 1: Provide Joe with a quiet space for studying, free of distraction, when he is to do written work (environment). Allow Joe to use audio tapes or voice-to-text on the computer to respond to work (materials). Allow Joe to present information visually or orally instead of always in written format (demonstration of knowledge).

Example 2: Place Janet in an instructional reading group with others of similar measured ability (procedures and routines). Use novels beyond grade level and assign more complex analysis tasks (resources and materials, complexity, demonstration of knowledge).

Extensions allow all students to access the curriculum, to be challenged by the curriculum, and to be actively engaged in learning. Planning extensions initially as you design your courses, instructional units and activities provides meaningful opportunities for students to learn. The following chart provides additional examples of extensions you may wish to use as you develop your courses. In addition, you will find references and resources in each content section.

## Extensions for Diverse Learners

Extension	Description	Extension Examples
<p><b>Purpose and Appropriateness of Task</b></p>	<p>Matching the intent, goal, or reason for the task to the interests, needs, and abilities of the student</p>	<ul style="list-style-type: none"> <li>• write a resume for a summer job</li> <li>• match math activities to after school job site requirements</li> <li>• mentor with a research scientist</li> <li>• learn and make healthy food choices in a natural environment</li> </ul>
<p><b>Complexity of Task</b></p>	<p>Level of sophistication of task; depth; approach to problem; process for solving problems; dimensions; degree of decision making required; level of challenge</p>	<ul style="list-style-type: none"> <li>• measure wood products to the nearest inch instead of the nearest quarter inch</li> <li>• develop a software program to monitor and analyze water pollution levels</li> <li>• participate in a philosophical inquiry seminar on justice</li> <li>• develop a bill on tobacco use and apply the steps for taking a proposed bill through the House (instead of comparing the process of taking the bill through both the House and the Senate)</li> <li>• vary complexity of open response questions to target application of skills and content based on needs, interests, and abilities of student</li> </ul>
<p><b>Size of Task/ Magnitude</b></p>	<p>Quantity, scope, size, proportions of task</p>	<ul style="list-style-type: none"> <li>• alter performance criteria (e.g., use three research tools rather than five)</li> <li>• reduce assignments</li> <li>• conduct an ongoing, year-long research project instead of a 5-week research project</li> <li>• student completes 5 math problems instead of 25</li> <li>• write a novelette instead of a short story</li> <li>• compare and contrast one's own culture with another culture rather than multiple cultures</li> </ul>

## Extensions for Diverse Learners (Continued)

Extension	Description	Extension Examples
<b>Time</b>	Duration, cycle, length or intervals for learning and demonstrating knowledge	<ul style="list-style-type: none"> <li>• schedule assessment at different intervals</li> <li>• adjust duration of practice opportunities to student needs</li> <li>• provide additional time without penalty</li> <li>• reduce duration of seatwork</li> <li>• decrease time for students who already know the information</li> </ul>
<b>Pace</b>	Rate, velocity, speed, acceleration of learning	<ul style="list-style-type: none"> <li>• eliminate unnecessary practice to reduce redundancy</li> <li>• complete a course in half time or allowing a course to cover two semesters</li> </ul>
<b>Environment of Learning</b>	The variety of settings, situations or domains necessary for learning; access and need for specialized resources; physical characteristics of environment	<ul style="list-style-type: none"> <li>• community involvement and learning opportunities</li> <li>• seating arrangement</li> <li>• posted assignments in classroom</li> <li>• structured/consistent classroom routines</li> <li>• reduction of external stimuli</li> <li>• ready access to a variety of learning or investigative environments (other levels of public education, higher education)</li> <li>• wall charts with visual aids for steps, processes, formulas, rules</li> <li>• allow to sit in different places (seat, bean chair, floor)</li> <li>• post routines/expectations</li> <li>• middle school student takes class at high school</li> <li>• field work sites for learning; use scientific lab at research institute; conduct water quality study on several farms; bring in specialist on alternate uses of tobacco</li> <li>• teacher models attitudes towards excellence and lifelong learning</li> <li>• student choose learning path for solar system</li> <li>• student poses and investigates a new theory on the extinction of dinosaurs</li> </ul>

## Extensions for Diverse Learners (Continued)

Extension	Description	Extension Examples
<b>Order of Learning</b>	Attention to student's prior knowledge to determine the appropriate instructional sequence, priority, or progression of learning experiences	<ul style="list-style-type: none"> <li>• teach/review prerequisite concepts before new information</li> <li>• use pretest to determine what student already knows</li> <li>• allow student to use calculator for multiplication facts and move to higher level math skills</li> <li>• learn history from issues and patterns rather than chronological approach</li> <li>• use curriculum compacting</li> <li>• introduce content/concepts in appropriate stages or segments (e.g., smaller steps or larger leaps)</li> </ul>
<b>Procedures and Routines - Input</b>	The variety of methods used to organize, manipulate and translate content, skills and processes into understandable structures for students	<ul style="list-style-type: none"> <li>• flexible grouping routines</li> <li>• write problems (board, overhead, written document)</li> <li>• scaffold open response questions having multiple parts</li> <li>• use content enhancements in delivery of instruction (mapping, visual aids, analogies, mnemonics, organization of information strategies)</li> <li>• use advance organizers and post organizers</li> <li>• use visual and auditory attention signals</li> <li>• use mastery learning (e.g., opportunity to retake)</li> <li>• use examples/nonexamples to teach concepts or content</li> <li>• allow self-correction opportunities (e.g., error correcting)</li> <li>• use specific content related manipulative materials or models to encourage mental processing (e.g., algebra tiles)</li> <li>• use guided and independent practice as appropriate</li> <li>• teach and use organizational routines (e.g., binders with dividers)</li> <li>• teach concept/content in connection with real life experiences</li> </ul>

## Extensions for Diverse Learners (Continued)

Extension	Description	Extension Examples
<p><b>Procedures and Routines - Input Continued</b></p>	<p>The variety of methods used to organize, manipulate and translate content, skills and processes into understandable structures for students</p>	<ul style="list-style-type: none"> <li>• use modeling techniques to enhance content/concepts (e.g., metacognitive, self-talk strategies, demonstration)</li> <li>• vary the delivery and assessment of content/concepts with attention to learning styles, multiple intelligences (e.g., drama, science lab, video)</li> <li>• use rubrics and exemplars</li> <li>• use feedback loops and reflection practices</li> <li>• use contract</li> <li>• build in the use of mentors for planned instruction to enhance content</li> <li>• instruct using multisensory approaches</li> <li>• use individual memory devices or strategies</li> <li>• provide factual/content or procedure on reference sheet or audiotape</li> </ul>
<p><b>Resources and Materials</b></p>	<p>The software, equipment, fixtures, gear, supplies, print, nonprint, human resources, and furnishings appropriate for learning</p>	<ul style="list-style-type: none"> <li>• dark colored markers</li> <li>• large print</li> <li>• color, shape or size to address similarities and differences</li> <li>• board, overhead, paper, or graphs</li> <li>• audiotapes (taped reading, taped responses for assignment)</li> <li>• dividers in notebooks for organizing materials</li> <li>• manipulatives</li> <li>• interactive learning networks</li> <li>• online Internet mentor</li> <li>• learner tools (glossary, calculator, word banks, grammar/spell check)</li> <li>• computer (practice, drills, tutorials, simulation, written products)</li> <li>• different page formats</li> <li>• 3-D models</li> <li>• individual notecards with directions, formulas, steps, procedures, rules, processes</li> <li>• videos</li> <li>• adaptive switches</li> <li>• historic time lines charts</li> <li>• audio texts, adapted text</li> <li>• speech to print software for notetaking</li> </ul>

## Extensions for Diverse Learners (Continued)

Extension	Description	Extension Examples
<b>Resources and Materials Continued</b>	The software, equipment, fixtures, gear, supplies, print, nonprint, human resources, and furnishings appropriate for learning	<ul style="list-style-type: none"> <li>• notes to support learning</li> <li>• range of complexity in literature, resources, realia to support learning</li> <li>• bilingual dictionaries</li> <li>• translators</li> <li>• reference resources (e.g., encyclopedia, atlas)</li> </ul>
<b>Application and Demonstration of Knowledge</b>	The process of transferring learning to real life situations by making connections among familiar and unfamiliar ideas, settings demonstrated through performances and/or products	<ul style="list-style-type: none"> <li>• learning logs</li> <li>• variety of options to demonstrate learning (e.g., brochures, cartoons, diagram, dance, poster, oral, written, demonstration, model, art, community problem solving, academic competitions)</li> <li>• offer variety of test formats (questions/responses)</li> <li>• dialog journals</li> </ul>
<b>Level of Support and Independence</b>	Degree of dependence/independence; need for direct or indirect guidance, encouragement	<ul style="list-style-type: none"> <li>• pairs learning</li> <li>• job coach</li> <li>• correspondence course</li> <li>• time management strategies</li> <li>• team or small group project</li> <li>• cooperative learning</li> <li>• group presentations</li> <li>• partner generated tasks</li> <li>• independent problem solving</li> <li>• partner or group discussions to solve problems</li> <li>• peer tutors</li> <li>• mentorships</li> <li>• paraprofessional</li> <li>• self-monitoring</li> <li>• contracts</li> </ul>

## Extensions for Diverse Learners (Continued)

Extension	Description	Extension Examples
<b>Participation</b>	Degree of interaction for optimum learning	<ul style="list-style-type: none"> <li>• active learning (e.g., self questioning strategies, metacognitive and cognitive strategies, visual imagery, self-monitoring)</li> <li>• individually targeted purpose for involvement (e.g., social interaction, application of social skills in cooperative learning group, peer models)</li> <li>• use of engaging tasks, activities, assignments which require active student participation, thought, and action</li> <li>• individual student selection of participation (e.g., research habitats, build habitat, design habitat)</li> <li>• application of knowledge based on personal interests, needs, and abilities</li> </ul>
<b>Motivation</b>	Incentives - extrinsic or intrinsic - that match to the student's needs, interests and abilities	<ul style="list-style-type: none"> <li>• student/teacher partnership - student choice in selecting literature, ways to demonstrate learning, ways to approach learning</li> <li>• goal setting</li> <li>• personal contracts (individual student)</li> <li>• personal and/or class charting of progress</li> <li>• meaningful tasks and assignments useful to self or others (e.g., constructing personal budget, budget for business)</li> <li>• self selection and design of student projects and activities</li> <li>• using novel approaches to learning</li> <li>• using multiple intelligences</li> <li>• develop community of learners offering voice, choice, respect</li> <li>• student choice of topics, themes, projects</li> <li>• self selected topics for research</li> <li>• opportunities for motivated students to take honors and advanced studies based on student interest</li> <li>• accelerated options for learning</li> <li>• service learning</li> <li>• clear structure rewards</li> <li>• mentorships</li> <li>• free time connected to task completion</li> <li>• positive notes to parents and students</li> </ul>



## Diverse Learners Resources

### Publications: Books

- Adams, Marilyn Jaeger. *Beginning to Read Thinking and Learning about Print*. Cambridge, MA: The MIT Press, 1994.
- Ashworth, Mary. *The First Step on the Longer Path Becoming an ESL Teacher*. Markham, Ontario: Phippen Publishing Limited, 1992.
- Chamont, Anna Uhl, and J. Michael O'Malley. *The CALLA Handbook*. Reading, MA: Addison-Wesley Publishing Company, 1994.
- Children and ESL: Integrating Perspectives*. Edited by Pat Rigg and D. Scott Enright. Washington, DC: Teachers of English to Speakers of Other Languages, 1986.
- Cooney, Thomas J., Stephen I. Brown, John A. Dossey. George Schrage, Erich Ch. Wittman. *Mathematics, Pedagogy, and Secondary Teacher Education*. Portsmouth, NH: Heinemann, 1996. ISBN # 0-435-08377-5.
- Corwin, Rebecca B., Judith Storeygard and Sabra L. Price. *talking mathematics Supporting Children's Voices*. Portsmouth, NH: Heinemann, 1996.
- Countryman, Joan. *Writing to Learn Mathematics Strategies that Work*. Portsmouth, NH: Heinemann, 1992. ISBN # 0-435-08377-5.
- Deschenes, C., D. Ebeling, and J. Sprague. *Adapting Curriculum & Instruction in Inclusive Classrooms: A Teacher's Desk Reference*. Bloomington, IN: The Center for School and Community Integration Institute for the Study of Developmental Disabilities, 1994.
- Five, Cora Lee. *Special Voices*. Portsmouth, NH: Heinemann, 1992.
- Freeman David E., and Yvonne S. Freeman. *Between Worlds Access to Second Language Acquisition*. Portsmouth, NH: Heinemann, 1994.
- Freeman, Yvonne S., and David Freeman. *Whole Language for Second Language Learners*. Portsmouth, NH: Heinemann, 1992. ISBN # 0-435-08723-1.
- Gibbons, Pauline. *Learning to Learn in a Second Language*. Portsmouth, NH: Heinemann, 1991.
- Hemmerich, Hal, Wendy Lim, and Kanwal Neel. *Prime Time Strategies for life-long learning in mathematics and science in the middle and high school grades*. Portsmouth, NH: Heinemann, 1994. ISBN # 0-425-06363-5.

- Lipke, Barbara. *Figures, Facts, and Fables Telling Tales in Science and Math*. Portsmouth, NH: Heinemann, 1996.  
ISBN # 0-435-07105-X.
- Mastropieri, Margo A. and Thomas E. Scruggs. *Teaching Students Ways to Remember Strategies for Learning Mnemonically*. Cambridge, MA: Brookline Books, 1991.
- Mercer, Cecil D., and Ann R. Mercer. *Teaching Students with Learning Problems*. New York, NY: Macmillan Publishing Company. 1993.  
ISBN # 01-380561-7.
- Mills, Heidi, Timothy O'Keefe, and David Whitin. *Mathematics in the Making Authoring Ideas in Primary Classrooms*. Portsmouth, NH: Heinemann, 1996. ISBN # 0-435-07100-9.
- Moll, A. *Creating a Single Service Delivery System Using a Collaborative Teaching Model in Kentucky Schools*. UMI: Dissertation Abstracts, 1996.
- Ohanian, Susan. *Math at a Glance A Month Celebration of the Numbers Around Us*. Portsmouth, NH: Heinemann, 1995. ISBN # 0-435-08364-3.
- Parker, Ruth E. *Mathematical Power Lessons from a Classroom*. Portsmouth, NH: Heinemann, 1993.
- Parker, Ruth E. *Mathematical Power*. Portsmouth, NH: Heinemann, 1993. Backhouse, John, Linda Haggarty, Susan Pirie and Jude Stratton. *Improving the Learning of Mathematics*. Portsmouth, NH: Heinemann, 1992.  
ISBN # 0-435-08330-9.
- Piper, Terry. *And Then There Were Two Children and Second Language Learning*. Markham, Ontario: Phippen Publishing Limited, 1993.
- Peyton, Joy Kreeft, and Jana Staton. *Dialogue Journal Writing with Nonnative English Speakers An Instructional Packet for Teachers and Workshop Leaders*. Alexandria, VA: Teachers of English to Speakers of Other Languages, 1992.
- Readence, J. Bean, and R. Baldwin. *Content Area Reading: An Integrated Approach*. Dubuque, Iowa: Kendall/Hunt, 1981.
- Reif, S., and J. Heimburge. *How to Reach and Teach All Students in the Inclusive Classroom*. West Nyack, NY: The Center for Applied Research in Education, 1996.
- Rhodes, Lynn K., and Curt Dudley-Marling. *Readers and Writers with a Difference*. Portsmouth, NH: Heinemann, 1988.
- Richard-Amato, Patricia A. *Making It Happen Interaction in the Second Language Classroom From Theory to Practice*. White Plains, NY: Addison-Wesley Publishing Group, Longman, 1996.

Rowan, Thomas, and Barbara Bourne. *Thinking Like Mathematicians*. Portsmouth, NH: Heinemann, 1994.  
ISBN # 0-435-08343-0.

Sawyer, Ann. *Developments in Elementary Mathematics Teaching*. Portsmouth, NH: Heinemann, 1995.  
ISBN # 0-435-08371-7.

Stoessiger, Rex and Joy Edmunds. *Natural Learning and Mathematics*. Portsmouth, NH: Heinemann, 1992.  
ISBN # 0-17-008825-1.

Scheid, Karen. *Helping Students Become Strategic Learners Guidelines for Teaching*. Cambridge, MA: Brookline Books, 1993.

*The Teacher's Reference Book*. Port Chester, NY: National Professional Resources, Inc., 1996.

Tsurda, Gary. *Putting It Together Middle School Math in Transition*. Portsmouth, NH: Heinemann, 1994.  
ISBN # 0-435-08355-4.

VanDover, T. *The Inclusion Guide for Handling Chronically Disruptive Behavior*. Port Chester, NY: National Professional Resources, Inc., 1996.

Whitin, David J., and Sandra Wilde. *It's the Story That Counts*. Portsmouth, NH: Heinemann, 1995.  
ISBN # 0-435-08369-4.

*With Promise Redefining Reading and Writing for "Special" Students*. Edited by Susan Stires. Portsmouth, NH: Heinemann, 1991.

Wood, Karen D. *Practical Strategies for Improving Instruction*. Columbus, OH: National Middle School Association, 1994.

Zaslavsky, Claudia. *The Multicultural Math Classroom Bringing in the World*. Portsmouth, NH: Heinemann, 1996.  
ISBN # 0-435-08373-2.

### **Publications: Instructional Teaching Materials**

Bulgren, Janis A., Jean Schumaker, and Donald D. Deshler. *The Concept Anchoring Routine*. Lawrence, KS: Edge Enterprises, 1997.\*

Bulgren, Janis A., Jean B. Schumaker, and Donald D. Deshler. *The Concept Mastery Routine*. Lawrence, KS: Edge Enterprises, 1994.\*

Bulgren, Janis A., B. Keith Lenz, Donald D. Deshler, and Jean B. Schumaker. *The Concept Comparison Routine*. Lawrence, KS: Edge Enterprises, 1995.\*

- Deshler, Donald D., Jean Schumaker, and Philip C. McKnight. *The Content Enhancement: Survey Routine*. Lawrence, KS: University of Kansas Center for Research on Learning, 1997.\*
- Hughes, Charles A., Kathy L. Ruhl, Donald D. Deshler, and Jean B. Schumaker. *The Quality Assignment Routine*. Lawrence, KS: Edge Enterprises, 1998.\*
- Lenz, Keith, B., Janis A. Bulgren, Jean B. Schumaker, Donald D. Deshler, and Daniel A. Boudah. *The Unit Organizer Routine*. Lawrence, KS: Edge Enterprises, 1994.\*
- Lenz, B. Keith, Richard W. Marrs, Jean B. Schumaker, and Donald D. Deshler. *The Lesson Organizer*. Lawrence, KS: Edge Enterprises, 1993.\*
- Lenz, Keith, B., Jean B. Schumaker, Donald D. Deshler, and Victoria L. Beals. *The Word Identification Strategy*. Lawrence, KS: University of Kansas Center for Research on Learning, 1993.\*
- Nagel, Dana Robbins, Jean B. Schumaker, and Donald D. Deshler. *The First-Letter Mnemonic Strategy*. Lawrence, KS: Edge Enterprises, 1986.
- Schumaker, Jean B., Donald D. Deshler, Alice Zemitzsch, and Michael M. Warner. *The Visual Imagery Strategy*. Lawrence, KS: University of Kansas Center for Research on Learning, 1993.\*
- Schumaker, Jean B., Pegi H. Denton, and Donald D. Deshler. *The Paraphrasing Strategy*. Lawrence, KS: University of Kansas Center for Research on Learning, 1993.\*
- Schumaker, Jean B., Susan M. Nolan, and Donald D. Deshler. *The Error Monitoring Strategy*. Lawrence, KS: University of Kansas Center for Research on Learning, 1987.\*
- Schumaker, Jean B. and Jan Sheldon. *The Sentence Writing Strategy*, Lawrence, KS: University of Kansas Center for Research on Learning, 1991.\*
- Van Reusen, Anthony K., Candace S. Bos, Jean B. Schumaker, and Donald D. Deshler. *The Self-Advocacy Strategy for Education and Transition Planning*. Lawrence, KS: Edge Enterprises, 1994.

\*Requires training.

Additional references and resources are found in the content specific sections of this document.

## Designing Models Using a Functional Approach

### Organizing Content for Instruction

Throughout this manual, you will see examples for organizing the required content outlined in the *Program of Studies*. The regulation on high school graduation requirements provides a variety of alternatives for schools and districts to organize the required content to meet the high school graduation requirements. These alternatives include using any one or a combination of the following approaches to design courses of study:

- discipline-based (traditional),
- integrated,
- interdisciplinary,
- applied, and
- functional.

The first four approaches are described in the section “Designing Your Own Courses” in this document. The “functional approach” is discussed in this section since the high school graduation regulation links this approach to exceptional students. However, this approach is grounded in instructional design and delivery principles which are appropriate for all children and youth, and was designed with all students in mind.

### Functional Approach

The term “functional” is one way schools can organize and deliver the rigorous content described in the *Program of Studies* to meet the academic expectations. **A functional approach to delivering content means: using multiple learning methods in a variety of school, work, home and community settings to provide a continuous learner-paced delivery model with real world applications.** Centered in this approach is the student. There is a direct match to the needs, interests, and abilities of a student. It means using the same rigorous content standards from the *Program of Studies* and matching learning methods and activities to the needs, interests and abilities of a student. The following chart illustrates how the definition for “functional approach” has changed.

*How is the new definition for “functional approach” different from the past definition?*

<p><b>What “Functional” Is</b></p>	<p><b>What “Functional” Is Not</b></p>
<p>An approach to designing and delivering courses, and units of study for all students based on the content standards in the <i>Program of Studies</i></p>	<p>A course to meet the high school graduation requirements based on separate or different content standards from the general education curriculum</p>
<p>Content in the <i>Program of Studies</i> appropriate for the specified grade level</p>	<p>Content below grade level (e.g., elementary content for high school), separate, or different content</p>
<p>High expectations for all students</p>	<p>Low expectations</p>
<p>Knowledge of content and effective strategies for teaching and communicating content so all students can access the content</p>	<p>A lack of knowledge of the content of the <i>Program of Studies</i>, research-based strategies and methods that ensure student access to the content</p>
<p>A belief system that all children can learn given appropriate instruction</p>	<p>A belief system that some children cannot learn</p>
<p>Applicable across all content areas</p>	<p>Application only to some content areas</p>
<p>An approach for all students and essential for some exceptional students</p>	<p>An approach only for students with disabilities</p>
<p>An approach which matches instruction to the needs, interests, and abilities of an individual student</p>	<p>A course model which does not match instruction to the needs, interests, and abilities of an individual student</p>
<p>An approach rich in a variety of instructional methods, intentional learning experiences, use of real word contexts, and focused on the individual</p>	<p>An approach to course design and delivery limited in instructional methods, intentional learning experiences, and use of real word contexts</p>
<p>An approach grounded in instructional design and delivery principles appropriate for all children</p>	<p>An approach grounded in instructional design and delivery principles not appropriate for all children</p>

The functional approach provides a structure to enable

- all students to access, participate in, and progress in the general education curriculum and attain Kentucky’s learning goals and academic expectations;
- delivery of the content standards of the *Program of Studies* to meet diverse learning needs;
- curriculum-based learning focused on the content knowledge, skills, and processes students need to know and be able to do;
- matching of supplementary aids, instructional routines, and services to support the opportunity to learn and access to the general education curriculum; and
- planning instruction and teaching the same content, processes, and skills to students with a variety of diverse needs, interests, and abilities.

Using the functional approach involves

- making decisions about how to organize content for learning in authentic real work contexts;
- selecting and matching instructional routines and procedures to present content matched to individual student needs, interests, and abilities;
- understanding and thinking about the content of the general education curriculum in order to intentionally link the core concepts, ideas, facts, and details so students understand their relationships; and
- thinking about student learning at a variety of levels — systematically from the perspective of the district and school or at the course, classroom, and individual student levels.

The key features of a functional approach are

- multiple learning methods,
- learner focused, and
- real-world applications in a variety of settings and contexts.

A course is developed using a functional approach when the course meets the standards for each of the key features of the definition described in the chart on the following page.

## Standards for the Key Features of a Functional Approach

### *Learner Focused*

- Guiding questions are intentionally designed to relate content to the needs, interests, and abilities of the student.
- Content varies in complexity, depth, and intensity matched to individual student needs, interests, and abilities.
- Varied and multiple uses of technology (e.g., assistive technology devices, multimedia word processors, KTLN, books-on-tape, adaptive devices, Internet, pencil grips), matched to the needs, interests, and abilities of the student, are embedded in day to day instruction.
- Instructional framework allows for flexible performance standards matched to the individual student needs, interests, and abilities.
- Continuous progress is matched to the individual student needs, interests, and abilities and embedded in instruction and evaluated throughout the course.
- Intentional flexibility in rate/pace of learning (pace of study, pace of thought) is matched to the individual student needs, interests, and abilities and embedded in instruction.

### *Multiple Learning Methods*

- Explicit instructional strategies (e.g., metacognition, modeling, problem-solving, scaffolding, mnemonics, guided reading, reciprocal teaching) and routines are matched to the individual needs, interests, and abilities of the student.
- Flexible formats matched to individual student needs, interests, and abilities are used to reteach and extend content knowledge.
- Instructional formats, including instructional devices (e.g. content enhancement, anticipation guides, graphic organizers) matched to the individual student needs, interests, and abilities, are used to enhance content understanding.
- Instructional activities are matched to the needs, interests, and abilities of the student; based on the guiding questions; and intentionally build student knowledge throughout the course to enable the student to use the acquired knowledge to answer the guiding questions.

### *Real World Application in a Variety of Contexts and Settings*

- Culminating projects, exhibitions, and products are clearly related and generalized to the student's current and future personal, career, and life goals.
- Authentic tasks used for instruction and assessment of student performance are matched to the individual student needs, interests, and abilities.
- Learning activities, based on the guiding questions and content to be learned, are well anchored in real world contexts matched to the individual student needs, interests, and abilities.
- Critical thinking is embedded in authentic instructional activities and assessments matched to individual student needs, interests, and abilities.
- Multiple options are provided for generalization of content and concepts to a variety of contexts based on individual student needs, interests, and abilities.
- Instruction and assessment occur in multiple natural settings matched to individual student needs, interests, and abilities.



## Functional Approach to Designing Models

Like discipline-based (traditional), integrated, applied, and interdisciplinary approaches, the functional approach is a framework to apply to the organization, design, and delivery of content for high school courses. However, a functional approach goes one step further and views the delivery of content matched to the individual needs, interests, and abilities of a student, including the support structures necessary for successful implementation.

The functional approach is used to develop general education courses for a class or group of students or to design a course for an individual student. As stated before, the elements of the framework are based on instructional principles that are appropriate for all students while essential for some exceptional students. Not all exceptional students need a totally functional approach to learning content. Many students only need minimal extensions and then are successfully challenged by the content and supported in learning the content. When you begin to use most or all of the extensions referenced in “Extensions for Diverse Learners” then you are moving toward a functional approach. As you begin to design your course models, the more you embed the elements of the functional approach in your initial design of the model the more likely you will have developed a model more inclusive of all students in your classroom.

The functional approach **maintains the rigor of the content requirements** while recognizing

- students learn at different rates, time, and pace;
- the complexity of the content may vary;
- multiple and explicit instructional routines and procedures matched to the needs, interests, and abilities of an individual student are essential for optimal learning;
- the natural learning environment is critical for application and generalization of knowledge, skills, and processes; and
- there are many ways to demonstrate knowledge.

### Steps for Developing a Course from a Functional Approach

The “Standards For The Key Features Of A Functional Approach” on page 108 may be used as a self-assessment to determine if your course is designed and implemented to meet the needs, interests, and abilities of an individual student. The standards are referenced for each of the key features of the definition for a functional approach.

As you use the standards for designing courses from a functional approach, notice the features of the framework represent the key elements in the definition for a functional approach: multiple learning methods, learner focused, and real world applications in a variety of settings and contexts. Remember the following points illustrated below as you begin to design courses from a functional approach.

The functional approach

- overlays any model: integrated, applied, interdisciplinary, applied, and discipline-based (traditional);
- maintains integrity and rigor of the content;
- allows for self-assessing the extent to which content is delivered in a functional approach;
- provides guidance for developing and implementing a functional approach;

- offers standards/indicators for organization and delivery of content;
- guides planning and decision-making to meet individual student needs, interests, and abilities within content;
- incorporates strategies responsive to learner diversity; and
- supports equity, excellence, and inclusiveness.

Step 1: First, use the steps in the section of this manual entitled “Designing Your Own Courses.” As you answer the “Think about questions” posed in the section related to “Designing Content” (which lead to completion of the content chart for your course), begin to think about the diversity of students who will take the course. As you select the content for your course, you may need to build in additional content for an individual student or a group of students to provide them with the foundational content necessary for success in the course. For example, you may have students who do not have the prerequisite vocabulary and concepts for the course. Other students, may already know the content and are ready for extending their content knowledge to a more complex level. Once you develop the content chart for your course the foundation for WHAT will be taught is completed.

Step 2: The next step is designing a course which lays out HOW you will teach the content of the course. One of your first decisions is deciding how to organize the content (discipline based/traditional, interdisciplinary, integrated, or applied). Since the functional approach is designed to overlay one of these other approaches, determine which approach will be used to organize the content following the process described earlier in the manual.

Step 3: As you continue to develop HOW you will teach the content, including guiding questions and activities for the course, think about how to develop the course to match the individual needs, interests, and abilities of the students. Ask these preliminary questions:

- What do I know about individual students taking this course?
- How does each student learn?
- What does each student already know?
- If I have students in my class who need a functional approach, what adjustment in my personal style of teaching may be required?
- How would different background knowledge of my students affect designing a course?
- What do I need to know about my students’ diversity in skills and knowledge?
- What do I need to know about the cultural diversity of my students?

To determine the need for a functional approach for an individual student think about

- To what degree will the student be successful without a functional approach?
- What is the degree of real world application necessary for full participation in the learning?
- Does the Individual Graduation Plan and Individual Transition Plan indicate a need for a functional approach for this content area?
- Are the content and instructional activities focused on and organized to include more elaborate, complex, and in-depth study of major ideas, problems, and themes that integrate knowledge within and across systems of thought?
- Do the content and instructional activities allow for the development of application of productive thinking skills to enable students to reconceptualize existing knowledge and generate new knowledge?
- Do the content and instruction activities enable students to explore constantly changing knowledge and information and develop the belief that knowledge is worth pursuing?

- Do the content and instructional activities encourage exposure to, selection of, and use of specialized and appropriate resources?
- Do the content and instructional activities promote self-initiated and self-directed learning and growth?
- Do the content and instructional activities provide for the development of self understanding and the understanding of ones relationships to persons, societal institutions, nature and culture?

For students with individual plans such as IEPs, 504 Plans, or plans for gifted and talented students, information to help answer these questions can be found in their school records and from participating on the Admissions and Release Committee, 504 committee, or in other student planning processes. These plans describe the specially designed instruction, including extensions matched to individual needs. Since you may not know all of your students when you first design a course, you most likely will need to revisit some of these questions at different points along the way. For example, if you develop a course model over the summer you most likely will not know every student and their needs.

Step 4: Once you have answered the preliminary questions which will assist you in crafting your guiding questions and activities, you are ready for the next step. In this step you intentionally incorporate the standards for the features of the functional approach in your course design. Use the standards to guide you in further development of a course from a functional approach. A course is developed from a functional approach when it incorporates the standards for each of the features of the definition.

Step 5: Once you develop your course from a functional approach, continue to revise the course as the needs, interests, and abilities of your students change. In this step, move from a total course design to thinking about how this approach guides individual student decisions. For example, for a student with disabilities, the ARC needs to develop an IEP which incorporates the necessary instruction and extensions needed by the student for accessing the general education curriculum. For the student who is gifted and talented, this may mean replacing content at a more complex level when he/she already knows the content.

### Support Systems

At the broadest level, implementing a functional approach framework involves systemic restructuring of schools to support shared responsibility for all students, including shared vision, mission, and leadership. In designing a functional approach to learning at a systems levels, schools may ask the following questions to make sure needed supports are available to implement a functional approach:

*How are school schedules based on the time students actually need to acquire content? Have we considered*

- Programs with content themes off campus
- Combination of work experience, mentorships and school settings during the day;
- Flexible structures to allow for compacting or increasing the length of time to acquire content;
- Use of block scheduling; or
- Opportunities to take courses over two blocks instead of one.

*Are roles and responsibilities of staff clearly defined to support successful implementation of a functional approach?*

*How do the attitudes of staff support implementation of a functional approach?*

*Is there adequate personnel and space for successful implementation of the functional approach?*

*Are there flexible alternative models for awarding credit for specific high school courses where there are a combination of different opportunities for learning such as*

- distance education, Internet courses, home and community;
- courses taught by teachers, employers, and mentors;
- alternate calendars and time during the day;
- extended time to earn credit; or
- combined work experience and school settings during the school day.

*What district and school level supports are needed to facilitate successful implementation?*

*Are there flexible transportation options to support instruction in natural settings (community, work, home, school)?*

*What professional development for staff is needed to support implementation?*

*Are there opportunities for programs with content themes off campus?*

Implementing a functional approach to learning requires thoughtful, collaborative planning to the design and delivery of content standards. The models presented in this manual provide ideas for delivering content from a functional approach.

## **Planning Honors Level Courses for Middle and High School**

Honors level courses are typically designed to meet needs of students at least one or two years beyond grade level and are an effective means to address academic needs and some social-emotional needs of high end learners. These classes facilitate a basic principle of education in Kentucky — continuous progress and a challenging curriculum for all children—by providing opportunities for high end learners, including but not limited to those identified as gifted and talented, to develop their potential.

Honors level courses which encompass appropriate differentiation strategies to meet academic needs of gifted students meet part of the requirements of 704 KAR 3:285 - Programs for the Gifted and Talented. Section 6 (4) requires “grouping for instructional purposes based on student interests, abilities, and needs, including social and emotional.” Section 7 (2) requires that each school “differentiate, replace, supplement, or modify curricula to facilitate high level attainment of the learning goals established in KRS 158.6451 and to assist students identified and diagnosed as gifted and talented to develop their individual interests, needs, and abilities.”

Foundations on which to build an honors level course designed for gifted and other motivated high ability students.

The following are basic understandings which should be addressed when designing honors level courses:

- Consider learner characteristics and related needs in designing honors/advanced level courses. Several characteristics, statistically more common among gifted learners and exhibited at a more intense level than among other learners, which have curricular implications are indicated on the chart below:

Learner Characteristics and Related Needs		
Characteristic	Learning Need	Curricular Implications
Works with abstract concepts at an earlier age than peers	Dealing with symbol systems at higher levels of abstraction	Earlier introduction to unfamiliar symbol systems (statistics, computer languages, foreign languages)
Rapid pace of learning	Rapid movement through basic skills and concepts; economical organization of new material to be mastered	Accelerated presentation of material; minimal use of reinforcement activities
Broad store of knowledge; unusually ability to retain information	Opportunities to go into greater depth	Range of advanced level, complex resources; teacher knowledge and delivery of advanced content
High level of verbal ability	In-depth verbal interaction with intellectual peers; advanced level vocabulary development and literature	Earlier exposure to literature (Often will have read novels “traditionally” taught at a given grade level)
Unusual capacity for processing information and for seeing unusual and diverse relationships and formulating generalizations	Encounters with variety of ideas at multiple levels; Opportunities to experiment with ideas and materials; Challenge from intellectual peers	Multi-disciplinary, integrated approaches; Group discussion on selected advanced level topics of mutual interest
Unusual curiosity, multiple interests, goal-directed behavior	Opportunities to explore areas of interest beyond allotted time; Experiences in setting and evaluating priorities and managing time	Flexible time modules, self-selected topics
Idealism, sense of justice, advanced level of moral judgment	Experiences in dealing with negative reactions and validating students’ belief in themselves and their values	Philosophical inquiry; application of high levels of thought to societal problems

- Apply differentiation principles to courses offered to the general student population.

### Content

- 1) Select *varied and more complex resources* representing multiple perspectives. (e.g., nationally recognized adult level periodicals, journals specific to the discipline, materials from advanced level libraries, primary sources, experts in the field of study, advanced level software, CD-ROMS, Internet sites)
- 2) Adjust to a *higher level of abstraction* by focusing on abstract and complex interrelated concepts and generalizations. (e.g., how government affects citizenship; employ interdisciplinary instruction with abstract thematic approach)
- 3) Utilize *discipline specific methods of inquiry*, (e.g., study of history approached as by historian). Include opportunities for students to have personal or technology-facilitated contact with current researchers/practitioners.
- 4) Include *topics of study beyond traditional subject areas*.

### Process

- 1) *Dedicate a significantly greater proportion of time to analysis, synthesis, and evaluation thinking activities*. Use complex questions and activities within the highest levels of thinking. Incorporate the use of various taxonomies not limited to Bloom, sophisticated thinking strategies and questioning models.
- 2) Consider using *advanced level and student-developed simulations* which include debriefing, self/role analysis and relationship to other settings real world situations within and across disciplines.
- 3) Use *degrees of freedom of choice* in projects, independent study, and contracts, based on interest, ability and need; evaluate achievement through mutually agreed upon goals.
- 4) Introduce new, more advanced level material upon assimilation. (*Pace of instruction is accelerated* in an honors/advanced level course.) Provide opportunities for students to design new procedures.
- 5) *Balance use of sophisticated inductive and deductive reasoning* strategies within and among disciplines.

### Product

- 1) Require students to *transform information* and data gathered by applying analysis, synthesis, and/or evaluation to show a view from a different perspective, a prediction or forecast, a reasoned generalization, or a reinterpretation with a different focus. Match demonstrations of knowledge to needs, interests, abilities, and learning styles.
- 2) Approximate as closely as possible products at the level of a practicing professional in the field. Include opportunities for investigation of real complex problems with varied methods of advanced analytic approaches. Students should present their projects/ products to practicing professionals in the field of study for feedback and evaluation.

- Plan for articulation. Planning a course which meets the needs of students capable of performing at least one year beyond grade level and provides the level of challenge needed to maintain growth and motivation requires open access to advanced level materials and resources, even though they may be traditionally used at a higher grade. While application of this principle has been more readily found in the teaching of mathematics, it is appropriate for any subject matter. For example, when a 7th or 8th grade advanced level math student is enrolled in Algebra I, there is no question that Algebra I content specified in the *Program of Studies* is used. Likewise, advanced language arts students may successfully read the unabridged text of *A Midsummer Night's Dream* as well as perform the play as 6th graders, as 7th graders they may read *The Odyssey*, and as 8th graders they may read *Romeo and Juliet* along with *West Side Story* and *To Kill a Mockingbird*. Although these titles are used with the general student population at a higher grade level, they are appropriate components of an honors level class designed for middle level students because they match the needs and abilities of advanced level learners. It is important, however, when selecting literary pieces to assure that the subject matter is developmentally appropriate for the social and emotional needs of the younger learner.

The level of complexity of instructional activities used with literature selections as well as with writing and speaking in an honors level course is likewise at a level at least one year beyond grade level. Therefore, students in honors level courses in English/language arts must have access to curriculum which meets their needs, interests, and abilities and provides continuous progress, regardless of whether or not the resources, materials, or activities are traditionally used at a higher grade level.

Honors level courses in science and social studies also are planned to meet needs of advanced level learners, but while the level and complexity of reading materials should be advanced and challenging, differentiation may focus more on the level of sophistication of concepts. For example, 7th grade students with advanced level abilities in social studies would be appropriately placed in an honors level 7th grade social studies class which still dealt with the same historical period as other sections of 7th grade social studies, but at significantly greater depth and complexity, rather than studying U.S. history which is the focus of 8th grade social studies.

Vertical planning teams in the content areas, including all grade levels at which honors courses and Advanced Placement are offered, should address articulation concerns with attention to the needs, interests, and abilities of learners typically at least one to two years beyond the level of most other learners. This approach will help to ensure that advanced level students have access to challenging curriculum and continuous progress instruction without unnecessary and inappropriate repetition of content or materials which they used at an earlier grade level.

## **Model Submission Information**

Hopefully, this manual will provide useful ideas and direction for implementation of the content outlined in the *Program of Studies*. However, it has not been possible to include every configuration for a model. Teachers are encouraged to develop additional models to share with others across the state. The Division of Curriculum Development will provide guidelines for the development of additional models and disseminate the models via the KDE Web Site <<http://www.kde.state.ky.us>>. Contact the Special Projects Branch at (502) 564-2106 or ([rsims@kde.state.ky.us](mailto:rsims@kde.state.ky.us)) for further guidelines and submission information.



# **REQUIRED CONTENT AREAS**

# Arts and Humanities



# Required Credits

## History and Appreciation of Visual and Performing Arts One-Course Model

### Course Overview:

*History and Appreciation of Visual and Performing Arts* includes the disciplines of dance, music, drama/theatre, and visual arts combined with humanities. In this course, students develop an understanding of the arts and the creative process from a historical perspective. Additionally, they will gain an understanding of the interrelationships between experiences and emotions shared by all peoples, and recognize the arts as valuable contributions to humankind.

Many approaches can be used to present the content for this credit. In each case, students are provided opportunities for learning all content identified in the *Program of Studies*.

### One-Course Approach: One Teacher

One instructional approach requires a certified teacher in art, music, social studies, or language arts to teach all content as indicated in the *Program of Studies*. Artists, artists in residence, community resources, professional arts organization, and university resources may teach portions of the content. However, the certified teacher serves as the teacher of record and is accountable for content coverage as well as preparation and follow-up activities.

### One-Course Approach: Team of Teachers

Another approach requires teachers certified in visual arts, music, social studies, language arts or physical education to teach their special discipline for a portion of the year or semester. Guest specialists may also be involved in this approach. The teaching team should plan jointly to develop connections and/or transitions among the arts disciplines.

*History and Appreciation of Visual and Performing Arts* can be taught as either one- or two-semester courses, and there are a number of instructional approaches that can be used for a one-semester course. In one method, teachers provide instruction in an integrated manner through unifying, broad-based themes (e.g., purposes of the arts, new frontiers, historic periods, social movements). Materials and resources should be drawn from diverse time periods and cultures.

A second method of organizing content for a one-semester course would be a chronological approach. The teacher could start the course by introducing students to the nature and purpose of the arts and the elements of specific arts disciplines. All art forms could be studied in each period, or art forms could be studied separately in a chronologically and/or stylistic order.

An option for a two semester course would be to organize the first semester around in-depth study of a limited number of artistic masterpieces. These masterpieces would be analyzed along with their connections to humanities themes and historical, and/or cultural contexts. Masterpieces should be drawn from diverse time periods and cultures. The other semester could be organized chronologically, where themes would be revisited as they occur in the artistic expression of time periods and cultures studied.

## History and Appreciation of Visual and Performing Arts One-Course Model

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair, are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the needs of all their students. Sample activities for *History and Appreciation of Visual and Performing Arts* are designed by discipline and can be blended in a variety of ways.

### **Guiding Questions:**

- Why do people create and/or perform?
- How do I analyze and interpret my own and others creations?
- How do the arts and humanities reflect history and culture?
- What components lead me to develop an appreciation for the arts and humanities?
- How are the arts and humanities interrelated?

## High School Arts and Humanities Interrelationships Among the Arts

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Visual Arts</b> (1.13)</p> <p><b>Music</b> (1.14)</p> <p><b>Dance</b> (1.15)</p> <p><b>Production</b> (2.22)</p> <p><b>Analysis of Form</b> (2.23)</p> <p><b>Aesthetics</b> (2.24)</p>	<p>How do I analyze and interpret my own and others creations?</p> <p>Why do people create and/or perform?</p>	<p><b>Students will</b> <b>Interrelationships Among the Arts</b></p> <ul style="list-style-type: none"> <li>• analyze, interpret, and evaluate the creation and performance of works in various arts disciplines.</li> <li>• explain how ideas, thoughts, and traditions of humankind are reflected in arts through historical and cultural contexts.</li> </ul>
<p><b>Cultural Heritage</b> (2.25)</p> <p><b>Cultural Diversity</b> (2.26)</p>	<p>How do the arts and humanities reflect history and culture?</p> <p>How can I develop appreciation for the arts and humanities?</p> <p>How are the arts and humanities interrelated?</p>	<p><b>Students will</b> <b>Historical and Cultural Context</b></p> <ul style="list-style-type: none"> <li>• consider how artists in various cultures use elements and principles of arts to create artistic works.</li> <li>• examine how any artist’s performance is influenced by the culture, period, and style in which a work is created.</li> </ul>

## High School Arts and Humanities Interrelationships Among the Arts

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read <i>Flatland</i>. Analyze from the viewpoint of the mathematician, historian, economist, writer, and/or sociologist. Write editorials to explain each viewpoint.</li> <li>• create dances, pieces of music, or works of visual art. Discuss how they reflect present time and culture. Compare, orally and in writing, their own work of art to others’.</li> <li>• compare characteristics of two or more arts disciplines within a particular historical period or style. Use spreadsheet software to create graphs showing these comparisons.</li> <li>• interpret current events through dance, visual art, music, or drama. Create scoring guides for critiquing their work and others’.</li> <li>• create collages demonstrating how the arts are embedded in everyday life (e.g., golden ratio in architecture, tessellations in tiling and quilting patterns).</li> <li>• design time capsules to be opened 100 years from now. Discuss pieces of art included and explain how they reflect today’s society.</li> <li>• research why human beings have communicated through the art forms to fill a variety of human needs. Create multimedia presentations reporting findings.</li> </ul>	
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify and examine works of visual art, music, dance, theatre, and literature from historical periods (e.g., Baroque, Classical, Contemporary). Write critiques of each work for community newspapers.</li> <li>• look at sets of art works and determine how they reflect society. Use graphic organizers to record information.</li> <li>• view works of a single visual artist. Interpret the artist’s style through movement.</li> <li>• explain in learning logs how elements are used in similar and distinctive ways in various arts (e.g., rhythm in music, visual art, and dance, line in visual art, music, and dance).</li> <li>• create multimedia presentations illustrating the integration of arts.</li> </ul>	



# High School Arts and Humanities

## Dance

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Dance</b> <b>(1.15)</b></p> <p style="text-align: center;"><b>Production</b> <b>(2.22)</b></p> <p style="text-align: center;"><b>Analysis of Form</b> <b>(2.23)</b></p> <p style="text-align: center;"><b>Aesthetics</b> <b>(2.24)</b></p> <p style="text-align: center;"><b>Cultural Heritage</b> <b>(2.25)</b></p> <p style="text-align: center;"><b>Cultural Diversity</b> <b>(2.26)</b></p>	<p>How do dancers/choreographers create and/or perform?</p>	<p><b>Students will</b></p> <p><b>Elements of Dance</b></p> <ul style="list-style-type: none"> <li>• describe the process of making dance and how elements of dance (space, time, force) are used to create and communicate meaning.</li> <li>• describe and analyze the effect music, costumes, lighting, props, and scenery have on the choreographic idea of dance.</li> <li>• describe how performers use elements of dance in various dance styles and improvisation.</li> </ul>

# High School Arts and Humanities

## Dance

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• create dances that reflect specific events in history. Describe and demonstrate how the elements of dance were used to communicate events. Videotape dances for peer review.</li><li>• create dances that portray emotions. Explain in learning logs how the elements of dance were used to convey meaning.</li><li>• view dance forms in <i>Riverdance</i>, <i>American Ballroom Competition</i>, or <i>Points in Space</i>. Analyze use of space, time, and force and their effect on the themes of the dances. Use spreadsheet software to create graphs showing these comparisons.</li><li>• view Alvin Ailey’s video, <i>Revelations</i>. Discuss how costumes, lighting, and props impact the meaning of movements. Write personal reflections about effectiveness of costumes on the meaning of movements.</li><li>• view live or video performances by ballet companies of classical works and contemporary pieces. Write an article comparing how the movements, music, and costumes reflect the time and period in which the dance was written.</li></ul>	<p>Donna and Diane have both taken several years of ballet. They will write a dance class lesson to present as a demonstration to the class in which Donna is the ballet pupil and Diane is the teacher. Diane instructs and critiques Donna as she performs movement sequences to show a range of emotions (<i>Types of extensions: purpose and appropriateness, complexity, participation, demonstration of knowledge, motivation</i>).</p>

# High School Arts and Humanities

## Dance

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Dance</b> <b>(1.15)</b></p> <p style="text-align: center;"><b>Production</b> <b>(2.22)</b></p> <p style="text-align: center;"><b>Analysis of Form</b> <b>(2.23)</b></p> <p style="text-align: center;"><b>Aesthetics</b> <b>(2.24)</b></p> <p style="text-align: center;"><b>Cultural Heritage</b> <b>(2.25)</b></p> <p style="text-align: center;"><b>Cultural Diversity</b> <b>(2.26)</b></p>	<p>How do I analyze, interpret, and evaluate my own or others creations in movement?</p> <p>How does dance reflect history and culture?</p>	<p><b>Students will</b></p> <p><b>Historical and Cultural Context</b></p> <ul style="list-style-type: none"> <li>• describe similarities and differences among dance styles.</li> <li>• compare and contrast how dance is used in thematic, social, historical, and/or political contexts.</li> <li>• analyze, interpret, and evaluate various aspects of a dance performance.</li> <li>• explain how dance reflects various time cultures, periods and styles.</li> <li>• analyze the way a dance might be viewed from different perspectives (critics, audiences, choreographers, performers).</li> <li>• analyze, interpret, and evaluate roles of compositional forms in dance.</li> </ul>

# High School Arts and Humanities

## Dance

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare, orally and in writing, several diverse dance styles (e.g., ballet, modern, folk, ballroom). Use the elements of dance to describe similarities and differences in steps and movement styles.</li> <li>• view African and Native American dance rituals. Use a given set of artistic criteria to compare cultured dances with any theatrical dance, ballet, or tap.</li> <li>• compare dance in the middle ages as used in churches to social dance, which was forbidden by the church.</li> <li>• read reviews of dance performances. View videos of that same dance. Analyze how the reviewer’s perspective could be different from that of performers and choreographers.</li> <li>• use media technologies that present dance in a new or enhanced form to create interdisciplinary projects.</li> <li>• create a dance that demonstrates understanding of structures or forms (e.g., theme and variation, round, rondo). Videotape for peer review.</li> </ul> <p><i>Technology suggestion: Use computer-aided live performance or animation.</i></p> <ul style="list-style-type: none"> <li>• research background of popular cultural dances. <i>Write articles for school newspapers to share the dance craze with others (WP-Transactive).</i> Illustrate and describe different dance steps.</li> <li>• create original dances appropriate for the 60s. Explain how history and culture are reflected in dance.</li> <li>• create twenty questions about dance and dancers prior to the 20<sup>th</sup> century. Use the Internet to research dance in previous centuries.</li> </ul>	<p>Sage acquires information best when provided with memory and organizational devices to support his learning, especially when the tasks require integrating information. To view and compare diverse dance styles, Sage is taught a special strategy called the Comparison Routine developed by Center for Research on Learning at the University of Kansas. He uses a reference sheet developed by the teacher with characteristics of various dance styles and uses the comparison routine to assist him with the task (<i>Types of extensions: complexity, magnitude, procedures and routines, order of learning, level of support, resources and materials</i>).</p> <p>Michelle, Brandy, and Charles, advanced social studies students with an interest in dance, will research current cultural, social, and political milieu, as well as current popular dances in countries of their choice. They will create dances for the millennium that might be performed by teens in their chosen countries. They will perform their dances and provide viewers with synopses of their research. Viewers will attempt to identify elements that reflect the cultures (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, resources and materials, participation, motivation, demonstration of knowledge</i>).</p>

# High School Arts and Humanities

## Music

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Music</b> <b>(1.14)</b></p> <p style="text-align: center;"><b>Production</b> <b>(2.22)</b></p> <p style="text-align: center;"><b>Analysis of Form</b> <b>(2.23)</b></p> <p style="text-align: center;"><b>Aesthetics</b> <b>(2.24)</b></p> <p style="text-align: center;"><b>Cultural Heritage</b> <b>(2.25)</b></p> <p style="text-align: center;"><b>Cultural Diversity</b> <b>(2.26)</b></p>	<p>How do musicians/composers create and/or perform?</p>	<p><b>Students will</b></p> <p><b>Elements of Music</b></p> <ul style="list-style-type: none"> <li>• use elements of music (rhythm, melody, form, timbre, harmony, tempo, dynamics) to describe how musicians compose, perform, and improvise.</li> <li>• interpret music notation and symbols.</li> <li>• describe how musicians apply basic knowledge, skills, and interpretations in musical performances.</li> </ul>

**High School Arts and Humanities**  
**Music**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use correct notation, expressive markings where appropriate, and/or specific musical forms and structures to compose rhythmic compositions.</li><li>• perform rhythmic compositions for the class, paying close attention to musical interpretation. Evaluate performances based upon predetermined performance standards.</li><li>• set poems to specific meters. Notate the rhythm of the text, paying close attention to placement of accented and unaccented beats and syllables.</li><li>• read simple notated melodies of familiar songs and sing in unison and rounds. Audiotape performances for comparison.</li><li>• analyze background music of movies and television shows. Write personal reflections about how the music makes them feel.</li><li>• create instruments (e.g., coke cans filled with pebbles, sand, beans, rubber bands) to accompany poems set to simple melodies.</li></ul> <p><i>Technology suggestion: Use electronic keyboards and/or software for compositions.</i></p>	

# High School Arts and Humanities

## Music

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Music</b> <b>(1.14)</b></p> <p><b>Production</b> <b>(2.22)</b></p> <p><b>Analysis of Form</b> <b>(2.23)</b></p> <p><b>Aesthetics</b> <b>(2.24)</b></p> <p><b>Cultural Heritage</b> <b>(2.25)</b></p> <p><b>Cultural Diversity</b> <b>(2.26)</b></p>	<p>How does music reflect history and culture?</p> <p>How do I analyze, interpret and evaluate my own or others' musical creations/performances?</p>	<p><b>Students will</b></p> <p><b>Historical and Cultural Context</b></p> <ul style="list-style-type: none"> <li>• analyze, interpret, and evaluate various aspects of musical performances.</li> <li>• describe various styles and purposes of music and explain how music reflects historical and cultural influences.</li> </ul>

# High School Arts and Humanities

## Music

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• classify aural examples of music by style and historical period or culture. Write comparative essays of musical compositions.</li><li>• listen to musical compositions from different style periods. Discuss how music evolved from one style period to the next (e.g., Renaissance to Baroque). Use elements of music as criteria to compare compositions. Use software to graph the comparisons.</li><li>• listen to compositions based upon authentic folk music from different composers (e.g., Bartok, Chopin, Tchaikovsky, Ives, Copland, Dvorak). Discuss and speculate causes for similarities. Produce study guides to use for end of unit assessment.</li><li>• listen to Baroque and jazz music. Create multimedia presentations comparing improvisation strategies.</li><li>• create media presentations set to music representing emotions and critical attributes of events having social,</li></ul>	<p>Rhonda uses an interpreter to understand information presented orally. For the assignment to listen to two musical compositions from different style periods and discuss how they evolved. Rhonda uses the Internet to gather information about different style periods to present in class discussion. Interpreters voice for Rhonda when she presents her information. When the class is listening to the music, Rhonda places her hand on the speaker to feel vibrations. The interpreter signs the tempo (<i>Types of extensions: level of support, procedures and routines, demonstration of knowledge</i>).</p>



## High School Arts and Humanities Drama/Theatre

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Production</b> (2.22)</p> <p><b>Analysis of Form</b> (2.23)</p> <p><b>Aesthetics</b> (2.24)</p> <p><b>Cultural Heritage</b> (2.25)</p> <p><b>Cultural Diversity</b> (2.26)</p>	<p>How do I analyze, interpret, and evaluate my own and others' creations?</p> <p>How do dramatic artists create and/or perform?</p>	<p><b>Students will</b></p> <p><b>Elements of Drama</b></p> <ul style="list-style-type: none"> <li>• apply knowledge and skills of elements of production (set, lighting, costumes, sound, spectacle) to interpret dramatic works.</li> <li>• apply knowledge and skills of elements of performance (e.g., monologue, dialogue, soliloquy, character motivation, voice, sensory recall) to interpret dramatic works.</li> <li>• describe how playwrights, directors, actors, and stage technicians apply elements of production and performance to create and perform dramatic works (e.g., formal theatre, film, television), to express ideas and emotions, and to achieve a desired effect or response from audiences.</li> <li>• apply knowledge and skills of dramatic elements (e.g., exposition, development, climax, reversal, denouement, protagonist, antagonist, tension, foreshadowing) to interpret dramatic works.</li> <li>• identify skills and training necessary for a variety of careers related to drama.</li> <li>• analyze descriptions, dialogue, and actions within scripts or texts to discover, describe, and justify character motivation.</li> <li>• describe, model, and use theatre etiquette.</li> </ul>

**High School Arts and Humanities**  
**Drama/Theatre**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• view two different productions of the same work (e.g., <i>Romeo and Juliet</i>, traditional version and Leonardo DeCaprio's, modern version). Discuss how set, lighting, costumes, sound, and spectacle change the impact of the work.</li><li>• develop monologues or dialogues based on dances, works of visual art, and/or musical pieces. Audiotape for self-evaluation.</li><li>• devise characters, stage directions, and props for an open script (one that has simple dialogue only).</li><li>• write and produce one-act plays in which stands are taken on current issues.</li><li>• create and perform scripts or scenes to change public opinion or point of view about current issues.</li><li>• analyze scripts for dramatic elements to describe and justify character motivation.</li><li>• use Internet or library to find information for careers in theatre. Research education institutions that offer courses. Create brochures to communicate information.</li><li>• construct a list of positive behaviors to follow as a member of an audience. Create Web pages that relate</li></ul>	

**High School Arts and Humanities  
Drama/Theatre**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Production</b> (2.22)</p> <p><b>Analysis of Form</b> (2.23)</p> <p><b>Aesthetics</b> (2.24)</p> <p><b>Cultural Heritage</b> (2.25)</p> <p><b>Cultural Diversity</b> (2.26)</p>	<p>How do I analyze, interpret, and evaluate my own and others' dramatic creations?</p> <p>How does drama/theatre reflect history and culture?</p> <p>How are the arts and humanities interrelated?</p>	<p><b>Students will</b></p> <p><b>Historical and Cultural Context</b></p> <ul style="list-style-type: none"> <li>• identify, analyze, and classify dramatic works from various periods, styles and cultures by considering cultural and symbolic clues such as style, setting, costume, movement, language, and staging.</li> <li>• analyze influences of history and culture in the writing, production, and performance of dramatic works.</li> <li>• compare how dramatic works from various cultures and historical periods reveal universal themes.</li> <li>• compare interactions between visual and performing arts and their audience.</li> </ul>

**High School Arts and Humanities**  
**Drama/Theatre**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare, orally and in writing, a contemporary monologue with a Shakespearean soliloquy.</li> <li>• analyze different aspects of theatre (e.g., setting, costume, movement, language) to determine which cultural period or style has been used in particular productions.</li> <li>• analyze influence of historical aspects on writing, production, and performance of plays.</li> <li>• compare plays from different cultures to show they share common, universal themes (e.g., love, friendship, tragedy, comedy).</li> <li>• choose historical events or literary excerpts and script for live presentations.</li> <li>• compare a historical play to a modern version (e.g., <i>Romeo and Juliet</i>, <i>West Side Story</i>). Write reviews describing which version is best for a modern audience (<i>WP-Transactive</i>).</li> <li>• compare a picture of a historical event (e.g., Penn’s Treaty with the Indians) with a film or documentary of the same event. E-mail friends and share information.</li> </ul>	<p>Marcus and Beverley, who are also enrolled in honors/AP English classes, will arrange contracts with their English teachers to read four novels or plays. They will view and critique videos or dramatic films based on those novels and produce videos of their critiques. The videos will be presented to their English and arts and humanities classes (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, participation, resources and materials, time, demonstration of knowledge, motivation, procedures and routines</i>).</p>

**High School Arts and Humanities**  
**Visual Arts**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Visual Arts</b> <b>(1.13)</b></p> <p><b>Production</b> <b>(2.22)</b></p> <p><b>Analysis of Form</b> <b>(2.23)</b></p> <p><b>Aesthetics</b> <b>(2.24)</b></p> <p><b>Cultural Heritage</b> <b>(2.25)</b></p> <p><b>Cultural Diversity</b> <b>(2.26)</b></p>	<p>Why do people create art?</p> <p>How do artists create?</p>	<p><b>Students will</b> <b>Elements, Principles, Processes, and Media</b></p> <ul style="list-style-type: none"> <li>• describe how visual artists use elements of art, principles of design, processes, media, and techniques to create art works.</li> <li>• analyze, interpret, and evaluate a variety of art works.</li> </ul>

# High School Arts and Humanities

## Visual Arts

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• describe how artists used elements of art and principles of design and media to convey messages reflective of time periods and/or cultures.</li><li>• research and report on the Kentucky clay deposits. Use natural clays to make utilitarian vessels.</li><li>• compose computer graphics from original drawings that use only symbols to signify personalities or ideas that are visually appealing and have compositional unity.</li><li>• interpret the intention of the artist for a work of art by explaining his/her use of media or composition.</li><li>• use Durer's grid to make drawings from life or to copy pictures.</li><li>• create original Esher-style drawings. Use color combinations to express different moods.</li><li>• analyze advertisements. Describe how the elements of art are used to support marketing strategies.</li><li>• explain basic elements of art used in cartoons, both editorial and humorous.</li></ul>	

**High School Arts and Humanities**  
**Visual Arts**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Visual Arts</b> <b>(1.13)</b></p> <p><b>Production</b> <b>(2.22)</b></p> <p><b>Analysis of Form</b> <b>(2.23)</b></p> <p><b>Aesthetics</b> <b>(2.24)</b></p> <p><b>Cultural Heritage</b> <b>(2.25)</b></p> <p><b>Cultural Diversity</b> <b>(2.26)</b></p>	<p>How do I analyze, interpret, and evaluate my own and others' creations?</p> <p>How do the arts and humanities reflect history and culture?</p> <p>What components lead me to develop an appreciation for the arts and humanities?</p> <p>How are the arts and humanities interrelated?</p>	<p><b>Students will</b> <b>Historical and Cultural Context</b></p> <ul style="list-style-type: none"> <li>• explain how visual art works reflect culture, time periods, and styles.</li> </ul>

# High School Arts and Humanities

## Visual Arts

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• write analyses of how artists of different cultures choose to use different elements of art, principles of design, and media to express the same concepts.</li><li>• compare portraits from ancient to modern times. Explain how media and techniques reflect the artist’s personal style. Draw self-portraits that reflect one of the styles.</li><li>• view videos of African rituals. Describe how dance, visual art, drama, and music are part of the total performance. Compare to musicals and opera.</li><li>• compare portraits of men or women from ancient to modern times. Explain how the values of societies are reflected in the use of media, techniques, and style.</li><li>• create drawings/paintings demonstrating traditions unique to given time periods and cultures. Use drawing software to generate products.</li><li>• use paint or oil pastels to create landscapes in the style of particular art periods, (e.g., Baroque, Impressionist, Modern, Renaissance).</li><li>• research the life of an artist. Interpret how his/her life experience is reflected in their work. Host an art show and provide written prompts to viewers.</li></ul>	



## History and Appreciation of Visual and Performing Arts Embedded Course Model

### Course Overview:

*History and Appreciation of Visual and Performing Arts* includes the disciplines of dance, music, drama/theatre, and visual arts combined with the humanities. In this course, students develop an understanding of the arts and the creative process from a historical perspective. Additionally, they gain an understanding of the interrelationships between experiences and emotions shared by all peoples, and recognize the arts as valuable contributions to humankind.

Many approaches can be used to present the content for this credit. In each case, students are provided opportunities for learning all content identified in the *Program of Studies*. The embedded model can be organized in a variety of ways. Students enrolled in an existing course could receive *History and Appreciation of Visual and Performing Arts* credit if the course is designated for that purpose. The designated class can cover all content as indicated in the *Program of Studies*, or the designated course might cover only a portion of the required content, and the remaining content would be embedded in courses all students are required to take.

For example, if the designated class was chorus, the choral music teacher could teach the music portion of the *Program of Studies* in addition to the normal content covered in chorus. The class would integrate appreciation and criticism with performance and creation. The focus would include the interrelationships among humanities themes, historical/cultural contexts, and the arts. Content for the other arts disciplines would be embedded in required courses (e.g., visual arts in American history, dance in physical education, drama in English) all students are required to take. Chorus would be the class designated to meet the requirement for *History and Appreciation of Visual and Performing Arts*. Therefore, the students could not receive an additional elective credit for that class. The teacher must be appropriately certified to teach the course designated to receive the credit.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair, are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the needs of all their students. Sample activities for *History and Appreciation of Visual and Performing Arts* are designed by discipline and can be blended in a variety of ways. Guiding questions and sample activities for the embedded course model are the same as those listed for the one-course model.

## **History and Appreciation of Visual and Performing Arts** **Kentucky Educational Television (KET) Distance Learning Model**

### **Course Overview:**

*Humanities Through the Arts* is a KET distance learning class. It is structured to include the required content as outlined in the *Program of Studies* for the high school graduation requirement, *History and Appreciation of Visual and Performing Arts*. Schools that have well-established humanities programs might use *Humanities Through the Arts* to supplement these classes by providing additional resources and activities.

### **Class Design:**

The class should be used in partnership with a certified classroom teacher who encourages participation, facilitates discussion, clarifies information for students, and helps them communicate via the Internet. Additionally, the classroom teacher grades notebooks and unit tests, using keys provided by KET. Classroom teachers have the option of modifying tests and providing additional material to tailor the class to suit the needs of their students. Daily lessons including notes for the students, examples of art and music, taped performances, and interviews with experts in the arts are provided by KET. Students communicate regularly through Internet mail service.

The format of the class is versatile and flexible. The class is delivered via satellite from 12:00 - 1:15 pm (EST) but can be taped and viewed at different times. The essential content is covered in the first fifty minutes of the class. After a five minute break, the remaining KET time is used to elaborate on or review material covered earlier, provide enrichment activities, give journal or writing assignments, address student call-ins, and/or visit Web sites. Classroom teachers can use the time following the break to lead the class in the direction of their own expertise.

The content is organized chronologically in 66 sessions, beginning with lineage-based (tribal) cultures, and moving forward through the 20th century. Students view dance, drama/theatre, music, visual arts, and literature in a variety of ways.

Materials are available through KET and are free of charge. Registration information for participating schools is provided below. Schools must register to receive mailings and an Internet password to access tests and answer keys. Daily agendas, a plan book for daily lesson plans, forum for publishing student discussion, galleries for music clips and works of art, resources for print material, and links of interest are available on the Web site.

### **Registration Information and Web Site:**

Linda Hofacker

1-800-333-9764

<http://www.dl.ket.org/humanities>

## **Arts and Humanities Glossary**

### **Dance/Movement**

**Actions:** What the body is doing. Includes locomotor and nonlocomotor movements.

**Alignment:** Body placement or posture; proper alignment lessens body strain and promotes dance skills.

**Asymmetry:** Uneven, irregular design.

**Binary form:** Two-part structure; AB

**Dance phrase:** A logical sequence of movements with an observable beginning, middle, and end.

**Dynamics:** The dance element which relates to how a movement is done.

**Energy:**

**Tension/relaxation:** Tension feels hard and tight; relaxation feels soft, loose and floppy.

**Flow:** Bound or free; flow has to do with the ongoing of movement when energy is released freely, we describe the movement as free flow, when energy is released in a controlled, restrained manner, the movement is bound.

**Weight:** Strength (force) or lightness.

**Even rhythm:** Movements of equal duration.

**Form:** Structure of dance compositions.

**General space:** The space shared by all; reaches beyond personal space.

**Kinesphere:** See personal space.

**Locomotor:** Movements that usually travel through space.

**Walk:** Steps are from one foot to the other, the weight being transferred from heel to toe.

**Run:** Compares to a fast walk, except that in the run the weight is carried forward on the ball of the foot.

**Hop:** A transfer of weight by a springing action from one foot to the same foot.

**Jump:** The transfer of weight from two feet to two feet.

**Leap:** A transfer of weight from one foot to the other foot, pushing off with a spring and landing on the ball of the foot, letting the heel come down, and bending the knee to absorb the shock.

**Skip:** A hop and a step on the same foot, alternating feet.

**Gallop:** A combination of a step and a leap, in an uneven rhythm, moving sideward, so the same foot is always leading.

**Slide:** A combination of a step close step, in an uneven rhythm, moving sideward, so the same foot is always leading.

**Metric rhythm:** The grouping of beats in a recurring pattern.

**Motif symbols:** Symbols that represent movements.

**Movement vocabulary:** All the actions the body can make.

## **Arts and Humanities Glossary**

### **Dance/Movement**

**Non-Locomotor:** Movements that stay in one place.

**Bend:** Involves closing up at body joints. It usually feels like it has a stopping point.

**Stretch:** Involves opening up the joints. Is more than just straightening, it feels like the energy keeps on going.

**Push and pull:** Involves action similar to a bend and stretch, but with a sense of resistance.

**Rise and sink:** Allows a change of levels between low and high.

**Shake:** A floppy wiggle or a tense vibration.

**Swing and sway:** Swinging is a very exhilarating, freeing movement. A fall, giving into gravity, followed by a rebound to a suspension point before the fall begins again. A sway is more controlled, even shifting of weight.

**Twist and turn:** Both involve rotation. In a twist, one end is fixed, so there is a limit to how much the other end can move.

**Personal Space:** Also called kinesphere. The space reached while stationary.

**Qualities:** Characteristics of a movement.

**Relationships:** The body's position relative to something or someone.

**Rondo form:** A dance structure with three or more themes where one theme is repeated, ABACAD....

**Space:**

**Direction:** Forward, backwards, sideways, up, down, etc.

**Size:** Large and small movements.

**Pathways:** Patterns we make as we move through the air on the floor.

**Level:** The vertical distance from the floor, high, medium or low.

**Shape:** The design of the body as it exists in space. Aspects of shape are open/closed, symmetrical/asymmetrical, angular/curved.

**Symmetry:** A balanced, even design.

**Ternary Form:** Three-part structure; ABA

**Time:** The relationship of one movement or part of a movement to another.

**Pulse:** The ongoing underlying beat.

**Speed:** How fast or slow the movement is.

**Duration:** The length of time the movement lasts; a long time, a short time or something in between.

**Rhythm:** Patterns made by arranging long and short sounds or strong and light sounds.

**Phrases:** Longer sequences of movement.

**Uneven rhythms:** Movements of unequal duration.

## **Arts and Humanities Glossary**

### **Drama/Theatre**

**Acoustics:** The quality of a room in respect to transmission of sound.

**Action:** The core of a theatre piece; the sense of forward movement created by the sense of time and/or the physical and psychological motivation of characters.

**Acting Styles:** A particular manner of acting which reflects cultural and historical influences.

**Acts:** The major sections of a play.

**Actor:** A male actor.

**Actress:** A female actor.

**Antagonist:** One who opposes and actively competes with another in a play, most often with the protagonist.

**Arena:** A theatre in which the stage is at the center of the auditorium.

**Artistic choices:** Selections made by theatre artists about situation, action, direction, and design in order to convey meaning.

**Audience:** Those who are not part of the production.

**Backdrop:** Painted curtain without fullness.

**Backstage:** Area behind scenery not visible to the audience.

**Blackout:** All stage lights go off simultaneously.

**Blocking:** The path formed by the actors movement on stage usually determined by the director with assistance from the actor and often written down in a script using commonly accepted theatrical symbols.

**Call Backs:** A second audition.

**Cast:** A group of people selected to portray characters.

**Center Stage:** The area in the center of the stage.

**Character:** A person portrayed in a drama, novel, or other artistic piece.

**Characterization:** Putting together all facets of a character.

**Choreography:** The movement to music in a play.

**Chorus:** A group of singers.

## **Arts and Humanities Glossary**

### **Drama/Theatre**

**Classical:** A dramatic form and production techniques considered of significance in earlier times, in any culture or historical period.

**Climax:** The point of greatest intensity in a series or progression of events in a play which is often the turning point of the plot and leads to some kind of resolution.

**Company:** Everyone associated with a production.

**Complication:** A factor, condition, and/or element that complicates the situation in a play.

**Conflict:** The struggle between opposing forces, ideas, or interests in a play.

**Contrasts:** Dynamic use of such things as movement/stillness, sound/silence and light/darkness.

**Costumes:** A style of dress characteristic of a particular country, period, or people, often worn in a play.

**Critique:** Evaluation or judgement.

**Criteria:** What you base your judgment.

**Cue:** Something that precedes the next action.

**Cut:** To stop action; delete

**Denouement:** The solution, clarification, and/or unraveling of the plot of a play.

**Development:** Progression of the plot or conflict in a play.

**Dialogue:** Conversation used by two or more characters to express thoughts, feelings, and actions.

**Diction:** Selection and pronunciation of words; clarity of speech.

**Director:** The one who brings all the elements together.

**Discovery:** A revelation, something that is suddenly revealed about a character or situation in a play.

**Downstage:** The area closest to the audience.

**Drama:** The art of composing, writing, acting, or producing plays; a literary composition intended to portray life character or tell a story usually involving conflicts and emotions exhibited through action and dialogue, designed for theatrical performance.

**Dramatic media:** Means of telling stories by way of stage, film, television, radio, or computer discs.

**Dramatic play:** Spontaneous dramatic enactment often done by children pretending or imitating while playing.

## **Arts and Humanities Glossary**

### **Drama/Theatre**

**Dress Rehearsal:** Same as performance without an audience.

**Duet:** Acting two people perform on stage.

**Electronic media:** Means of communication characterized by the use of technology; radio, computers (e.g., virtual reality).

**Elements of Drama:**

**Character:** Person or animal.

**Theme:** The basic idea of a play.

**Spectacle:** Visual

**Plot:** In literature, the action of the story; in theatre, the action of the story presented on stage.

**Spectacle:** A public performance.

**Theme:** The idea, point of view, or perception that binds together a work of art.

**Ensemble:** The dynamic interaction and harmonious blending of the efforts of the many artists involved in the dramatic activity of theatrical production.

**Environment:** Physical surroundings that establish place, time, and atmosphere/mood; the physical conditions that reflect and affect the emotions, thoughts, and actions of characters.

**Exposition:** The part of a play that introduces the theme, chief characters, and current circumstances.

**Falling action:** The series of events following the climax.

**Foil:** One that by strong contrast underscores the distinctive characteristics of another and, sometimes, prevents someone or something from being successful.

**Folktales:** Any story or tale passed on traditionally and based on superstition or false beliefs.

**Foreshadowing:** An indication beforehand of something that is about to happen.

**Front of house:** Box office and lobby of a theatre.

**Freytag pyramid:** A triangular diagram that shows how a plot or storyline progresses.

**Imaging:** A technique which allows the students to slow down and focus individually on an issue. The students, sitting quietly with eyes closed, allow pictures to form in their minds. These images may be motivated by bits of narration, music, sounds, smells, etc.

**Imitate:** To copy or mimic the actions, appearance, mannerisms, or speech of others.

**Improvisation:** The spontaneous use of movement and speech to create a character or object in a particular situation.

**Kinesthetic:** Resulting from the sensation of bodily position, presence, or movement.

## **Arts and Humanities Glossary**

### **Drama/Theatre**

**Mime:** Stylized pantomime which is more exaggerated than typical pantomime.

**Mimicry:** The practice of mimicing or imitating.

**Mirroring:** Copying the movement and/or expression or look of someone else exactly.

**Monologue:** A long speech made by one person, often called a soliloquy.

**Mood:** The emotional feeling of a play.

**Motivation:** An incentive or an inducement for further action for a character.

**Myths:** Traditional stories dealing with supernatural beings, ancestors, or heroes.

**Pantomime:** A situation where a performer relies totally on gesture, facial expression, and movement, rather than speech, for enactment of his material.

**Playwright:** A person who writes a play.

**Projection:** How well the voice carries to the audience.

**Prompt:** The book or help; the prompter is the one who assists actors in remembering their lines.

**Props:** Any article, except costume or scenery, used as part of a dramatic production.

**Proscenium:** The area located between the curtain and the front edge of the stage.

**Protagonist:** The leading character in a play or other literary work..

**Reader's theatre:** Where two or more oral readers interpret a characterized script with the aim of stimulating the audience to imaginatively experience the literature.

**Reversal:** A change in fortune for a character from better to worse.

**Rising action:** A series of events following the initial incident and leading up to the dramatic climax.

**Role:** The characteristics and expected social behavior of an individual in a given position (e.g., mother, employer). Role portrayal is likely to be more predictable and one-dimensional than character portrayal.

**Role playing:** Improvising movement and dialogue to put oneself in another's place in a particular situation and often to examine the person(s) and/or situation(s) being improvised.

**Royalties:** Monies paid for permission to stage a play.

**Scene:** A small section or portion of a play.

**Scenario:** An outline of a hypothesized or projected chain of events or plot for a dramatic or literary work.



## **Arts and Humanities Glossary**

### **Drama/Theatre**

**Scenery:** The painted backdrop on a theatrical stage.

**Script:** The written dialogue, description, and directions provided by the playwright.

**Sensory recall:** Recalling an event that pertains particularly to one of the five senses.

**Set or Setting:** The scenery constructed for a theatrical performance.

**Situation:** A combination of circumstances at a given moment.

**Soliloquy:** A speech where a character reveals his thoughts in the form of a monologue without directly addressing the listener.

**Space:** A defined area. Fore, middle, and background in a two dimensional work.

**Special effects:** Visual or sound effects used to enhance a theatrical performance.

**Stage business:** Actions or behavior of an actor on stage used to give information, enhance character, define focus, or establish atmosphere.

**Stage directions:** Directions written into a script that provide assistance to the actors and director of a theatrical performance.

**Staging:** That which is created on stage while directing a theatrical presentation.

**Storyline:** The plot or plan of action.

**Storytelling:** The act of telling a story in the oral tradition.

**Tension:** The atmosphere created by unresolved, disquieting, or inharmonious situations that human beings feel compelled to address.

**Text:** The basis of dramatic activity and performance; a written script or an agreed-upon structure and content for an improvisation.

**Theatre:** The imitation/representation of life, performed for other people; the performance of dramatic literature, drama, the milieu of actors and playwrights, the place, the place that is the setting for dramatic performances.

**Turning point:** The climax or high point of a story.

**Thrust:** A stage that extends beyond the proscenium arch and is usually surrounded on three sides by seats.

**Understudies:** Actors who are able to play a given role in an emergency.

**Upstage:** Area furthest away from the audience, toward the backstage wall.

**Voice:** The combination of qualities an actor uses such as articulation, phrasing, pronunciation, etc.

# Arts and Humanities Glossary

## Music

A capella: Unaccompanied vocal music.

Al fine: To the finish.

Alto: The lowest female voice or unchanged boy's voice.

Aria: An air, song, or tune.

Arpeggio: Playing or singing the notes of a chord consecutively as on a harp.

Balance: The state of equilibrium where all the component parts of the music create a unified whole.

Bar lines: Lines dividing measures on the staff.

Bass: The male voice with the lowest range. Also the lowest instrumental voices.

Bass clef: Symbol placed on the five-line staff in traditional notation indicating the pitch of the notes and locating F on the fourth line from the bottom.

Beat: The regular repeated pulsation in music.

Binary: Designates a form or structure in music that has two distinct sections: part A and part B (AB form). "Greensleeves" is an example.

Call and response: A song style that follows a simple question-and-answer pattern in which a soloist leads and a group responds.

Chord: Three or more different tones played or sung at the same time.

Chordal: Made up of chords.

Chromatic modulation: The process of changing from one key to an unrelated key in a composition.

Chromatic scale: A scale consisting of successive half-steps.

Clef: A character used to determine the name and pitch of the notes on the staff to which it is prefixed.

Coda: A few measures or a section added to the end of a piece of music to make a more effective ending.

Common time: (C) Meter in which a measure consists of four beats and a quarter note has a value of one beat.

Compose: The act of inventing or creating music or the result of this creation.

# Arts and Humanities Glossary

## Music

Counter melody: An alternate melody sung along with and as a companion to the main melody.

Da capo: From the beginning.

Dal segno: Repeat from the sign.

Descant: A melodic voice part pitched higher than and concurrent with the melody.

Dissonance: When there is a feeling of instability or tension in the texture of a piece of music.

Dotted half-note: In traditional notation, adding a dot after a note increases its value by half (e.g., since a half-note is frequently given two beats, a dot after it gives it three).

Duple: Double rhythm of two beats to the measure.

Dynamic markings: Indicates the degrees of intensity or loudness in musical tones.

Elements of music:

Dynamics: Degrees of loudness.

Crescendo: (<) Gradual increase in volume.

Decrescendo: (>) Gradual decrease in volume.

Forte: (*f*) Loud or strong.

Fortissimo: (*ff*) Extremely loud.

Mezzo-Forte: (*mf*) Medium loud.

Mezzo-Piano: (*mp*) Medium soft.

Piano: (*p*) Soft

Pianissimo: (*pp*) Very soft.

Form: The overall structural organization of a music composition (e.g., ab, aba, call and response, rondo, theme and variations, sonata-allegro) and the interrelationships of music events within the overall structure.

AB: A form made up of two contrasting sections, each of which may or may not be repeated

ABA: A form made up of a principal section which is repeated after the completion of a contrasting section.

Rondo: An instrument piece in which the leading theme is repeated, alternately with others.

Round: A composition for two or more voices in which one voice enters after another in exact imitation of the first.

Sonata-Allegro Form: A form made up of an opening section called the exposition in which major themes are presented, a middle section called the development in which thematic material undergoes a variety of alterations, and a third section called the recapitulation in which the material of the exposition is restated.

Theme and variations: A compositional form where an initial theme is stated and each section.

Harmony: Two or more tones sounding together.

Melodic shape/Melody: The rational progression of single tones.

Rhythm: The organization of sound in time; the temporal quality of sound.

# Arts and Humanities Glossary

## Music

**Tempo:** The speed of the beat in music..

**Allegro:** A rapid, vivacious movement, literally “happy.”

**Andante:** An easily flowing movement in moderate time, literally a “walking” speed

**Timbre:** The character or quality of a sound that distinguishes one instrument, voice, or other sound source from another.

**Ensemble:** Playing together of several performers.

**Fermata:** ( ) A pause or hold of variable length determined by the performer or conductor.

**Flat:** (b) A musical sign that lowers a pitch 1/2 step.

**Fusion:** The combination of jazz and rock.

**Genre:** A type or category of music (e.g., sonata, opera, oratorio, art song, gospel, suite, jazz, madrigal, march, work song, lullaby, barbershop, Dixieland.).

**Grand staff:** A staff that includes the treble and bass staff and the ledger lines between.

**Graphic notation:** The use of various symbols, colors and shapes to indicate the melody and rhythm of a composition.

**Half-step:** The smallest distance between pitch above or below any given pitch on the keyboard, such as C to C# or F to E.

**Home tone:** Commonly used term for the first or key-tone of any scale, same as tonic.

**Improvise:** To create music spontaneously.

**Interval:** The distance between any two pitches and/or notes.

**Key:** The basic scale and tonality of a composition.

**Key signature:** The sharps (#) or flats (b) placed at the beginning of a composition or line of music denoting the scale on which the music is based.

**Legato:** Smooth and connected, lit, “bound together”.

**Major:** Tonality based on a major scale.

**Major scale:** A scale built on the formula of an ascending pattern of two whole steps, one half step, three whole steps, one half step.

**Melodic motif:** A short musical phrase used in development of imitation.

**Meter:** The grouping in which a succession of rhythmic pulses or beats is organized, indicated by a meter signature at the beginning of a work.

# Arts and Humanities Glossary

## Music

**Meter signature:** An indication of the meter of a musical work, usually presented in the form of a fraction, the lower number of which indicates the unit of measurement and the upper number of which indicates the number of units that make up a measure.

**MIDI:** Acronym for Musical Instrument Digital Interface. Standard specifications that enable electronic instruments such as the synthesizer, sampler, sequencer, and drum machine from any manufacturer to communicate with one another and with computers.

**Minor:** Tonality based on a major scale.

**Minor scale:** A scale built on a formula of an ascending pattern of whole step, half step, whole, whole, half, whole, whole.

**Monophonic:** A texture featuring a single unaccompanied melodic line.

**Motif:** A small melodic fragment repeated within a melody.

**Musical forms:** A concept of organization governing the order, character, meter, and key of a composition.

**Natural:** (  $\natural$  ) A musical sign that cancels a sharp or flat. A natural note is one that is neither sharpened or flattened.

**Notate/Notation:** The representation of musical tones by written characters.

**Notes:** Symbols of Sound.

**Whole:** A note that receives 4 counts when 4 is the bottom number of the meter signature.

**Half:** A note that receives 2 counts when 4 is the bottom number of the meter signature.

**Quarter:** A note that receives 1 count when 4 is the bottom number of the meter signature.

**Eighth:** A note that receives 1/2 count when 4 is the bottom number of the meter signature.

**Sixteenth:** A note that receives 1/4 count when 4 is the bottom number of the meter signature.

**Octave:** The distance between notes of the same name and eight letter notes higher or lower; for example; A B C D E F G A

**Opera:** Sung drama.

**Ostinato:** A short melodic or rhythmic pattern that is repeated over and over to form an accompaniment.

**Overture:** A musical introduction to an opera, oratorio, etc. A concert overture is an independent composition.

**Pentatonic scale:** Any five-tone scale. Often used as a scale similar to the pattern of the black keys on the piano.

**Percussive sounds:** Any sounds produced by striking, shaking and/or scraping.

# Arts and Humanities Glossary

## Music

**Phrasing:** Dividing musical sentences into melodic and/or rhythmic sections, similar to the effect of punctuation in language.

**Pitch:** The highness or lowness of a tone, as determined by the frequency of vibrations per second.

**Pitch numbers:** The numbers 1 through 8 associated with the tones of the scale to assist in music reading and in ear training.

**Polyphonic:** A texture in which two or more melodies sound at the same time.

**Quartet:** Four performers.

**Question and answer:** A formal structure where each successive phrase or section is formed as a response to the preceding one.

**Quintet:** Five performers.

**Recitative:** In opera and oratorio, sung narration.

**Repeat signs:** Signifies that the music between double-dotted bars is to be repeated.

**Rests:** A pause or interval of silence between two notes.

**Scale:** A sequence of tones, usually within an octave, used as the basis of a composition.

**Score:** A notation showing all the parts of a musical composition.

**Sequence:** A pattern within a melody that is repeated at a higher or lower pitch.

**Sforzando:** (*sfz*) Forcing, i.e., with a sudden and strong accent on a single note or chord.

**Sharp:** A musical sign that raises a pitch  $1/2$  step.

**Signatures:** The flats and sharp at the head of the staff indicating the key.

**Solo:** One performer.

**Slur:** To perform two or more notes legato. Also, a curved line placed above or below two or more. Notes of different pitch to indicate that they are to be performed in legato style.

**Soprano:** The highest female voice.

**Staccato:** Detached sounds, indicated by a dot over or under a note. The opposite of legato.

**Staff:** The five parallel lines on which music is written.

# Arts and Humanities Glossary

## Music

**Standard notation:** Music written on one or more staves, using traditional note symbols and clefs to indicate pitch locations.

**Staves:** Plural of staff.

**Style:** The distinctive or characteristic manner in which the elements of music are treated. In practice, the term may be applied to, for example, composers (the style of Copland), periods (Baroque style), media (keyboard style), nations (French style), form or type of composition (fugal style, contrapuntal style), or genre (operatic style, bluegrass style).

**Symbolic notation:** The system of expressing musical sounds through the use of written symbols called notes.

**Syncopation:** A temporary shifting of the accent in music so that the stress falls between the strong beats.

**Tenor:** The highest male voice.

**Ternary:** Designates a form or structure in music that has three sections, with the first section repeated after the second section (ABA form).

**Texture:** The number of simultaneous sounding lines. The manner in which horizontal pitch sequences are organized (homophonic-monophonic-polyphonic).

**Time:** The division of the measure into equal parts.

**Tonality:** The term used to describe the organization of the melodic and harmonic elements to give a feeling of a key center or a tonic pitch.

**Tonal syllables:** Syllables used to facilitate reading and singing of the scale. The commonly used syllables are do, re, mi, fa, sol, la, ti, and do. The practice of reading and singing with syllables is also known as solfege.

**Tonic:** The first tone or key-tone of any scale.

**Treble:** The upper part. Sung pitches generally above middle C.

**Treble clef:** Symbol placed on the five-line staff in traditional notation indicating the pitch of the notes and locating G on the second line from the bottom.

**Triads:** Three-tone chords.

**Two-part songs:** Songs written for performance by two distinct voices.

**Unison:** Singing or playing the same notes by all singers or players, either at exactly the same pitch or in a different octave.

## **Arts and Humanities Glossary**

### **Music**

Verse-chorus: A refrain that is repeated.

Voice:

Soprano: the highest pitch of human voice.

Alto: the lowest female voice.

Tenor: the highest male voice.

Bass: the lowest pitch of human voice.

Whole step: A distance of two half steps in the same direction, such as between C and D or F# and E.

Whole tone scale: A scale made up entirely of whole tones (whole steps).



# Arts and Humanities Glossary

## Visual Arts

**Abstract:** Art that looks as if it contains no recognizable form.

**Acrylic paint:** A water based paint that has a polymer binder and dries to a permanent covering.

**Aesthetic:** The study or Theory of the beautiful in art.

**Alternating rhythm:** Repeating motifs but changing the position, content or spaces between them.

**Analyze:** In visual art, examining the unique features of a work of art as they relate to the elements of art and principles of design.

**Art criticism:** The process and result of critical thinking about art. It usually involves the description, analysis and interpretation of art, as well as some kind of judgement.

**Assemblage:** Sculpture consisting of many objects and materials that have been put together.

**Asymmetry:** A way of organizing the parts of a design so that one side differs from the other without destroying the overall balance and harmony. Also known as informal balance.

**Background:** Part of the picture plane that seems to be farthest from the viewer.

**Canvas:** A tightly stretched cloth surface on which to paint.

**Ceramics:** The process of creating functional and nonfunctional art forms made of clay.

**Chiaroscuro:** Using contrast of light and dark to create the illusion of three-dimensional form on a two-dimensional surface.

**Collage:** Artwork made by pasting pieces of paper or other materials to a flat surface.

**Color groups:** Sometimes known as color families or relationships. Groupings of colors that have certain likenesses or differences.

**Color theory:** As used in the core content, the study of pigmented color (subtractive color theory) as opposed to light (additive color theory). The color wheel is based on Goethe (1810/1970) with red, yellow, blue as primaries which when mixed form the secondaries of orange, green and violet.

**Analogous:** Colors that are next to each other on the color wheel, and are closely related, e.g., red, red-orange, orange etc.

**Complementary:** Color group that uses colors opposite from each other on the color wheel. Red and green, blue and orange, yellow and violet have the greatest degree of contrast.

**Cool colors:** The color group that is associated with the sky, water, and forests such as blue, green and violet. Cool colors appear to recede in space.

**Hues:** The property of color that is the pure color or the name for the color that has not been altered.

**Intensity:** The property of a color that refers to the brightness or dullness of a color.

**Monochromatic:** Tones of one color in addition to the main hue.

# Arts and Humanities Glossary

## Visual Arts

Neutral colors: Black, white, gray (and browns). Colors may be “neutralized” by mixing complements.

Primary colors: Hues that cannot be produced by a mixture of other hues (red, yellow, blue).

Secondary colors: Violet, Green, Orange. Hues that can be produced by mixing the primary hues. Red and blue make violet. Yellow and blue make green. Red and yellow make orange.

Shades: When black is added to a hue to darken a color.

Tertiary Colors: Those colors that fall between primary and secondary colors on the color wheel.

Tints: Obtained by adding white to the hue to lighten a color.

Triadic: The color group that uses three colors of equal distance from each other on the color wheel, forming an equilateral triangle, i.e. red, yellow, blue.

Value: In color theory, value refers to the lightness (tint) or darkness (shade) of a color, i.e. pink is a tint of red.

Warm colors: The color group that is associated with fire, the sun, the earth such as red, orange and yellow. Warm colors appear to advance in space.

Color wheel: A tool for organizing color.

Composition: An arrangement of the elements of art and principles of design in a work.

Computer design: Any visual expression (original art, functional graphics, scientific illustrations) created with a computer.

Describe: This process in responding to art work refers to art elements present in a work. It also refers to when, where, and by whom the work was done. Often this information is given beneath the art work in the assessment booklet.

Depth: Showing distance in a work of art.

Dimensional:

Two (2-D): A work of art that has length and width.

Three (3-D): A work of art which has length, width, and depth.

Elements of art: The basic components of visual communication. They include line, space, shape/form, value, color, texture.

Color: The results of the reflection or absorption of light by a surface.

Form: An element of art that is three-dimensional and encloses volume.

Line: The element of art which refers to the continuous mark made on some surface by a moving point (curved, zigzag, straight, etc).

Shape: The element of art that is an enclosed space determined by other art elements such as line, color, value and texture. It is a two-dimensional element.

Space: The element of art that refers to the distance or area between, around, above, below, or within things (positive and negative).

Texture: The element of art that refers to the surface quality or “feel” of an object, its roughness, smoothness, softness.

Value: The element of art that refers to the degree of lightness or darkness.

## Arts and Humanities Glossary

### Visual Arts

**Fibers:** A natural or synthetic filament, such as cotton or nylon, which can be used in the construction of textiles.

**Focal point:** That area in a composition at which the emphasis is greatest (the center of interest).

**Foreground:** Part of a picture which appears closest to the viewer and often is at the bottom of the picture.

**Formalist:** The effective organization of the elements and principles of design.

**Found objects:** Common or unusual objects that may be used to create a work of art.

**Functional art:** Functional objects such as dishes and clothes; often these objects are highly decorated and show expert craftsmanship.

**Gradation:** The principle of art that refers to a way of combining art elements by using a series of gradual changes in those elements, (transition)

**Graphic design:** Visual communication intended to be used with commercial printing/reproductive processes in both two and three dimensional presentations.

**Impressionistic:** Shows the effects of light and atmospheric conditions of an artist's work that spontaneously captures a moment in time.

**Interpret:** This process in responding to art work identifies the feelings, moods, and ideas communicated by the work of art. It also calls for the investigation of the influence of time and place upon the artist who created the work of art.

**Landscape:** The subject matter category in which the main theme of the work is natural scenery such as mountains, valleys, trees, rivers and lakes.

**Media:** The material used by an artist to produce art (i.e. paint, clay, fibers).

**Middleground:** Area in a picture between the foreground and the background.

**Mimetic:** The term for art work whose purpose is to "mimic" or imitate nature.

**Mixed media:** Any art work which uses more than one medium.

**Mobiles:** A sculpture which has free moving parts.

**Motif:** Repeated unit to create visual rhythm.

**Mural:** The principle of design that combines elements to produce the look of action or to cause the viewer's eye to sweep over the work in a certain matter.

**Naturalistic:** Art work that looks like the subject it is trying to represent.

# Arts and Humanities Glossary

## Visual Arts

**Papier-mache:** Sculpture medium that uses paper or rags dipped in wheat paste (wallpaper paste) over an armature.

**Negative space:** The areas around images in a two or three-dimensional shape/form which defines those objects.

**Oil pastels:** This media is similar to chalk pastels but it has an oil base that makes it stick to the surface better and has more brilliant color.

**Pastels:** Pigments pressed into sticks and used as a dry medium on paper; sometimes referred to as hard or soft chalk pastels.

**Perspective:** A method of representing three-dimensional objects on a two-dimensional surface, giving the illusion of depth in space. Linear perspective deals with drawing and aerial perspective attempts to use color and value changes to get the effect of distance.

**Portrait:** A subject matter category in which the main purpose of the art work is to communicate a likeness of an individual or group of individuals.

**Positive space:** The primary images in a work of art, as opposed to the background or unoccupied space.

**Principles of design:** Concepts for organizing elements of art into successful art forms.

**Balance:** The principle of design that refers to the visual equalization of the elements in a work of art. Balance may be either symmetrical or asymmetrical.

**Contrast:** A principle of art, closely related to emphasis, refers to a way of combining art elements to stress the differences between the elements. Thus a painting may have bright colors which contrast with dull colors, or angular shapes which contrast with rounded shapes.

**Emphasis:** The principle of design that is concerned with dominance. The development of a main idea or center of interest (focal point).

**Movement:** The principle of design that combines elements to produce the look of action or to cause the viewer's eye to sweep over the work in a certain manner.

**Pattern:** The principle of design that is the repetition of shapes, lines, colors, etc. In a design.

**Repetition:** The principle of art that refers to a way of combining art elements so that the same elements are used over and over to achieve balance and harmony.

**Rhythm:** The principle of design that refers to a way of combining art elements to produce the look and feel of movement, especially with a visual tempo or beat.

**Proportion:** The principle of design that deals with the relationship in size of one component of a work of art to another.

**Unity:** The principle of design that refers to the quality of wholeness or oneness that is achieved through the effective use of the elements and principles of design (harmony).

**Variety:** The principle of art that refers to a way of combining art elements in involved ways to achieve intricate and complex relationships.

**Printmaking:** The process of reproducing images on a flat surface. Three types of print processes are relief block (linoleum, wood), intaglio (etching, engraving) and stencil (silkscreen).

# Arts and Humanities Glossary

## Visual Arts

Processes: Art methods/media used for visual communication in a variety of art forms.

Radial balance: Kind of balance where the elements branch out from a central point.

Random rhythm: Visual rhythm in which a motif is repeated in no apparent order.

Realistic: Art work that attempts a photographic likeness of the subject matter. Sometimes refers to the choice of subject that is commonplace as opposed to courtly and idealized.

Regular rhythm: Visual rhythm created through repeating the same motif with the same distance between placements.

Still life: The subject matter category in which the main purpose of the art work is to show inanimate objects.

Styles: A characteristic manner of presenting ideas and feeling in visual form. May refer to an individual artist or a group of artists whose work has certain features in common.

Symbolic: Works of art that have forms, images, or subjects representing meanings other than the ones with which they are usually associated.

Symmetry: A way of organizing the parts of a design so that one side duplicates or mirrors the other.

Tempera paint: Water based paint that traditionally had pigment mixed with an egg binder. Sometimes called poster paint, this opaque medium now has a chemical binder.

Textiles: Art works that are created from natural or man made fibers. Weaving, basketry, stitchery and knitting are just a few of the processes involved in textile design.

Transition: The principle of art that refers to a way of combining art elements by using a series of gradual changes in those elements, (gradation).

Vanishing point: In perspective drawing, a point or points on the horizon where receding parallel lines seem to meet.

Watercolor: Transparent, water based paint that uses gum Arabic as a binder.

## Arts and Humanities Teacher Resources

### Publications: Books

Brady, Martha, and Patsy Gleason. *Artstarts: Drama, Music, Movement, Puppetry, and Storytelling Activities/Grades K-6*. Englewood, CO: Teacher Ideas Press, 1994.  
ISBN 1-56308-148-2.

California State Department of Education. *Visual and Performing Arts Framework for California Public Schools: Kindergarten through Grade Twelve*. Sacramento: California State Department of Education, 1989.

Clark, Michael. *Cultural Treasures of the Internet*, 2<sup>nd</sup> Edition. Upper Saddle River, New Jersey: Prentice Hall, 1997.  
ISBN: 0-13-264524-6.

*Dictionary of the Arts*. New York: Facts on File, 1994.  
ISBN 0-8160-3205-X.

Selwyn, Douglas. *Living History in the Classroom: Integrative Arts Activities for Making Social Studies Meaningful*. Tucson, AZ: Zephyr Press, 1993.

Snyder, Sue. *Art Smart: Arts Activities for Classroom Teachers*. West Norwalk, CT: Ideas Press, 1997.

Wheeler, Nedra, and Larry Ruff. *Teacher's Guide to Integrated Curriculum*. Pippa Valley Printing, Pippa Passes, KY: Pippa Valley Printing, 1996.

### Publications: Directories

Association for the Advancement of Arts Education. *Directory of Professional Arts Resources for Schools Teachers and Students: pre-k-12*. Cincinnati, OH: Author, 1998.  
Association for the Advancement of Arts Education 655 Eden Park Dr., Suite 730, Cincinnati, OH 45202 (513) 721-2223 <http://www.aaae.org>.

Benjamin, John. "An Artist in our Midst:" *Kentucky's Artist in Residence Program and What Makes it Work*. Frankfort, KY: Kentucky Arts Council, 1991.

Fayette County Schools. *Cultural Alliance for Kentucky Educational Support Resource Guide*. Lexington, KY: Fayette County Schools, 1998.  
Phil Shepherd, Fine Arts Coordinator, Fayette County Schools, 701 East Main Street, Lexington, KY 40502 (606) 281-0221 FAX (606) 281-0106 PSHEPHER@fayette.k12.state.ky.

Jefferson County Public Schools. *Jefferson County Schools Cultural Resources Guide*. Ghens Academy, Louisville, KY: Jefferson County Public Schools, 1998.  
Jefferson County Public Schools 4425 Preston Highway, Louisville, KY 40213 (502)485-3951 FAX (502) 485-3897 lholland@jefferson.k12.ky.us.

## Arts and Humanities Teacher Resources

Kentucky Arts Council. *Directory of Kentucky Performing Artists*. Frankfort, KY: Kentucky Arts Council, 1995.

Lori Meadows, Kentucky Arts Council, 31 Fountain Place, Frankfort, KY 40601 (502) 564-3757  
FAX (502)564-2839 lmeadows@arts.smag.state.ky.us.

Kentucky Center for the Arts. *Arts Education Showcases Arts Resource Directory*. Louisville, KY: Kentucky Center for the Arts, 1997.

Debbie Shannon, Kentucky Center for the Arts, Five Riverfront Plaza, 501 West Main Street, Louisville, KY 40202 (502)562-0100 FAX (502)562-0105.

Kentucky Historical Society. *An Educator's Guide to Kentucky Museums*. Frankfort, KY: Kentucky Historical Society, 1995.

Kentucky Historical Society Old State Capitol, PO Box 1792, 40602-1792 (502)564-3016 FAX (502)564-4701 vicky.middleswarth@mail.state.ky.us.

Kentucky Arts Council. *Kentucky Arts Council Artists in Education Roster of Approved Artists*. Frankfort KY: Kentucky Arts Council, 1998.

John Benjamin, Kentucky Arts Council, 31 Fountain Place, Frankfort, KY 40601 502 564-3757  
FAX (502)564-2839 jbenjamin@arts.smag.state.ky.us.

Kentucky Arts Council.. *Kentucky Arts Council Program Guidelines and Applications*. Frankfort, KY: Kentucky Arts Council, 1998.

Gerri Combs, Executive Director, Kentucky Arts Council, 31 Fountain Place, Frankfort, KY 40601 (502) 564-3757 FAX (502) 564-2839. gcombs@arts.smag.state.ky.us.

Kentucky Arts Council. *Kentucky Presenters Directory*. Frankfort, KY: Author, 1998.

Lori Meadows, Kentucky Arts Council, 31 Fountain Place , Frankfort, KY 40601 (502) 564-3757  
FAX (502) 564-2839 lmeadows@arts.smag.state.ky.us.

Kentucky Department of Education. *Very Special Arts Kentucky (VSAP) Artist Roster*. Frankfort, KY: Author, 1998.

Mary-Claire O'Neal, Program Director, Very Special Arts, Kentucky Department of Education, 8<sup>th</sup> Floor, Capital Plaza Tower, Frankfort, KY 40601 (502) 564-4970 FAX (502) 564-6721 moneal@kde.state.ky.us.

Kentucky Heritage Council. *Teaching with Historic Places in Kentucky*. Frankfort, KY: Author, 1998.

Becky Shipp, Kentucky Heritage Council, 300 Washington Street, Frankfort, KY 40601 (502) 564-7005 FAX (502)564-5820 BSHIPP2@ mail.state.ky.us.

Kentucky Historical Society. *Teacher's Guide to the Festival of Kentucky Folklife*. Frankfort, KY: Author, 1998.

Bob Gates, Kentucky Folklife Program, PO Box 1792, Frankfort, KY 40602-1792 (502) 564-0472  
FAX (502) 564-4701 bob.gates@mail.ky.state.us.

## Professional Organizations: Kentucky

Appalshop

306 Madison Street, Whitesburg, KY 41858 606-633-01108

FAX (606)633-1009 Appalshop@aol.com

Forward in the Fifth

Ginny Eager, Executive Director, 433 Chestnut Street, Berea, KY 40403

(606)986-1299 FAX 606-986-1299 geager@fif.org

## Arts and Humanities Teacher Resources

### Kentucky Alliance for Arts Education

Robyn Swanson, 221 St. Albans Drive, Bowling Green, KY 42103 (502) 745-5925

### Kentucky Association for Gifted Education

Dr. Julia Roberts, Center for Gifted Studies, Western Kentucky University,  
1 Big Red Way, Bowling Green, KY 42101 (502)745-6323 FAX (502) 745-6279  
julia.roberts@wku.edu

### Kentucky Association of School Councils

Ronda Harmon, P.O. Box 784, Danville, KY 40423 (606) 238-2188  
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### Kentucky Association for Environmental Education

Jay Webb, #1 Game Farm Road, Frankfort, KY 40601 (502) 564-4762  
FAX (502) 564-6508 jaywebb2@mail.state.ky.us

### Kentucky Association of Supervision in Curriculum Development

Wayne Starnes, Dayton Independent Board of Education, 200 Clay Street, Dayton,  
KY 41074 (606)292-3993 wstrnes@dayton.k12.ky.us

### Kentucky Center for the Arts

Debbie Shannon, Five Riverfront Plaza, 501 West Main Street, Louisville, KY 40202  
(502) 562-0100 FAX (502) 562-0105

### Eastern Kentucky University Department of Foreign Languages and Humanities

Dr. Anne Brooks, Department of Foreign Languages and Humanities Case, Annex  
368, Eastern Kentucky University, Richmond, KY 40475 humbrook@acs.eku.edu  
<http://www.arh.eku.edu/flh/homepage.htm> Kentucky Collaborative for Teaching and Learning,

### Different Ways of Knowing (DWoK)

Linda Hargan, Kentucky Collaborative for Teaching and Learning, Professional  
Building East, 31001 Breckenridge Lane, Suite 1B, Louisville, KY 40220  
(800) 995-3965 linda@ky-dwok.org

### Kentucky Communications Association

Alyce Grover, 808 Woodline, Somerset, KY 42503 (606) 679-8501  
FAX (606) 679-5139 aagrovoo@pop.uky.edu

### Kentucky Council for Social Studies

Dr. Laura Clifford, Jefferson County Public Schools, Gheens Academy  
4425 Preston Highway, Louisville, KY 40213 (502) 485-3054 FAX (502) 485-8976  
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### Kentucky Council for Teachers of English/Language Arts

Betty Shiffman, Spalding University, 851 S. 4th Street, Louisville, KY 40203  
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## **Arts and Humanities Teacher Resources**

### Kentucky Geographic Alliance

University of Louisville, Dr. Keith Mountain, Department of Geography, Louisville,  
KY 40292 (502) 852-6844 FAX (502) 852-4560

### Kentucky Humanities Council

206 East Maxwell Street, Lexington, KY 40508 (606) 257-5932  
FAX (606) 257-5933 @pop.uky.edu,

### Kentucky Resource Center for Heritage Education

Becky Shipp, Kentucky Heritage Council, PO Box 1792, Frankfort, KY 40602  
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### Kentucky Staff Development Council

Nancy Hack, Jefferson County Schools, Gheens Academy, 4425 Preston Highway,  
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### Very Special Arts Kentucky (VSAK)

Mary-Claire O'Neal, Program Director, Very Special Arts, Kentucky Department of  
Education, 8<sup>th</sup> Floor, Capital Plaza Tower, Frankfort, KY 40601 (502) 564-4970; 824  
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### University of Louisville Division of Humanities

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University of Louisville, Louisville, KY 40292 (502)852-7149 (502)852-0078  
eowise@ulkyvm.louisville.edu

## **Professional Organizations: Regional and National**

### Alliance for Arts Education (AAE) Network

John F. Kennedy, Center for the Performing Arts, Washington, DC 20566  
(202) 416-8800 kcaen@mail.kennedy-center.org

### Americans for the Arts

Kelly White, 1000 Vermont Avenue NW, 12th Floor, Washington, DC 20005  
(202)371-2830 FAX (202) 371-0424; One East 53rd Street, New York, NY 10022  
(212)223-2787 FAX (212) 980-4857

### ASCD Arts Education Network

Dr. Gene Van Dyke, Director, The Arts in Education Network Facilitator, 333 Market Street,  
Harrisburg, PA 17126 gvandyke@northstar.csiu.k12.pa.us

### Artsgenesis

New York Office: 310 East 46th Street, Suite 26J, New York, NY 10017  
(212) 696-ARTS

## Arts and Humanities Teacher Resources

### Asian American Arts Alliance

74 Varick St., suite 302, New York, NY 10013 (212) 941-9208  
artsalliance@earthlink.net

### Association for the Advancement of Arts Education

655 Eden Park Dr., Suite 730, Cincinnati, OH 45202

### The Getty Education Institute for the Arts

1200 Getty Center Drive, Suite 600, Los Angeles, CA 90049-1683 (310) 440-7315  
mnowatt@getty.edu

### Goals 2000 Arts Education Partnership

One Massachusetts Avenue, NW, Suite 700, Washington, DC 20001-1431  
(202) 326-8693 aep@ccso.org

### International Bluegrass Music Association

207 East Second Street, Owensboro, KY 42303, (502)684-9025, (888) 438-4262  
FAX (502) 686-7863 ibma1@occ-uky.campus.mci.net

### National Arts Education Research Center

32 Washington Place-Room 52, New York University School of Education,  
New York, NY 10003 (212) 998-5060

### National Arts Education Research Center School of Music University of Illinois,

1114 W. Nevada Street, Urbana, IL 61801  
(217) 333-1027 crme@uiuc.edu

### National Coalition for Education in the Arts (NCEA)

c/o Music Educators National Conference, 1806 Robert Fulton Drive, Reston, VA  
22091 (703) 860-4000 mbmenc@aol.com

### National Council of State Arts Education Consultants (NCSAEC)

c/o Supervisor of Visual and Performing Arts, Office of the Superintendent of Public  
Instruction, Old Capitol Building, P.O. Box 47200, Olympia, WA 98504-7200  
(360) 753-7389 gmay@ospi.wednet.edu

### National Guild of Community Schools of the Arts

40 N. Van Brunt Street, Suite 32, Englewood, NJ 07631 (201) 871-3337  
almayadas@worldnet.att.net

### National Task Force on Folk Arts in Education

609 Johnsten Place, Alexandria, VA 22301 (703) 836-7499

### Network of Performing and Visual Arts Schools

3421 M Street, NW, Suite 218, Washington, DC 20007 (202) 966-2216  
network@danielgrp.com

## **Arts and Humanities Teacher Resources**

### The Southeast Center for Education in the Arts

Kim Wheatley, Director, The Southeast Center for Education in the Arts,  
Lyndhurst Chair of Excellence in Arts Education, The University of Tennessee at Chattanooga,  
615 McCallie Avenue, Chattanooga, TN 37403 (423) 755-5204  
FAX (423) 755-4632 [scea@cecasun.utc.edu](mailto:scea@cecasun.utc.edu)

### Teachers & Writers Collaborative

5 Union Square West, New York, NY 10003 (212) 691-6590 [info@twc.org](mailto:info@twc.org);  
Very Special Arts (VSA)

### VSA Educational Services

1819 L Street, NW, Suite 300, Washington, DC 20036 (202) 628-8080  
(202) 737-0645 (TDD)

## Arts and Humanities Teacher Resources

### Dance

#### Publications: Books

- Anderson, Jack. *Dance*. New York: Newsweek Books, 1974.
- Andrew, Helene. *Jazz Dance*. Englewood Cliffs, NJ: Prentice Hall, Inc., 1993. Babin, Resa. *Dance Around the World*. New York: MCA Music, 1969.
- Benzwie, Teresa Ed.D. *A Moving Experience: Dance for Lovers of Children and the Child Within*. Tucson, AZ: Zephyr Press, 1987.
- Boorman, Joyce. *Creative Dance in the First Three Grades*. Ontario: Longman Canada Limited, 1971.
- Boorman, Joyce. *Creative Dance in Grades Four to Six*. Ontario: Academic Press Canada, 1971.
- Chappelle, Eric. *Music for Creative Dance*, Vols 1 and 11. Reston, VA: American Alliance for Health, Physical Education, Recreation and Dance, 1992.
- Cohan, Robert. *The Dance Workshop: A Guide to the Fundamentals of Movement*. New York: Simon and Schuster Inc., 1986.
- H'Doubler, M.N. *Dance: A Creative Art Experience*. Madison, WI: University of Wisconsin Press, 1957.
- Duffy, Natalie Willman. *Modern Dance: An Adult Beginners Guide*. Englewood Cliffs: Preston-Hall Inc., 1982.
- Fontayn, Margot. *Ballet Class*. New York, New York: Arco Publishing Company, 1985.
- Gilbert, Anne Green. *Creative Dance for All Ages*. 1992. The American Alliance for Health, Physical Education, Recreation and Dance.
- Harris, Jane A., Anne Pittman, Marlys S. Waller. *Dance A While*. Minneapolis: Burgess Publishing Co., 1959.
- Highwater, Jamake. *Dance: Rituals of Experience*. Pennington, NJ: Dance Horizons, Princeton Book Company, 1992.
- Jonas, Gerald. *Dancing: The Pleasure, Power and Art of Movement*. New York: Harry N. Abrams, Inc., 1992.  
ISBN 0-8109-3212-1.
- Joyce, Mary. *Dance Techniques for Children*. London: Mayfield Publishing Company, 1984.
- First Steps in Teaching Creative Dance to Children*. Palo Alto: Mayfield Publishing Company, 1980.

## Arts and Humanities Teacher Resources

### Dance

- Kraines, Minda Goodman and Esther Kan. *Jump into Jazz*. Palo Alto: Mayfield Publishing Company, 1983.
- Laban, R. *Modern Education Dance*. 3rd Edition. Plymouth, MA: MacDonald and Evans, 1975.  
Lockhart, A. & Pease, E. *Modern Dance: Building Lessons*. 6th Edition. Dubuque, IA: Wm. C. Brown Publishers. 1982.
- Lockhart and Pease, *Modern Dance: Building Lessons. 6th Edition*.  
Dubuque, IA: Wm. C. Brown Publishers, 1982.
- Physical Education Teaching Units for Program Development Grades 4-6*. Philadelphia: Lea and Febiger, 1986.
- Physical Education for Children: A Focus on the Teaching Process*. Philadelphia: Lea and Febiger, 1984.
- McGreevy-Nichols, Susan and Helen Scheff. *Building Dances, A Guide To Putting Movements Together*. Champaign, IL: Human Kinetics, 1995.
- Murray, Ruth Lovell. *Dance in Elementary Education*. New York, Harper & Row Publishers, 1975
- Saskatchewan Education. *Physical Education Elementary School Dance and Rhythmical Activities, A Teacher Handbook for Kindergarten, Division I*. Saskatchewan: Saskatchewan Education, 1981.
- Schrader. *A Sense of Dance: Exploring Your Music Potential*. Champaign, IL: Human Kinetics, 1995.
- Schurr Evelyn., *Movement Experiences for Children: Curriculum and Methods for Elementary School Physical Education*. New York: Appleton-Century-Crofts, 1967.
- Siedentop, Daryl, Jacqueline Herkowitz and Judy Rink. *Elementary Physical Education Methods*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1984.
- Slater, Wendy. *Teaching Modern Educational Dance*. Estover: Mac Donald and Evans LTD., 1974.
- Weikart, Phyllis. *Teaching Movement and Dance*. Ypsilanti, MI: High-Scope Press, 1990.  
ISBN 0-93114-16-0.

**Arts and Humanities Teacher Resources**  
**Dance**

**Publications: Curriculum Guides**

Henderson County Public Schools: Elementary Physical Education Dance Curriculum Guide.

Henderson, KY: Henderson County Public Schools, 1992.

Nancy Satterfield, Henderson County Public Schools, 1805 Second Street, Henderson, KY 42420  
(502) 831-5000 FAX (502) 831-5009

**Kentucky Professional Organizations: Kentucky**

Kentucky Association of Health, Physical Education, Recreation, and Dance

Lonnie Davis, Executive Director, Eastern Kentucky University, Weaver 202, Richmond, Ky. 40475  
(606) 622-1887 FAX (606) 622-1254 phedavis@acs.eku.edu

**National Professional Organizations: National**

The American Alliance for Health, Physical Education, Recreation and Dance 1900 Association Drive,  
Reston, VA 20191 (703) 476-3400 or (800) 213-7193  
[www.aahperd.org](http://www.aahperd.org)

National Dance Association, 1010 College Avenue, Manhattan, KS 66502-2708 (913) 532-6887 FAX  
(913) 532-7004

## Arts and Humanities Teacher Resources

### Music

#### Publications: Books

- Adams. *Classical Music Stories*. Grand Rapids, MI: T.S. Denison, 1996.  
ISBN 0-513-02328-3.
- Ardley, Neil. *A Young Person's Guide to Music*. New York: Dorling Kindersley, 1995.  
ISBN 0-7894-0313-7.
- Eyewitness Book: Music*. New York: Alfred Knopf, 1989.  
ISBN 0-394-82259-5.
- Britsch. *One Voice: Music and Stories in the Classroom*. New York: Teacher Ideas Press, 1995.  
ISBN I-56308-049-4.
- Burton, Bouznais. *Adventures in Music Listening*. New York: Belwin Mills, 1997.  
ISBN 0-769200264-0.
- Fowler, Charles. *Music! It's Role and Importance in Our Lives*. New York: Glencoe, 1995.  
ISBN 0-02642121-6.
- Hurd, Michael. *The Oxford Junior Companion to Music*. London: Oxford University Press, 1979.
- Levene, Donna. *Music Through Children's Literature*. New York: Teacher Idea Press, 1993.  
ISBN 1-56308-021-4.
- Machover. *Sound Choices: Guiding Your Child's Music Experiences*. London: Oxford University Press, 1996.  
0-19-509208-2.
- Marsalis, Wynton. *Marsalis on Music*. New York: W.W. Norton & Company, 1995.  
ISBN 0-393-03881-5.
- Pelis. *Long Live Music*. Harcourt Brace & Co., 1996.  
ISBN 0-15-201310-5.
- Pogue. *Classical Music for Dummies*. Foster City, PA: IDG Books, 1997.  
ISBN 0-7645-5009-8.
- Rachlin, Ann. *Famous Childrens Series*: New York: Barron's Educational Series, Inc., 1992.  
ISBN 0-8120-4991-8
- Sherman. *The Complete Idiot's Guide to Classical Music*. New York: Alpha Book, 1997.

## **Arts and Humanities Teacher Resources**

### **Music**

Spence, Keith. *The Young People's Book of Music*. New York: Millbrook Press, 1993.  
ISBN 1-56294-784-2.

Tythacott, Louise. *Traditions Around the World: Musical Instruments*. New York: Thomson Learning, 1995.  
ISBN 1-56847-228-5.

Venezia, Mike. *Getting to Know the World's Greatest Composers*. Chicago, IL: Children's Press, 1990.

*Young People's Book of Music*. New York: Kingfisher, 1996.  
ISBN 1-85697-586-X.

### **Professional Organizations: Kentucky**

Kentucky Music Educators Association  
Phyllis Vincent, 207 Esperanza Drive, Frankfort, KY 40601 (502) 695-1911  
FAX (502) 695-7727, pmvinvent@aol.com

Kentucky Music Teachers Association,  
Dr. Denine LeBlanc, 1311 South First Street, Louisville, KY 40208

### **Professional Organizations: National**

American Music Conference,  
5790 Armada Drive, Carlsbad, CA 92008 (619) 431-9124  
FAX (619) 438-7327

American Choral Directors Association  
Gene Brooks, Executive Director, P.O. Box 6310 | Lawton, OK 73506-0310  
(580) 355-8161 FAX (580) 248-1465, acda@sirinet.net

American Orff-Schulwerk Association  
P.O. Box 391089, Cleveland, OH 44139-8089

The Dalcroze Society of America  
Terry Boyarsky, Treasurer, 2812 Fairmount Blvd., Cleveland Heights, OH 44118

Music Educators National Conference  
Larry Mullins, 1806 Robert Fulton Drive, Reston, VA 20191-4348 (800) 828-0229  
FAX (703) 860-2652, MENC SER@aol.com

Sharon Summers, OAKE Executive Director, P.O. Box 9804, Fargo, ND  
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**Arts and Humanities Teacher Resources**  
**Drama and Theater**  
**Publications: Books**

- American Alliance for Theater & Education. *National Theater Education Project: A Model Drama/Theater Curriculum*. New Orleans: Anchorage Press, 1987.
- Barker, Clive. *Theater Games: A New Approach To Drama Training*. Portsmouth: HEB Inc., 1977.
- Belt, Lynda D. *Improve Game Book II: A Source Book of Improvisation Performance Games*. Puyallup, WA: Thespis Productions, 1993.
- Belt, Lynda D. *The Actor's Primer: An Acting Course in Making Choices*. Puyallup, WA: Thespis Productions, 1993.
- Bernardi, Philip. *Improvisation Starters: A Collection of 900 Improvisation Situations for the Theater*. Crozet, VA: Betterway Publications, Inc., 1992.
- California State Department of Education. *English-Language Arts Framework for California Public Schools: Kindergarten through Grade Twelve*. Sacramento: California State Department of Education, 1987.
- Caltagirone, Dennis. *Theater Arts: The Dynamics of Acting*. Lincolnwood, ILL: National Textbook Company, 1987.  
ISBN 0-8442-5165-8.
- Charters, Jill, and Anne Gately. *Drama Anytime*. Rozelle, Australia: Primary English Teaching Association, 1987.
- Charters, Jill, and Anne Gately. *Creative Drama in the Classroom, Grades 4-6*. New York: National Textbook Co. 1987.  
ISBN 0-8442-5497-5.
- Cranston, Jerneral W. *Transformations Through Drama: A Teacher's Guide to Educational Drama, K-8*. Lanham, MD: University Press of America, Inc., 1991. Creative Education Systems.  
*Playmaking: An Integration of the Arts in Education*. Riverside: Riverside CA.: Dovehaven Press, 1991.
- Creative Education Systems. *Playmaking: An Integration of the Arts in Education*. Riverside: Riverside, CA: Dovehaven Press, 1991.
- Cresci, Maureen McCurry. *Creative Dramatics for Children*. Glenview, IL: Scott, Foresman and Co., 1989.

## Arts and Humanities Teacher Resources

### Drama and Theater

- Duke, Mary Ann, Ed.D. *Writing For Real-World Reasons: A Ten Week Step-By-Step Outline For Teaching Playwriting From Primary To Pre-Teens*. Sarasota, FL: Cognitive Press, 1993.
- Fox, Mem. *Teaching Drama To Young Children*. Portsmouth: Heinemann Educational Books, Inc., 1987.
- Goodridge, Janet. *Creative Drama And Improvised Movement for Children*. Boston: Plays Inc., 1980.
- Goodwillie, Barbara. *Breaking Through: Drama Strategies for 10s to 15s*. Rowayton, CT: New Plays Books, 1986.
- Johansen, Mila. *101 Theater Games For Drama Teachers, Classroom Teachers & Directors*. Nevada City, CA: Classics With A Twist, 1993.
- Kelner, Lenore Blank. *A Guide for Using Creative Drama in the Classroom*. Silver Spring: InterAct, Inc., 1990.
- McCaslin, Nellie. *Creative Drama in the Classroom*. New York: Longman, 1984.  
ISBN 0-582-28508-9.
- Milgram, Sally-Anne. *Plays to Play with in Class*. San Jose: Resource Publications, Inc., 1985.
- Nobleman, Roberta. *50 Projects for Creative Dramatics*. Rowayton, CT: New Plays Inc., 1990.
- Novelly, Maria C. *Theater Games For Young People: Improvisations & Exercises for Developing Acting Skills*. Colorado Springs: Meriwether Publishing Ltd., 1985.
- Peterson. *Kids Take the Stage*. New York: Back Stage Books. 1997.  
ISBN 0-8230-7742-X.
- Poulter, Christine. *Playing The Game*. Studio City: Players Press, Inc., 1991.
- Rawlins, George, and Rich, Jillian. *Look, Listen and Trust: A Framework For Learning Through Drama*. London: Macmillan Education LTD, 1989.
- Salisbury, Barbara T. *Theater Arts in the Elementary Classroom: Book 1 for K-3 & Book 2 for 4-6*. New Orleans: Anchorage Press, Inc., 1990. San Diego City Schools. *Fine Arts Curriculum Guide: Grades K-3*. San Diego, CA: San Diego City Schools, (draft) 1986.
- Spolin, Viola. *Theater Games For The Classroom: A Teacher's Handbook*. Evanston, IL: North eastern University Press, 1986.  
ISBN 0-8101-4004-7.

## **Arts and Humanities Teacher Resources Drama and Theater**

Swartz, Larry. *Dramathemes: A Practical Guide for Teaching Drama*. Portsmouth: Heinemann Educational Books, 1988.

Tanner, Frank Averett. *Basic Drama Projects*. Caldwell ID: Clark Publishing Co., 1987.

Tanner, Frank Averett. *Creative Communication: Projects in Acting, Speaking and Oral Reading*. Caldwell ID: Clark Publishing Co., 1985.

Texas Educational Agency: *Theater Arts Framework: Kindergarten - Grade 12*. Austin, TX: Texas Educational Agency, 1989.

Thomson, Greg. *Step By Step Theater: Creating Plays for Class Presentation*. Belmont, CA: David S. Lake Publishers, 1989.

### **Professional Organizations: Kentucky**

Kentucky Catholic Forensic League

Garland Blair, 911 South Lincoln Blvd., Larue County High School, Hodgenville, KY 42748  
(502) 325-3674

Kentucky Educational Speech and Drama Association

Dr. Cathy Thomas, Breckinridge Hall, Morehead State University, Morehead, KY 40351 (606) 783-2712 cthomas@morehead.st.edu

Kentucky High School Speech League, Judy Woodring, Cherry Hall Rm #1, Western KY

University, Bowling Green, KY 42101 (502) 745-6340 FAX (502) 745-6341  
judy.woodring@wku.edu

Kentucky Theater Association, Tim Solis, President, 300 North Broadway, Lexington, KY 40508

### **Professional Organizations: National**

American Alliance for Theater & Education,

Theater Department, Arizona State University, P.O. Box 873411, Tempe, AZ 85287-3411  
(602) 965-6064 <http://www.asu.edu/cfa/theatre/orgs/aate/>

The Educational Theater Association / International Thespian Society,

3368 Central Parkway, Cincinnati, OH 45225-2392 (513) 559-1996  
FAX (513) 559 - 0012 <http://www.etassoc.org/>

National Federation of Interscholastic Speech and Debate Association,

11724 Northwest Plaza Circle, Kansas City, MO 64195-0626 (816) 464-5400

National Forensic League, James Copeland, PO Box 38, Rippon, WI 54971

(920) 748-6206

**Arts and Humanities Teacher Resources**  
**Drama and Theater**

The Southeast Institute for Education in Theater, The University of Tennessee at Chattanooga, 615  
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FAX (423) 755-4632 [scea@cecasun.utc.edu](mailto:scea@cecasun.utc.edu)

**Arts and Humanities Teacher Resources**  
**Visual Arts**  
**Publications: Books**

Clark, Kenneth. *Looking at Pictures*. London: John Murray, 1960.

Cole, Alison. *Eyewitness Art: The Renaissance*. New York: Dorling Kindersley, 1994.  
ISBN 1-56458-493-3.

Feldman, Edmund Burke. *Varieties of Visual Experience*. 3rd Edition. Englewood Cliffs, N.J.:  
Prentice-Hall, Inc, 1987.

Greenberg. *The Painter's Eye: Learning to Look at Contemporary American Art*. New York:  
Delacorte Press, 1991.  
ISBN 0-385-30319-X.

Hierstein, Judy. *Art Activities from Award-Winning Picture Books*. Carthage, IL: Teaching and  
Learning Co.  
ISBN 1-57310-034-X.

Hollingsworth, Patricia. *Smart Art*. Tucson, AZ: Zephyr Press, 1989.  
ISBN 0-913705-31-4.

Lahti, N.E. *The Language of Art From A to Z*. New York: York Books, 1997. Micklethwait, Lucy. *A  
Child's Book of Art*. New York: Dorling Kindersley, 1993.

Lahti, N.E. *A Child's Book of Play in Art*. New York: Dorling Kindersley, 1996.

Raboff, Ernest. *Art for Children Series*. New York: Harper Trophy Book, 1992.

Silver, Rhonda. *Exploring Art Masterpieces With Young Learners*. Scholastic, 1996.  
ISBN 0-590-92564-4.

Thompson, Kimberly. *Art Connections: Integrating Art*. New York: Good Year Books, 1995.

Venezia, Mike. *Getting to Know the World's Greatest Artists*. New York: Children's Press, 1991.

Westray, Kathlees. *A Color Sampler*. New York: Ticknor & Fields, 1993.  
ISBN 0-395-65940-X.

Wilson, Marjorie, B. Wilson. *Teaching Children to Draw*. Englewood Cliffs, NJ: Prentice-Hall Inc.  
1982.

Yenawine, Philip. *Key Art Terms for Beginners*. New York: Harry Abrams, 1995.  
ISBN 0-8109-1225-2.

**Arts and Humanities Teacher Resources**  
**Visual Arts**

**Professional Organizations: Kentucky**

Kentucky Art Education Association

Joanne Guilfoil, Eastern Kentucky University, Art Department, Richmond, KY 40475 (606)  
622-2163

**Professional Organizations: National**

African American Museums Association

P.O. Box 548, Wilberforce, OH 45384 (937) 376-4611

The Coalition of African American Cultural Organizations

2253 North Broad Street, Philadelphia, PA 19132 (215)-765-5055  
pheralynd@aol.com

The Getty Education Institute for the Arts

1200 Getty Center Drive, Suite 600, Los Angeles, CA 90049-1683  
(310) 440 -7315 mnowatt@getty.edu

National Art Education Association

1916 Association Drive, Reston, VA 20191-1590 (703) 860-8000  
FAX (703) 860-2960

## **Arts and Humanities Internet Resources**

### **Arts and Humanities**

African American Culture  
<http://www.bridgesweb.com/>

Alpine Curriculum of Excellence  
<http://www.alpine.k12.ut.us/ASD/Curriculum%20ASD/>

ArtsEdNet  
<http://www.artsednet.getty.edu>

ArtsEdge  
<http://artsedge.kennedy-center.org/artsedge.html>

Arts Education Model Programs  
<http://www.aaae.org/models/models.html>

Arts Education Online  
<http://www.ucop.edu/tcap/aeol.html>

Arts Wire  
<http://www.artswire.org/Artswire/www/NEWmap.html#about>  
ASCD Arts Education Network

Dr. Gene Van Dyke, Director [gvandyke@northstar.csiu.k12.pa.us](mailto:gvandyke@northstar.csiu.k12.pa.us)  
<http://artsedge.kennedy-center.org/ArtsInEd.html>  
Connections+  
<http://www.mcre.org/connect/plus/>

Creative Impulse: The Artist's view of World History and Western Civilization  
<http://history.evansville.net/index.html>

Cultural Arts Resources for Teachers & Students  
<http://www.carts.org/index.html>

Edsitement  
(National Endowment for the Humanities)  
<http://edsitement.neh.fed.us>

The Goals 2000 Arts Education Partnership  
<http://aep-arts.org>

## **Arts and Humanities Internet Resources**

### **Arts and Humanities**

Kentucky Educational Television's Distance Learning Site  
<http://www.dl.ket.org/>

The Mid-continent Regional Educational Laboratory (McREL) Lesson Plans in the Arts  
<http://www.mcrel.org/connect/artslessons.html>

National Standards for Arts/Music Education  
<http://www.dancing.com/dance/indexfr.htm>

North Carolina's Curriculum Matrix  
<http://www.dpi.state.nc.us/Curriculum/CrrclmMtrx.html>

Saskatchewan Education's On-line Bibliographies Arts Education: A Bibliography for the Elementary Level.  
[http://www.sasked.gov.sk.ca/curr\\_inst/iru/bibs/elemarts/](http://www.sasked.gov.sk.ca/curr_inst/iru/bibs/elemarts/)

Saskatchewan Education's On-line Bibliographies Arts Education: A Bibliography for the Secondary Level.  
[http://www.sasked.gov.sk.ca/curr\\_inst/iru/bibs/secartsed/](http://www.sasked.gov.sk.ca/curr_inst/iru/bibs/secartsed/)

Saskatchewan Canada Arts Education Home Page  
[http://www.sasked.gov.sk.ca/curr\\_inst/artsed/](http://www.sasked.gov.sk.ca/curr_inst/artsed/)

Theatre Education Literature Review  
<http://www.aaae.org/theatre/thfront.html>

Web Sites and Resources for Teachers  
<http://www.csun.edu/~vceed009/>



## **Arts and Humanities Internet Resources**

### **Dance**

A Brief History of the Power of Dance

<http://www.music.sony.com/Music/ArtistInfo/>

Annotated Bibliography for Special Needs Students

<http://www.dance.ohio-state.edu:80/>

British Columbia Ministry of Education integrated Dance Curriculum for grades 8-10.

<http://www.est.gov.bc.ca/.curriculum/www/irps/dance810/datoc.htm>

The "Classical Ballet" Site

[http://haas.berkeley.edu/~schladem/ballet\\_html/](http://haas.berkeley.edu/~schladem/ballet_html/)

Cross-Cultural Dance Resources

<http://jan.ucc.nau.edu/~jwk3/index.html>

The Dancers' Archive

<ftp://ftp.std.com/nonprofits/dance/>

Dance Curriculum Resources from Saskatchewan Canada.

<http://www.sasked.gov.sk.ca/docs/artsed/dance102030/>

Dance Magazine On Line

<http://www.dancemagazine.com/>

Dance Section of the World Wide Web Virtual Library

<http://www.dancing.com/dance/indexfr.htm>

Dance Teacher Now Magazine

<http://wwar.com/cgi-bin/gregaccess?da438>

North Carolina Arts Education Curriculum

<http://www.dpi.state.nc.us/curriculum/ArtsEd/ArtsEd.html>

Sapphire Swan Dance Directory

<http://www.SapphireSwan.com/dance/>

World Wide Arts Resources Dance Page

<http://wwar.com/dance/index.html>

## **Arts and Humanities Internet Resources**

### **Dance**

Dance Art.com

<http://www.danceart.com/>

DanceUSA

<http://www.artswire.org/Artswire/danceusa/home.html>

History of American Jazz Dance - Written and developed by Bob Boross of Western Kentucky University. <http://www.wku.edu/~bboross/history.html>

The Jazz Dance Homepage.

<http://www.wku.edu/~bboross/home.html>

Native American Dancing

<http://www.scsn.net/users/pgowder/>

### **Music**

All-Music Guide

<http://www.allmusic.com/>

Archives of African American Music and Culture

<http://www.indiana.edu/~aaamc/websites.html>

Ask ERIC Lesson Plans

<http://ericir.syr.edu/Virtual/Lessons/Arts/Music/>

British Columbia Ministry of Education integrated Music Curriculum for grades 8-10.

<http://www.est.gov.bc.ca/curriculum/irps/music810/mutoc.htm>

Education at the Met

<http://www.operaed.org>

Elementary General Music Teaching and Learning Center

<http://www.potsdam.edu/crane/campbemr/>

Fun Music Ideas

<http://www.rcavictor.com/rca/hits/guide/>

K-8 Music Page

<http://www.u.arizona.edu/~tirwin/>

## **Arts and Humanities Internet Resources**

### **Music**

“Folk Stuff” - Resources for Folk Music

<http://www.rogo.com/folkstuff/>

In Harmony With Education

<http://www.menc.org/>

Internet Music Resources-Sibelius Academy

<http://www.siba.fi/Kulttuuripalvelut/music.html>

Introduction to Classical Music

Music Curriculum Resources from Saskatchewan Canada

<http://www.sasked.gov.sk.ca/docs/artsed/artsmain.html>

Music Education@GSPYO.com

<http://www.gspyo.com/>

Music Education Launch Site

<http://www.talentz.com/index.html>

Music Education Online.

<http://www.geocities.com/Athens/2405/index.html>

Native American Music Resources on the Internet

<http://hanksville.phast.umass.edu/misc/NAresources.html>

Html Resources for Music Educators

<http://www.ed.uiuc.edu/edpsy-387/>

The School Music Program: A New Vision.

<http://www.menc.org/>

The Virtual Music Classroom

<http://cnet.unb.ca/achn/kodaly/koteach/>

Welcome to Jazz Central Station

<http://jazzcentralstation.com/>

Worldwide Internet Music Resources

[http://www.music.indiana.edu:80/music\\_resources/](http://www.music.indiana.edu:80/music_resources/)

WWW Virtual Library: Classical Music

<http://www.gprep.org/classical/index1.html>

## **Arts and Humanities Internet Resources**

### **Drama/Theatre**

African American Theater  
<http://www.bridgesweb.com/>

A Brief Guide to Internet Resources in Theater and Performance Studies  
[http://www.stetson.edu/~csata/thr\\_guid.html](http://www.stetson.edu/~csata/thr_guid.html)

British Columbia Ministry of Education integrated Drama Curriculum for grades 8-10.  
<http://www.est.gov.bc.ca/curriculum/www/irps/drama810/drtoc.htm>

Drama Curriculum Resources from Saskatchewan Canada  
[http://www.sasked.gov.sk.ca/docs/artsed/g6arts\\_ed/g6rtblae.html](http://www.sasked.gov.sk.ca/docs/artsed/g6arts_ed/g6rtblae.html)

National Standards for Theater Education  
<http://www.byu.edu:80/tmcbucks/arts-ed/StanHome.html>

Storytelling, Drama, Creative Dramatics & Readers Theater for Children...  
<http://falcon.jmu.edu/~ramseyil/drama.htm>

Theater Education Literature Review  
<http://www.aaae.org/theatre/thfront.html> Women of Color, Women of Words/African-American

Women of Color, Women of Words/African-American Playwrights  
<http://www.scils.rutgers.edu/~cybers/home.html>

The Virtual Library: Theater and Drama  
<http://www.brookes.ac.uk/VL/theatre/index.htm>

### **Visual Arts**

African American Art  
<http://www.artsednet.getty.edu/ArtsEdNet/Resources/Maps/african.html>

ArtsEdNet: The Getty Education Institute for the Arts  
<http://www.artsednet.getty.edu/>

Art History Resources on the Web  
<http://witcombe.bcpw.sbc.edu/ARTHLinks.html>

ArtLex  
<http://www.artlex.com/>

Art Teacher Connection  
<http://www.primenet.com/~arted/>

## Arts and Humanities Internet Resources

### Visual Arts

Art Teacher on the Net

<http://members.tripod.com/~artworkinparis/index-3.html>

AskERIC Lesson Plans : Art

<http://ericir.syr.edu/Virtual/Lessons/Arts/>

Kathy Schrock's Guide for Educators

<http://www.capecod.net/schrockguide/index.htm>

Incredible Art Department

<http://www.artswire.org/kenroar/>

Eyes on Art.

<http://www.kn.pacbell.com/wired/art/art.html>

Learning@Web.Sites : Art Department

<http://www.ecnet.net/users/gdlevin/artdept.html>

National Museum of African Art

<http://www.si.edu/organiza/museums/>

British Columbia Ministry of Education integrated Visual Arts Curriculum for grades 8-10.

<http://www.est.gov.bc.ca/curriculum/irps/visart810/vatoc.htm>

Metropolitan Museum of Art Education Resources

<http://www.metmuseum.org/htmlfile/education/edu.html>

The Museum of Modern Art, New York

<http://www.moma.org>

National Museum of African Art

<http://www.si.edu/organiza/museums/africart/nmafa.htm>

Virtual Curriculum: Elementary Art Education

<http://www.dhc.net/~artgeek>

Visual Arts Curriculum Resources from Saskatchewan Canada

<http://www.sasked.gov.sk.ca/docs/artsed/>

For additional resources, see the Kentucky Department of Education's Web Site at [www.kde.state.ky.us](http://www.kde.state.ky.us) and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12*.

# **English/Language Arts**



# **Required Credits**



## **High School English/Language Arts Traditional Model**

High school English classes have traditionally been taught as literature-based curriculum. Students read classic and contemporary literary works to study how those genres are written, use those works as models for their own writing, and learn how literature reflects the culture it represents. The traditional model that follows is based on that same approach and, at the same time, expands it to incorporate other types of writing which students will encounter in their everyday and work worlds.

While all four required English/Language Arts courses contain all types of reading, each has a different focus. English I emphasizes reading and writing of informational materials. English II targets practical/workplace and persuasive texts. The center of English III is literary reading and writing. The final required course, English IV, asks students to bring together a variety of texts to prepare them for their postsecondary interests and vocations.

This traditional model follows patterns of most anthologies. English I uses an overview of all types of literary genres, as well as informational reading, such as biographies, autobiographies, periodicals, and essays. World literature is the subject of English II. English II focuses on American literature, while English IV students read selections from British literature. As always, teachers should search for particular works to suit not only course requirements, but also needs and abilities of their students. Works selected for each course should represent multiple cultures, time periods, and formats. A bibliography follows each model with some suggestions of reading material. These lists should not be considered as comprehensive, but rather as starting points.

While each model may be identified by a type of reading focus, it is important to remember that each course must include all five strands of English/Language Arts: reading; writing; speaking, listening, observing; inquiry; and technology as communication. Activities are identified for each strand, but they are related to all others. For instance, students may read and write about topics during the inquiry process, which also includes conducting interviews electronically. Read across all columns to find activities that are aligned with each other within each guiding question.

Teachers should remember that models contain suggested activities. These activities may have to be adapted for a particular group of students. They are also just starting points. Additional activities may be designed to supplement these in order to reach course goals.

## **High School English/Language Arts**

### **English I: Traditional Model**

#### **Course Overview:**

The traditional model of English I focuses on what literature can reveal about people of different ages, cultures, and abilities. An anthology can provide the basis for genres discussed.

While the model is constructed to reflect separate activities in each of the five required language arts strands, activities align concepts studied. Instruction should correlate the five areas of reading; writing; inquiry; speaking, listening, observing; and using technology for communication. Building skills in each aspect enhances all others.

Because this model contains activities for each of the five strands, each guiding question is organized into a three-page grouping. The first page contains the guiding question, academic expectations, and correlations to the *Program of Studies*. The second and third pages contain activities in each required strand that are correlated to that guiding question. Activities are aligned horizontally to demonstrate how strands work together. For instance, students research and read travel information in conjunction with writing travel essays and producing electronic guides to cultural customs. Reading suggested activities both horizontally and vertically will give a complete picture of proposed tasks.

Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations. The third page of each grouping also includes sample extensions for diverse learners.

#### **Guiding Questions:**

- What roles do heroes play in our society?
  
- What are the dreams of youth and what happens as a result of those dreams?
  
- What makes people and cultures unique?

**High School English/Language Arts  
English I: Traditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Organize Information</b> (1.10)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Connect and Integrate Knowledge</b> (6.3)</p>	<p>What roles do heroes play in our society?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze informational materials.</li> <li>• respond critically to literary genres.</li> <li>• identify writers’ purposes and techniques.</li> <li>• read for enjoyment.</li> <li>• understand vocabulary in context.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• write personal pieces.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• deliver oral presentations.</li> <li>• apply verbal and nonverbal elements of delivery.</li> <li>• use correct language in speaking.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources for inquiry.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts  
English I: Traditional Model**

<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• select biographies or autobiographies for individual reading. Identify heroic characteristics, tragic flaws, adversities overcome, purposes, techniques, jargon, dialect, and idioms.</li> <li>• read periodical interviews of famous individuals noting how interviews are constructed, what traits of characters are revealed, and how articles are written. Decode specialized vocabulary and jargon for areas such as sports, music, medicine, and politics.</li> <li>• read short memoirs to investigate what is revealed about characters.</li> <li>• identify traits of heroes in dramas and how drama characteristics differ from those of biographies and autobiographies.</li> <li>• compare in journals how heroes are portrayed in myths to their portrayal in nonfiction.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• take journal notes of heroic characteristics while reading.</li> <li>• use information from biographies and autobiographies to create “interview” articles for magazines.</li> <li>• use writing-to-learn strategies (e.g., notetaking, graphic organizers) to develop and organize prewriting for transactive pieces (e.g., articles, editorials, speeches).</li> <li>• use models to write memoirs, that focus on heroic qualities.</li> <li>• write reviews of dramas that demonstrate understanding of dramatic elements. Use peer conferences to review and critique writing.</li> <li>• demonstrate what they have learned about concept of hero in writing-to-demonstrate-learning situations (e.g., open-response, essays).</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compile lists of heroic traits found in reading and debate whether particular characters are heroes.</li> <li>• develop short presentations (e.g., role play, TV spot, speech, eulogy), using appropriate delivery and language and awareness of audience and purpose to deliver information about heroes.</li> </ul>

**High School English/Language Arts**  
**English I: Traditional Model**

<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literary and transactive works to investigate the question, “What are heroes?”</li> <li>• use print and nonprint sources to locate information about heroes in literature.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• view video of Ghandi and identify heroic characteristics.</li> <li>• synthesize what they have learned about heroes to create original presentations (e.g., documentary segment for <i>PBS Biography</i>, Web site, original play, artistic representation, news magazine program).</li> </ul>	<p>A cluster of students with advanced-level reasoning skills will substitute <i>Hero with a Thousand Faces</i> and selected advanced-level novels, biographies, and autobiographies that relate to archetypes and for vocabulary development activities (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, resources and materials, participation, procedures and routines</i>).</p> <p>Tia has minimal English skills. While she is still in the silent stage, she can participate with the group. Her small group teaches her motions for dramatic presentations on heroes. By copying modeled behavior, Tia participates in activities (<i>Types of extensions: purpose and appropriateness, complexity, participation, level of support</i>).</p>

**High School English/Language Arts  
English I: Traditional Model**

**NOTES**

**High School English/Language Arts**  
**English I: Traditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p style="text-align: center;"><b>Inquiry</b> (1.1)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Organize Information</b> (1.10)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p style="text-align: center;"><b>Think and Solve Problems</b> (5.1, 5.2)</p> <p style="text-align: center;"><b>Connect and Integrate Knowledge</b> (6.3)</p>	<p>What are the dreams of youth and what happens as results of those dreams?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze informational material.</li> <li>• respond to literary genres.</li> <li>• identify authors’ purposes and techniques.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• write literary pieces.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• deliver oral presentations.</li> <li>• apply verbal and nonverbal delivery elements.</li> <li>• apply critical listening and observing skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources for inquiry.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts**  
**English I: Traditional Model**

Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/ Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literature (e.g., “Seven Ages of Man,” “I Have A Dream,” “Dreams,” “A Dream Deferred,” “All the Years of Her Life”) to analyze concepts of life, growing up, and dreams of youth.</li> <li>• read poetry about growing up and compare aspects of maturing in different poems.</li> <li>• read <i>Romeo and Juliet</i> to analyze how plot and characters demonstrate results of youthful dreams.</li> <li>• read and view <i>West Side Story</i> in order to compare plot, theatre style, characters, setting, and theme to <i>Romeo and Juliet</i>.</li> <li>• read <i>Great Expectations</i> to compare literary youthful dreams to present experiences of students.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies during reading to organize information and ideas for writing projects.</li> <li>• write poems on stages of life, modeled after Shakespeare’s format. Use poetic form and language to express what happens to youthful dreams.</li> <li>• summarize information on Shakespeare to provide background for other students to study <i>Romeo and Juliet</i>.</li> <li>• use graphic organizers to compare written text of <i>Romeo and Juliet</i> with movie versions.</li> <li>• write letters in on-demand situations to Romeo and Juliet or to Maria and Tony to persuade them to take action that will prevent tragedy.</li> <li>• write critical reviews of <i>Romeo and Juliet</i> and <i>West Side Story</i>. Use writing workshop for conferences and peer reviews of writing process.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use information from reading to support concepts of life and growing up in panel discussion or debate.</li> <li>• present findings on Shakespeare’s theatre and time period to class, using multimedia or video clips.</li> <li>• dramatize scenes from <i>Romeo and Juliet</i> to observe nuances of meaning from delivery.</li> <li>• compare production aspects of stage play and video versions of <i>Romeo and Juliet</i>.</li> <li>• view <i>West Side Story</i> to reflect on how classical literature can be adapted to more modern settings.</li> <li>• develop viewing guides for plays including how meaning is conveyed through sets, lights, costumes, staging, and interpretation by actors.</li> </ul>



**High School English/Language Arts**  
**English I: Traditional Model**

<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research life stages in developmental theory and see what is mastered or is key crisis at each stage and compare to literary perceptions.</li>   <li>• research influences on theatre in Shakespeare’s time (e.g., theatre structure, audience, language, culture) to develop information for background guide on <i>Romeo and Juliet</i>.</li>   <li>• use current and historical resources to prepare information on development of America’s musical theatre as background for viewer’s guide to <i>West Side Story</i>.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use technology source for musical theatre research.</li> <li>• use video clips of musicals to present history of musical.</li> <li>• use theatrical technology (e.g., light and sound boards) to enhance scene performances from <i>Romeo and Juliet</i>.</li> </ul>	<p>Karin is deaf. She uses an interpreter during the stage play and closed caption for the video version in order to compare production aspects. In her oral presentation, Karin signs while her interpreter voices her presentation (<i>Types of extensions: level of support, participation, demonstration of knowledge, procedures and routines</i>).</p>

**High School English/Language Arts  
English I: Traditional Model**

**NOTES**

**High School English/Language Arts  
English I: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Organize Information</b> (1.10)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Think and Solve Problems</b> (5.1., 5.2)</p> <p><b>Connect and Integrate Knowledge</b> (6.3)</p>	<p>What makes people and cultures unique?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze informational material.</li> <li>• respond to literary genres.</li> <li>• read for enjoyment.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• write literary pieces.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• deliver oral presentations.</li> <li>• apply verbal and nonverbal elements of delivery.</li> <li>• apply critical listening and observing skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources for inquiry.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts**  
**English I: Traditional Model**

<p style="text-align: center;"><b>Sample Reading Activities</b></p>	<p style="text-align: center;"><b>Sample Writing Activities</b></p>	<p style="text-align: center;"><b>Sample Speaking/Listening/ Observing Activities</b></p>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literature from other cultures to identify writing styles. Compare points of view in selections to analyze influence of time, place, and society.</li>   <li>• read literature focusing on heritage of particular cultures. After reading literature of particular cultures, read nonfiction materials of same cultures to compare what is revealed about those societies and their people.</li>   <li>• read two novels, one from students' own culture and one from another culture to compare cultural traits revealed through literature.</li> <li>• make real-life connections with reading by comparing literary characters to known people to determine how conflict is handled in different cultures.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write and illustrate poetry of other cultures (e.g., Haiku).</li>   <li>• write guides to customs of cultures based on their research.</li> <li>• write travel essays that demonstrate cultures studied.</li> <li>• write character sketches that evaluate influence of society on characters.</li>   <li>• develop short stories set in different cultures that have cultural conflict as part of plot. Combine research and creativity.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• watch performances of Kabuki theatre and compare to classic American productions.</li> <li>• develop projects to demonstrate theatre listening and observing strategies to younger students.</li> <li>• participate in storytelling festivals to share stories from different cultures.</li> </ul>

**High School English/Language Arts**  
**English I: Traditional Model**

<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research origins of Kabuki as preparation for watching performance.</li> <li>• research through both literary and transactive materials customs of cultures.</li>   <li>• research multiple customs from various cultures.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• access CD-ROMs for research on cultures.</li> <li>• prepare electronic guides to cultural customs with video and audio clips.</li>   <li>• use Internet to research information on prominent people of various cultures.</li> </ul>	<p>Hans is a creative artist; however, he is having difficulty translating his ideas and thoughts into writing. Shelby enjoys conveying her ideas through art forms; however, she needs multiple models to learn structures and concepts, frequent feedback and more intensive guided practice which lengthens the time for her to complete activities. Hector is a recent immigrant from Mexico. He is a fluent Spanish reader and speaker and is a beginning English speaker and reader. Hans uses voiced text (e.g., Intellitalk) to record his thoughts and works independently on his illustrations. Hector writes his poetry in Spanish, then translates his poem into English with support of his electronic dictionary (<i>Types of extensions: resources and materials, complexity, magnitude, time, pace, participation, procedures and routines</i>).</p>

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**Student Resources**

**What roles do heroes play in our society?**

Allende, Isabel. "Uncle Marcos"  
Angelou, Maya. *I Know Why the Caged Bird Sings*  
Atwood, Margaret. "Siren Song"  
Dickens, Charles. *Fragments of an Autobiography*  
Heyerdahl, Thor. *Kon-Tiki*  
Homer, *The Odyssey*  
Keller, Helen. *The Miracle Worker*  
Millay, Edna. "An Ancient Gesture"  
Sandburg, Carl. *Lincoln*  
Stuart, Jesse. "Split Cherry Tree"  
Tennyson, Alfred Lord. "The Lotus Eaters"  
Thurber, James. "The Secret Life of Walter Mitty"  
Twain, Mark. *Life on the Mississippi*  
Uchida, "Of Dry Goods and Bobsticks"

**What are the dreams of youth and what happens as a result of those dreams?**

Burns, Robert. "Jo Anderson My Jo"  
Burns, Robert. "A Red, Red Rose"  
Callaghan, Morley. "All the Years of Her Life"  
Dickens, Charles. *Great Expectations*  
Hughes, Langston. "A Dream Deferred"  
Hughes, Langston. "Dreams"  
King, Martin. "I Have a Dream"  
LeGuin, Ursula. "Gwilan's Harp"  
Parker, Dorothy. "Solace"  
Shakespeare, William. *Romeo and Juliet*  
Shakespeare, William. "Seven Ages of Man"  
Stockton, Frank. "The Lady or the Tiger"

**What makes people and cultures unique?**

Connell, Richard. "Most Dangerous Game"  
DeMaupassant, Guy. "The Necklace"  
Giles, Janice Holt. *The Believers*  
Hurst, James. "The Scarlet Ibis"  
Least Moon, William. "Nameless Tennessee"  
Lindbergh, Ann. "Sayonara"  
Petraakis, Mark. "A Whole Nation and a People"  
Poe, Edgar. "The Cask of the Amontillado"  
Tan, Amy. *The Joy Luck Club*  
West, Jessamyn. "The Pacing Goose"

**High School English/Language Arts  
English I: Traditional Model**

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## High School English/Language Arts

### English II: Traditional Model

**Prerequisite:** English I

#### **Course Overview:**

The traditional model of English II looks at world literature through five themes. While this course satisfies all requirements for English II, many of the suggested works from arts and humanities core content can be incorporated. As students travel through various time periods and cultures, they will gain global perspectives. Literature is a vehicle for their exploration of themselves and their own world.

While the model is constructed to reflect separate activities in each of the five required language arts strands, activities align concepts studied. Instruction should correlate the five areas of reading; writing; inquiry; speaking, listening, observing; and using technology for communication. Building skills in each aspect enhances all others.

Because this model contains activities for each of the five strands, each guiding question is organized into a three-page grouping. The first page contains the guiding question, academic expectations, and correlations to the *Program of Studies*. The second and third pages contain activities in each required strand that are correlated to that guiding question. Activities are aligned horizontally to demonstrate how strands work together. For instance, students research and read about conflict to prepare to write descriptions of societies in which no conflict exists and deliver speeches on how to achieve that goal. Reading suggested activities both horizontally and vertically will give a complete picture of proposed tasks.

Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations. The third page of each grouping also includes sample extensions for diverse learners.

#### **Guiding Questions:**

- How does geography shape societies' views of themselves and the world?
- How do spiritual beliefs affect one's perception of himself and others?
- How do literature, theatre, art, music, and architecture reflect values of society?
- How does internal conflict affect relationships and society?
- How can we break through barriers of prejudice to promote tolerance?



**High School English/Language Arts  
English II: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Connect and Integrate Knowledge</b> (6.1)</p>	<p>How does geography shape societies' views of themselves and the world?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze persuasive materials.</li> <li>• respond to literary genres.</li> <li>• identify authors' points of view.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• apply source documentation.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• practice critical listening, observing, and thinking skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access multiple sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> <li>• use technology to present information.</li> </ul>

**High School English/Language Arts  
English II: Traditional Model**

<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literature of ancient civilizations (e.g., Tigris and Euphrates River Valley, Hebrew, Indus River Valley, Yellow River Valley, Nile River Valley) to identify writing styles, subjects, and themes common to each culture. Determine how geography of those civilizations affected their views of themselves and others.</li> <li>• read historical accounts of ancient civilizations to compare historians' views of cultures with that shown in literature.</li> <li>• read materials (e.g., brochures, pamphlets) from students' geographic area as models for structure and organization of transactive materials and to determine how local geography impacted social and economic complexion of community.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use double-entry response journals to organize information about each civilization, roles of geography, and relationships among civilizations.</li> <li>• respond to open-response questions to compare problems of ancient civilizations to those of today (e.g., crime, social issues).</li> <li>• follow models to create brochures with ideas and facts about targeted civilizations to distribute in learning centers. Use organizational signals and source documentation.</li> <li>• develop editorials for local newspapers arising from needs identified in research about community.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create and perform "folk art" presentations (e.g., drama, storytelling, song) that reflect views of particular societies.</li> <li>• conduct interviews with business and community leaders to identify current situations and needed developments.</li> <li>• collaborate to create interactive learning centers. Establish museum setting to carousel information about impacts of geography on civilizations. Serve as docents. Centers may relate to ancient civilization or their own geographic area.</li> </ul>

**High School English/Language Arts**  
**English II: Traditional Model**

Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate historical accounts of ancient civilizations through multiple sources. Use graphic organizers to compare how historians described various cultures.</li> <li>investigate development of their own geographic area in particular ways (e.g., economic growth, population changes socioeconomic changes, career options, cultural opportunities, entertainment ,religion).</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>use presentation software to create annotated maps of literature of civilizations, demonstrating styles, subjects, and themes.</li> <li>use electronic resources (e.g., e-mail, Internet) to research topics relating to their geographic area and ancient civilizations.</li> <li>use desktop publishing programs to produce professional quality brochures for learning centers.</li> <li>enhance learning centers with interactive video and computer stations.</li> </ul>	<p>Terrill, Jackson, Selena, and Sylvia are active in academic team activities (e.g., Future Problem Solving). Following their interviews with community leaders that identify current situations and needed developments in their communities, these students will develop proposals suggesting solutions to current community problems. Students will present their proposals to community leaders. They will apply the Future Problem Solving model for the proposals (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, participation, level of support, environment, procedures and routines, motivation, demonstration of knowledge</i>).</p> <p>Ivan is beginning to understand spoken English, but has difficulty with print media. He comes from the high mountains. His new home is in the piedmont. Working with peer tutors, he learns vocabulary required to explore economic growth and opportunities of the region. His report will focus on advantages the terrain offers to travel and commerce (<i>Types of extensions: purpose and appropriateness, complexity, demonstration of knowledge, level of support</i>).</p>

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**English II: Traditional Model**

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p align="center"><b>Connect and Integrate Knowledge (6.1)</b></p>	<p>How do spiritual beliefs affect one’s perception of himself and others?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze practical/workplace materials.</li> <li>• read and analyze persuasive materials.</li> <li>• identify authors’ points of view.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• analyze persuasive techniques.</li> <li>• practice critical listening, observing, and thinking skills.</li> <li>• apply language structure and conventions.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access multiple sources.</li> <li>• evaluate credibility.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> <li>• use technology to present information.</li> </ul>

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Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read traditional selections of sacred literature (e.g., <i>Bible</i>, <i>Torah</i>, <i>Koran</i>) to compare tenets of various religions.</li> <li>• read sermons to determine writers' perceptions of people's relationship to duties and the world.</li> <li>• analyze materials from self-help organizations (e.g., Alcoholics Anonymous, Weight Watchers) to determine spiritual beliefs underlying their improvement plans.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use organizational signals to organize information about various religions in transactive pieces (e.g., brochures, study guides).</li> <li>• prepare critique of sermons using criteria for effective writing and speaking.</li> <li>• create consumer guides to local self-help organizations, including information such as purpose, history, meeting times and places.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• listen to speakers of different religions to identify how spiritual beliefs may have changed over time.</li> <li>• listen to and observe recorded sermons to determine persuasive techniques used and predict their impact on intended audience.</li> <li>• watch video presentations of self-help organizations to evaluate their use of persuasive techniques, targeted audiences, and language. Respond to presentations in open-response situations.</li> </ul>

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Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• access multiple spiritual documents to compare and contrast basic tenets of world religions. Create charts and graphs to show comparisons.</li> <li>• evaluate credibility of presentation of self-help organizations by determining which claims are more reliable.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use presentation or desktop publishing to prepare annotated critique versions of sermons.</li> <li>• visit Web sites of self-help organizations to determine what information they present and how.</li> </ul>	<p>Kirk, Steve, Shondra, and Bethany have transition plans that identify self-advocacy as needs. They are taught the Self-Advocacy Strategy (University of Kansas Center for Research on Learning) which requires them to identify community organizations including self-help organizations (e.g., Learning Disabilities Association, Brain Injury Association of Kentucky, Mensa, Junior Achievement, Al-Anon, Red Cross) to assist them as needed. After preparing personal consumer guides, they work as teams to integrate information and prepare consumer guides to place on their schools Web site (<i>Types of extensions: procedures and routines, purpose and appropriateness, magnitude, resources and materials, motivation, order of learning, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Connect and Integrate Knowledge</b> (6.1)</p>	<p>How do literature, theatre, art, music, and architecture reflect values of society?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read persuasive materials.</li> <li>• respond to literary genres.</li> <li>• identify authors' points of view.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• practice critical listening, observing, and thinking skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access multiple sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> <li>• use technology to present information.</li> </ul>

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<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literary works from different time periods and cultures to identify what they reveal about values of their societies.</li> <li>• compare two literary works of different time periods about same topic to identify how works present different society's views (e.g., <i>The Red Badge of Courage</i> and <i>In Country</i> show different ideas about how society accepts disillusionment with war).</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• chart values of various societies in graphic organizers.</li> <li>• prepare comparative guides to artistic styles of different time periods and societies. Include illustrations and descriptions.</li> <li>• prepare director's notes for theatre showbills that explain how plays fit into style of particular cultures.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• present examples of literature, art, music, and architecture to class as reflections of current values. Presentations should include audio/visual aids (e.g., transparencies, recordings, computer simulations).</li> <li>• view theatre performances that represent particular cultures (e.g., Japanese No theatre, morality plays) to discuss cultural aspects shown in productions.</li> </ul>

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<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>locate artworks to illustrate time periods and cultures of different literary works.</li> <li>investigate through various sources (e.g., museum visits, museum Web sites, reference books) various art forms of particular societies and how they reflect their values.</li> <li>determine how values of today's society are reflected in contemporary literature, art, music, and architecture by locating sample artistic works and comparing them to analysts' views of society's values.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>use digital camera or video archives to illustrate literary works in appropriate styles.</li> <li>perform electronic searches for information on artistic forms of various societies.</li> </ul>	<p>McClure and Darlene need more time to complete activities and altered pacing of instruction. Prior to the class activity to perform electronic searches, McClure and Darlene are given instruction on searching because the class instructional plan is scheduled for two days and they need additional time to learn how to do searches. The assignment is expected to take three days. These students will be given five days to complete the assignment (<i>Types of extensions: pace, time</i>).</p> <p>Nestor and Hector have been in the country for three months and their oral and writing language skills are limited. The two Cuban students will perform Internet searches and download images from the Disco Era and the Rap Era. They will make collages presenting two contrasting decades. Clothing, slang expressions, trends in home decor, automobiles, and fast foods should reflect values of the periods. They will then select one popular disco song and one popular rap song and lead class discussion of messages presented in songs. As facilitators, they will make Venn diagrams which will assist students see similarities and differences in societal values and beliefs (<i>Types of extensions: demonstration of knowledge, resources and materials, participation</i>).</p>

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Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p style="text-align: center;"><b>Inquiry</b> (1.1)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p style="text-align: center;"><b>Think and Solve Problems</b> (5.1, 5.4)</p>	<p>How does internal conflict affect relationships and society?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze practical/workplace materials.</li> <li>• read and analyze persuasive materials.</li> <li>• respond to literary genres.</li> <li>• identify authors' points of view.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• write personal pieces.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• analyze persuasive techniques.</li> <li>• develop and apply verbal and nonverbal elements.</li> <li>• practice critical listening, observing, and thinking skills.</li> <li>• apply language structure conventions.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> </ul>

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<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literary works with strong themes of internal conflict (e.g., “The Tell Tale Heart,” “The Lady or the Tiger”) to identify causes and effects and how authors portray conflicts.</li> <li>• identify techniques in speeches, advertising, and editorials that are used to resolve personal conflicts.</li> <li>• read accounts of conflicts in organizations (e.g., political parties, clubs, teams) to determine how their conflicts affect society’s functioning.</li> <li>• respond to modern periodical articles that promote strategies for decision-making by determining which strategies are most realistic and would make most positive impact on their lives.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop critiques of literary works that evaluate how authors manipulate conflict to achieve their purpose.</li> <li>• create descriptions of Utopia in which no internal organizational conflicts (e.g., politics, gender equity issues) exist.</li> <li>• write speeches that offer solutions that bring unity to groups in conflict.</li> <li>• develop personal essays that describe poor decisions made in particular situations, evaluate process and results of those decisions, and recommend solutions that would produce different, positive outcomes.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• listen to and observe speeches by famous authors (e.g., Martin Luther King, Jr., Patrick Henry) who attempted to resolve conflict to identify how speaker used language, argument, and historical references to persuade their audiences.</li> <li>• prepare and deliver speeches, using appropriate verbal and nonverbal elements to offer group unity solutions.</li> <li>• evaluate speeches of classmates based on persuasive techniques, delivery, languages, and organization.</li> </ul>

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<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• investigate how internal conflicts (e.g., aggression vs. pacifism, greed vs. complacency) have helped shape America's history.</li><li>• prepare for persuasive speeches by exploring groups in internal conflict and solutions that have been used by similar groups.</li></ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use electronic resources (e.g., e-mail, CD-ROM, Web searches) to conduct inquiry.</li><li>• record speeches to self-evaluate delivery techniques.</li></ul>	

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English II: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Organize Information (1.10)</b></p> <p align="center"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p align="center"><b>Think and Solve Problems (5.1, 5.4)</b></p> <p align="center"><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>How can we break through barriers of prejudice to promote tolerance?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• respond to literary works.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• analyze persuasive techniques.</li> <li>• develop and apply appropriate verbal and nonverbal element.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access multiple sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> </ul>

**High School English/Language Arts**  
**English II: Traditional Model**

Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literary works in which prejudice is major conflict (e.g., <i>To Kill A Mockingbird</i>) to analyze causes and effects of prejudice.</li> <li>• analyze in response journals ways in which prejudice is resolved in literary works.</li> <li>• read periodical articles to determine what prejudices are affecting society today.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write academic essays to analyze how authors address prejudice in literary works.</li> <li>• use notes from reading to write character sketches of people identified as resolving or creating prejudice to emphasize lessons for dealing with prejudice.</li> <li>• write transactive pieces (e.g., editorials, brochures, news articles) proposing resolutions to community or school prejudices by showing connections to successful resolutions in literature and history.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• observe videos of modern persuasive speakers and identify propaganda techniques used to influence their audiences about prejudice.</li> <li>• present skits to school and community groups to show positive resolutions to prejudice.</li> </ul>

**High School English/Language Arts  
English II: Traditional Model**

Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate descriptions of prejudice to create personal definitions.</li> <li>identify leaders who have been identified with creating or resolving prejudice (e.g., Hitler, Martin Luther King, Jr.).</li> <li>investigate current local, state, and national issues that create prejudice and proposed solutions.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>view videos of literary works to determine how prejudice may be subtly introduced (e.g., choice of actors and settings).</li> <li>use electronic resources (e.g., Internet, microfiche) to conduct inquiry.</li> </ul>	<p>Groups of advanced level readers who analyzed <i>To Kill A Mockingbird</i> in their eighth grade cluster groups will select, read, and analyze another quality complex piece of literature in which prejudice is the major conflict (e.g., <i>Stones From the River</i>). Students will participate in seminars on prejudice with local college sociology professors. Under guidance of these professors, students will develop simulations on aspects of prejudice and tolerance to use with peers (<i>Types of extensions: purpose and appropriateness, level of support, resources and materials, environment, demonstration of knowledge, complexity, time, magnitude, motivation</i>).</p> <p>Yoshimi has some difficulty interpreting written text. However, her speaking skills are very good. Working in groups, she can improve her skills by portraying characters in the skits (<i>Types of extensions: complexity, resources and materials, level of support, participation</i>).</p>

**High School English/Language Arts**  
**English II: Traditional Model**  
**Student Resources**

**How does geography shape a societies' views of themselves and the world?**

*The Awakening of Osiris*

*Bhagavad Gita*

*The Book of the Dead*

Confucius, *The Analects*

*The Epic of Gilgamesh*

Genesis 1-3 (The Creation and the Fall)

Genesis 6-9 (The Story of the Flood)

“I Think I’ll Go Home and Lie Very Still”

*Mahabharata*

*Psalms* 8, 19, 137

*The Rig Veda*

*Ruth*

*I Samuel* 17 (David and Goliath)

T’ao Ch’en. *Book of Songs*

*Upanishad*

“The Voice of the Swallow, Flittering, Calls to Me”

“Your Love, Dear Man, Is As Lovely to Me”

**How do spiritual beliefs affect one’s perception of himself and others?**

Christianity - *Genesis* 1-3 (“The Creation and the Fall”)

*New Testament* parables

Well, Simone. *What’s So Amazing about Grace*

Judaism - *The Book of Ruth*

Islam - *The Koran* (“The Opening,” “Power,” “Daybreak”)

Hinduism - *Upanishad* (“The Mystery of Brahman”)

*Mahabharata* (“Sibi”)

Buddhism - Kenko. “Essays in Idleness”

Confucianism-*The Analects*

*The Book of Songs*

Taoism - Hoff, Benjamin. *The Tao of Pooh*

Shintoism - Zeami. *The Deserted Crone*

Native American Spirituality - Chief Seattle. *American Indian Stories*

**How do literature, theatre, art, music, and architecture reflect values of society?**

Alighieri, Dante. *The Divine Comedy*

*The Arthur Legend*

Boccaccio, Giovanni. *Decameron*

Chekhov, Anton. “The Bet”

Crane, Stephen. *The Red Badge of Courage*

de Maupassant, Guy. “The Necklace”

Euripedes. *Medea*

Homer. *The Iliad*

Machiavelli, Niccolo. *The Prince*

Mason, Bobbie Ann. *In Country*

**High School English/Language Arts**  
**English II: Traditional Model**

Ovid, *Metamorphoses*  
Plato. *The Apology*  
Rojas, Manuel. "The Glass of Milk"  
Shakespeare, William. *Julius Caesar*  
Shakespeare, William. *The Taming of the Shrew*  
*The Siegfried Legend*  
Sophocles. *Antigone*  
Sophocles. *Oedipus Rex*  
*The Song of Roland*  
Tacitus. *Annals*  
Thucydides. *History of the Peloponnesian War*  
Tolstoy, Leo. "How Much Land Does a Man Need?"  
Virgil. *Aeneid*  
Whitman, Walt. *Leaves of Grass*  
Wordsworth, William. "Ode: Intimations on Immortality"

**How does internal conflict affect relationships and society?**

Brancato, Robin. *Fourth of July*  
Brancato, Robin. *Furlough 1944*  
Greene, Bette. *An Ordinary Woman*  
Knowles, John. *A Separate Peace*  
Milosz, Czeslaw. *A Song on the End of the World*  
Peck, Richard. *Priscilla and the Wimp*  
Poe, Edgar. "The Tell Tale Heart"  
Stockton, Frank. "The Lady or The Tiger"  
Strasser, Todd. *On The Bridge*  
Strasser, Todd. *The Wave*

**How can we break through barriers of prejudice to promote tolerance?**

Helgi, Ursula. *Stones from the River*  
Lee, Harper. *To Kill a Mockingbird*  
Steinbeck, John. *Of Mice and Men*

## **High School English/Language Arts**

### **English III: Traditional Model**

**Prerequisite:** English II

#### **Course Overview:**

The traditional model of English III focuses on a chronological approach to American literature. While the *Program of Studies* does not specify American literature for the junior-level course, it has commonly been taught on that basis. This model demonstrates how traditional literature study can be adapted to requirements of the *Program of Studies*.

While the course is based on literature, it incorporates strands of writing; speaking, listening, observing; inquiry; and technology as communication. Writing is based on models from the reading strand, but also includes reflection on what is read. Other strands also reinforce what is being read and written to provide a cohesive package of language arts instruction.

Because this model contains activities for each of the five strands, each guiding question is organized into a three-page grouping. The first page contains the guiding question, academic expectations, and correlations to the *Program of Studies*. The second and third pages contain activities in each required strand that are correlated to that guiding question. Activities are aligned horizontally to demonstrate how strands work together. For instance, students research persuasive techniques as they read historical persuasive speeches in preparation for videotaping their own speeches. Reading suggested activities both horizontally and vertically will give a complete picture of proposed tasks.

Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations. The third page of each grouping also includes sample extensions for diverse learners.

#### **Guiding Questions:**

- How do early American writings help us understand ourselves and our society?
  
- How did persuasive techniques affect development of early American societies?
  
- How does Romantic period literature reflect American culture of that time?
  
- How did writings of the mid-19th to early 20th century lead to modern writing styles and forms?

**High School English/Language Arts  
English III: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communications (1.16)</b></p> <p align="center"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p align="center"><b>Think and Solve Problems (5.1)</b></p>	<p>How do early American writings help us understand ourselves and our society?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• read and analyze literature.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> <li>• develop literary writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> <li>• collaborate to solve problems.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Traditional Model**

Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/ Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read literature by Native Americans about Native Americans to identify characteristics of oral tradition in America.</li> <li>• identify purposes for nonfiction writings of early settlers' period by focusing on audience and characteristics of specific genres.</li> <li>• compare Northern and Southern writings based on purpose, style, tone, content, beliefs, values, and customs.</li> <li>• read <i>The Scarlet Letter</i> and/or <i>The Crucible</i> to evaluate values, customs, beliefs, attitudes and practices of Puritans and compare those to today.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write animal myths in Native American style to teach lessons.</li> <li>• chart audience characteristics and descriptions of pieces in graphic organizers.</li> <li>• reflect in response journals on selections as they demonstrate characteristics of genres and societies they represent. Compare to today's society.</li> <li>• respond to open-response questions that relate reading materials to personal and social concerns today.</li> <li>• compose editorials on current issues, incorporating allusions to studied works or to culture on which work is based.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use "voices" of Civil War authors to debate war issues of that or another time.</li> <li>• stage mock trials of modern literary characters, using court customs and evidence rules of Native American society or Puritan theocracy.</li> <li>• present Readers' Theatre production of <i>The Crucible</i>, focusing on creating character through vocal interpretation.</li> </ul>



**High School English/Language Arts  
English III: Traditional Model**

Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research customs of specific North American tribes as background for writing myths.</li> <li>• investigate lifestyles of early American settlers to relate their lives to styles, purposes, and audiences of their writing.</li> <li>• investigate accounts of Puritan time period and relate to modern fiction about that period (e.g., <i>The Crucible</i>, <i>The Scarlet Letter</i>) to characterize accuracy of historical fiction.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use multimedia programs to illustrate myths.</li> <li>• use early settlers’ diaries to create “Dateline” segments comparing their lifestyles to ours.</li> <li>• create charts, diagrams, or spread sheets to show comparisons and contrasts of writings.</li> </ul>	<p>Stewart and Thurmond read and studied <i>The Scarlet Letter</i> and <i>The Crucible</i> in eighth grade. They will skim the works and research modern and historical documents pertaining to each. They will prepare and present historical Siskel and Ebert review for each, using language patterns and mannerisms to reflect the culture and time period in which each work was set. <i>(Types of extensions: purpose and appropriateness, complexity, magnitude, time, pace, resources and materials, participation, procedures and routines, motivation, order of learning, demonstration of knowledge, level of support).</i></p> <p>Monica, Peyton, and Preston need supports to help them distinguish important from unimportant information. Prior to reading <i>The Scarlet Letter</i> or <i>The Crucible</i>, the teacher and students develop a unit organizer to identify big ideas to focus their reading. Using the visual map, students connect important information about Puritan values, customs, beliefs, attitudes, and practices. They also use unit organizer to distinguish important information about a modern culture <i>(Types of extensions: procedures and routines, resources and materials).</i></p>

**High School English/Language Arts  
English III: Traditional Model**

**NOTES**

**High School English/Language Arts  
English III: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Social Studies (2.20)</b></p> <p align="center"><b>Connect and Integrate Knowledge (6.1)</b></p>	<p>How did persuasive techniques affect development of early American societies?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• read and analyze literature.</li> <li>• respond to variety of genres.</li> <li>• apply knowledge of literary terms and concepts.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze sources.</li> <li>• paraphrase to adapt information.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Traditional Model**

Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/ Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify persuasive techniques used by Jonathan Edwards in “Sinners in the Hands of an Angry God” and explain why they are appropriate for his identified audience.</li> <li>• analyze oratorical techniques used in speeches of the Revolutionary period (e.g., Patrick Henry’s “Speech to the Virginia Convention”) and impact of those speeches on American society.</li> <li>• determine how persuasive techniques used in Revolutionary propaganda pieces reflect the Age of Reason and use that analysis to explain their success.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write essays, explaining relationships of persuasive techniques and audience in particular writings (e.g., “Sinners in the Hands of an Angry God”).</li> <li>• prepare speeches that rebut points of speeches of Revolutionary period.</li> <li>• write analyses of Age of Reason pieces that reflect understanding of effectiveness of persuasive techniques.</li> <li>• create collaboratively pamphlets of aphorisms to promote healthy lifestyle, patterned after Age of Reason writers (e.g., Ben Franklin).</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• prepare and deliver sermons to convince audiences of particular points of view about living life.</li> <li>• compare techniques of Henry’s and Edward’s speeches to identify how audience, situation, and purpose affect delivery of persuasion.</li> </ul>

**High School English/Language Arts**  
**English III: Traditional Model**

Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use historical resources to create audience profiles for persuasive speeches of early American societies. Use information to analyze effectiveness of speeches.</li> <li>• research historical records of additional speeches to conclude why they were less memorable.</li> <li>• investigate aspects of society (e.g., finances, health) in Age of Reason. Use research to relate to aphorisms.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• videotape student presentations for analysis of effective speaking skills and techniques.</li> <li>• use desktop publishing programs to enhance visual appeal of pamphlet.</li> </ul>	<p>Alexa minimally interacts with her peers, experiences intensive anxiety when speaking in front of peers and adults, and withdraws for instructional activities that require such interaction to the point she would rather receive failing grades than complete activities. She is receiving instruction on developing social competencies. Alexa uses the strategy of approximation to prepare and present her sermon. First, she chooses a partner and reviews her written sermon. She uses a self-assessment guide to evaluate her performance. Her partner uses a feedback guide which outlines behaviors Alexa is working to improve. Then she presents her sermon orally to partner. Next she selects two-four partners and repeats her presentation. This presentation is videotaped to be shown to various audiences (<i>Types of extensions: purpose and appropriateness, participation, level of support, procedures and routines, demonstration of knowledge, motivation, resources and materials</i>).</p>

**High School English/Language Arts  
English III: Traditional Model**

**NOTES**

**High School English/Language Arts  
English III: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p>	<p>How does Romantic period literature reflect American culture of that time?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• read and analyze literature.</li> <li>• respond to variety of genres.</li> <li>• apply knowledge of literary terms and concepts.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop literary writing.</li> <li>• tailor language and conventions.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> <li>• apply critical listening/observing skills</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• paraphrase and summarize to adapt information.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Traditional Model**

Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/ Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify characteristics of Romantic writing through analyses of poetry of that period.</li> <li>• compare Romantic heroes in <i>Leatherstocking Tales</i> to authentic historic figures (e.g., Jefferson, Napoleon) of same time period.</li> <li>• analyze use of satire in Romantic writings to reflect that society’s views of earlier societies (e.g., “The Devil and Tom Walker” criticizes Puritanism).</li> <li>• read Poe’s poetry to identify sound devices, figurative language, and symbolism.</li> <li>• trace development of American short story genre by identifying elements of Poe’s stories.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• prepare summaries of Romantic characteristics as study guides for other students.</li> <li>• create character sketches of Romantic heroes that demonstrate character traits of those heroes.</li> <li>• write essays explaining how particular literary pieces reflect changing attitudes of society.</li> <li>• construct poems or short stories that would be classified as Romantic; demonstrate command of figurative language, symbolism, and imagery.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• listen to recordings of Poe’s poetry to recognize impact of sound devices.</li> <li>• participate in poetry circles to share personal poems that demonstrate use of sound devices and figurative language.</li> </ul>



**High School English/Language Arts  
English III: Traditional Model**

Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>research traits of historic figures to identify whether they characterize concepts of Romantic hero.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>use listening centers to hear impact of sound devices in poetry.</li> <li>create background “music” for Romantic poems (e.g., “The Bells”) by using synthesizer for sounds.</li> </ul>	<p>Franz is fluent in his native language. He has a strong background in literature from his culture and is familiar with various writing styles. His poem exhibits characteristics of the Romantic movement. His peer editor helps with language structure and vocabulary (<i>Types of extensions: purpose and appropriateness, level of support, demonstration of knowledge</i>).</p>

**High School English/Language Arts  
English III: Traditional Model**

**NOTES**

**High School English/Language Arts  
English III: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p>	<p>How did writings of the mid-19th to early 20th century lead to modern literature?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• read and analyze literature.</li> <li>• respond to variety of genres.</li> <li>• apply analytical reading skills.</li> <li>• read for enjoyment.</li> <li>• interpret vocabulary.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> <li>• develop literary writing.</li> <li>• tailor use of language and conventions.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> <li>• apply critical listening/observing skills</li> <li>• collaborate to solve problems.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze appropriate sources.</li> <li>• paraphrase and summarize information.</li> <li>• evaluate appropriateness of material accessed through technology.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts  
English III: Traditional Model**

<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read works set in wartime (e.g., Civil War, World War I, World War II, Vietnam) to compare ways characters and society react to conflict.</li> <li>• analyze how common man was depicted in 19th-century literature and in today’s literary works to reflect values of society at different times.</li> <li>• trace impact of western expansion on setting, language, and characters in short stories and novels.</li> <li>• analyze yellow journalism periodicals to show their effects on contents and writing styles of today’s newspapers and magazines.</li> <li>• evaluate how democratic ideas are presented in various works of 19th and 20th century to reflect ways patriotism has changed.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compose hymns or patriotic songs to depict specific themes and purposes.</li> <li>• write historical fiction (e.g., short stories, plays) that accurately depict people and ideals of particular time periods.</li> <li>• prepare literary maps to show how western expansion impacted literature.</li> <li>• write news stories about same event in styles of yellow journalism and today’s investigative reporting. Critique how yellow journalism matches modern criteria for effective writing.</li> <li>• respond to open-response questions about changes in democratic ideas in the past 150 years.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• listen to words of hymns, spirituals, and patriotic songs of America’s wartimes to compare language, mood, themes, and purposes.</li> <li>• produce historical simulations to reflect differences in verbal and nonverbal language of various time periods.</li> <li>• observe early videos of news coverage to compare to today’s coverage of similar events, both in ways media cover events and how newsmakers behave.</li> </ul>

**High School English/Language Arts  
English III: Traditional Model**

<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research attitudes of American public toward different wars, to trace differences in society.</li> <li>• select topics that would be covered by news media (e.g., violence, elections) and compare coverage in format and styles through various time periods. Evaluate whether video or print archives offer best view of historical events.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use presentation software to create literary maps with video and sound clips.</li> <li>• write and produce newscasts from the past reflecting customs of society, writing styles, and actual events of particular dates in history.</li> </ul>	<p>John’s grandfather was killed in Vietnam and he still reacts violently to any references to war. Instead of reading materials related to how society reacted to war, he will be assigned to research attitudes of American public toward another topic (e.g., health care). His writing and reading will be about conflicts surrounding that issue (<i>Types of extensions: purpose and appropriateness, motivation, resources and materials</i>).</p>

**High School English/Language Arts**  
**English III: Traditional Model**  
**Student Resources**

**How do early American writings help us understand ourselves and our society?**

Benet, Stephen. "We Aren't Superstitious"  
Earle, Alice Morse. *Life in Colonial New England*  
Fleischer, Jane. *Pontiac: Chief of the Ottawas*  
Fleischer, Jane. *Tecumseh: Shawnee War Chief*  
Hawthorne, Nathaniel. "The Minister's Black Veil"  
Hawthorne, Nathaniel. *The Scarlet Letter*  
Hawthorne, Nathaniel. "Young Goodman Brown"  
Jassem, Kate. *Chief Joseph: Leader of Destiny*  
Joseph, Chief. "I Will Fight No More"  
Kennedy, John F. *A Nation of Immigrants*  
Michener, James. *Hawaii*  
Miller, Arthur. *The Crucible*  
Seattle, Chief. "This We Know"  
Tunis, Edsin. *Indians*

**How did persuasive techniques affect development of early American societies?**

Edwards, Jonathan. "Sinners in the Hands of an Angry God"  
Franklin, Benjamin. *Poor Richard's Almanac*  
Henry, Patrick. "Speech to the Virginia Convention"

**How does Romantic literature reflect American culture of that time?**

Cooper, James. *Leatherstocking Tales*  
Hawthorne, Nathaniel. *The House of Seven Gables*  
Irving, Washington. "The Devil and Tom Walker"  
Poe, Edgar. "The Bells"  
Poe, Edgar. "Annabelle Lee"  
Poe, Edgar. "The Raven"

**How did writings of the mid-19th to early 20th centuries lead to modern literature?**

Chopin, Kate. *The Awakening*  
Crane, Stephen. *The Red Badge of Courage*  
Crane, Stephen. *War Is Kind*  
Fitzgerald, F. Scott. *The Great Gatsby*  
Frazier, Charles. *Cold Mountain*  
Hemingway, Ernest. *The Old Man and the Sea*  
Hunt, Irene. *Across Five Aprils*  
Kantor, MacKinley. *Andersonville*  
Lincoln, Abraham. "Gettysburg Address"  
Mitchell, Margaret. *Gone with the Wind*  
Santoli, Al. *Everything We Had: An Oral History of the Vietnam War by Thirty-Three American Soldiers*  
Steinbeck, John. *The Grapes of Wrath*  
Steinbeck, John. *Of Mice and Men*

**High School English/Language Arts**  
**English III: Traditional Model**

Stowe, Harriet. *Uncle Tom's Cabin*

Twain, Mark. *Adventures of Huckleberry Finn*

## High School English/Language Arts

### English IV: Traditional Model

**Prerequisite:** English III

#### **Course Overview:**

This English IV model integrates the five strands of English/Language Arts around a traditional approach. While specific works of literature are not the focus of the course, students read works from both British and contemporary authors as a foundation for the other activities in writing, speaking, listening, observing, inquiry, and using technology for communication.

This course, however, goes beyond a traditional study of literature. As outlined in the *Program of Studies*, students must also use communication skills to prepare them for postsecondary interests and career goals.

Because this model contains sample activities for each of the five strands, each guiding question is organized into a three-page grouping. The first page contains the guiding question, academic expectations, and correlations to the *Program of Studies*. The second and third pages contain activities in each required strand that are correlated to that guiding question. Activities are aligned horizontally to demonstrate how strands work together. For instance, students read how-to manuals in conjunction with writing manuals and use technology to effectively produce them. Reading suggested activities both horizontally and vertically will give a complete picture of proposed tasks.

Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations. The third page of each grouping also includes sample extensions for diverse learners.

#### **Guiding Questions:**

- How does literature reflect time periods, cultures, and writing styles of British and contemporary writers?
- How do reading and writing impact my college and career choices and preparation?
- How do consumer publications help me become a better evaluator and user of products?
- What are appropriate avenues to express opinions to various audiences?



**High School English/Language Arts  
English IV: Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Organize Information (1.10)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1)</b></p>	<p>How does literature reflect time periods, cultures, and writing styles of British and contemporary writers?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• respond to literary genres.</li> <li>• analyze use of literary terms and concepts.</li> <li>• read for enjoyment.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to-learn strategies.</li> <li>• write transactive pieces.</li> <li>• apply genre features.</li> <li>• use handbooks, style manuals, and models.</li> <li>• apply writing process.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for oral presentations.</li> <li>• respond to delivery elements.</li> <li>• apply listening and observing skills.</li> <li>• evaluate presentations.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information.</li> <li>• apply thinking strategies.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> <li>• develop and evaluate use of technology.</li> </ul>

**High School English/Language Arts  
English IV: Traditional Model**

<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create time lines for periods of literature and history to show changes throughout time.</li> <li>• read both fiction and nonfiction produced during specific time periods and compare ways society is shown in responses to open-response situations.</li> <li>• read works of same genre and topic from different time periods and compare authors' styles.</li> <li>• critically analyze pieces of literature, using knowledge of literary conventions and genres.</li> <li>• read literary works by contemporary British authors to identify what they reveal about their society.</li> <li>• read works by contemporary authors and/or song writers to compile lists of similar traits.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write day-to-day journals of what authors or characters may have experienced. Include historically accurate events to place fiction within historical context.</li> <li>• evaluate literature using criteria for effective writing and present findings in literary reviews.</li> <li>• write essays (possibly as satire) or speeches that expose social ills and promote solutions.</li> <li>• correspond with British pen pals to compare ideas of how British society is portrayed in various literary works.</li> <li>• conduct book talks of contemporary works with students from different schools, backgrounds, and cultures via e-mail.</li> <li>• write lyrics to songs, based on compiled lists of traits.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• present time lines in electronic and print format to the class.</li> <li>• become characters or authors studied. Relate experiences living and working in the time period in journals. Dress or illustrate costumes, customs, scientific advances, artistic works, and historical events of time periods.</li> <li>• give speeches to class and other groups who could respond to recommendations about social conditions.</li> <li>• evaluate impact of music videos and CDs of modern songs.</li> <li>• sing, rap, or recite lyrics to poetry written.</li> </ul>

**High School English/Language Arts  
English IV: Traditional Model**

Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research historical characters and events, scientific discoveries, and artistic works of different time periods.</li> <li>• research particular characters or authors to identify how they lived in particular time periods.</li> <li>• after reading other criticisms, critique various literary pieces to compare time periods, genres, and conventions.</li> <li>• collect information about social ills in different time periods. Analyze information, comparing historical problems with similar social problems of today.</li> <li>• evaluate current poets and song writers and their roles in modern society as compared to roles of authors, actors, and artists in different historical times.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use time line software to create time lines across periods of literature. Present in electronic format. Print on banner-sized tractor paper.</li> <li>• use Internet and CD-ROM resources to investigate time periods, characters, and authors.</li> <li>• set up e-mail, video conferences, or videotaping sessions to correspond with contemporary authors.</li> <li>• plan and develop idea exchange programs across Internet and e-mail about contemporary literary works.</li> <li>• use CD-ROMs and Internet to download and listen to various current music artists. Edit music videos with editing capabilities of VCRs and video camera. Use video equipment to create music video for original lyrics.</li> </ul>	<p>Kordell struggles with activities having multiple steps, efficiently completing activities, understanding reading materials written on lower levels, and retrieving information read. To assist Kordell and other students who have difficulty planning assignments, the teacher facilitates brainstorming sessions to generate ideas about multiple ways to complete activities. Following the session, the teacher conferences with Kordell to develop planning strategy guides to use as references to complete activities. Kordell's teacher uses the Guided Reading Procedure to develop his reading skills and strategies. He also views captioned videos of historical accounts. As he reads he uses color coded index cards to record important details. While classmates focus on multiple periods and cultures, Kordell focuses on current problems in two periods and two cultures (<i>Types of extensions: magnitude, resources and materials, level of support, procedures and routines</i>).</p>

**High School English/Language Arts  
English IV: Traditional Model**

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**High School English/Language Arts  
English IV: Traditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p align="center"><b>Think and Solve Problems (5.1)</b></p>	<p>How do reading and writing impact my preparation for college and career choices?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate types of reading.</li> <li>• apply reading skills to complete tasks.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• apply genre features.</li> <li>• use handbooks, style manuals, and models.</li> <li>• apply writing process.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• apply verbal and nonverbal elements.</li> <li>• apply listening and observing skills.</li> <li>• evaluate presentations.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> </ul>

**High School English/Language Arts  
English IV: Traditional Model**

<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read works of fiction with characters engaged in particular careers and chart information about practice of those careers.</li> <li>• read memoirs of professionals in targeted careers and create profiles of characters' work and traits.</li> <li>• read variety of research materials to compile information on particular colleges and careers.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write literary pieces (e.g., poems, short stories) that address intrinsic rewards of chosen occupations.</li> <li>• take notes on research to organize information for responses.</li> <li>• write resumes, cover letters, or applications for particular career positions.</li> <li>• write recruitment ads for jobs in communities.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• role-play interviews with prospective employees for particular careers.</li> <li>• present benefits of colleges or vocational schools, and/or training programs to encourage students to choose that postsecondary program. Promotional materials could include various media (e.g., spoken, visual, digital, Internet, multimedia).</li> <li>• analyze how bias is presented in college recruitment videos.</li> </ul>

**High School English/Language Arts  
English IV: Traditional Model**

<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• gather information on careers' requirements and projected monetary rewards, expectations, and responsibilities compared to cost of training.</li> <li>• investigate colleges. Include information such as programs, majors, costs, and locations.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use spreadsheets to chart expected earnings and costs of training for careers. Include cost of living adjustments for particular locations.</li> <li>• contact colleges, vocational schools, and training programs through e-mail and Web sites to learn about entrance qualifications.</li> <li>• create posters to demonstrate colleges and vocational schools by using digital photos and electronic art.</li> <li>• evaluate college Web sites for quality of information, ease of access, appeal to audience, and clarity.</li> </ul>	

**High School English/Language Arts  
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**High School English/Language Arts  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p>	<p>How do consumer publications help me become a better evaluator and user of products?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• apply genre features.</li> <li>• use handbooks, style manuals, and models.</li> <li>• apply writing process.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• apply verbal and nonverbal elements.</li> <li>• apply listening and observing skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information.</li> <li>• engage in decision-making.</li> <li>• apply logical and critical thinking strategies.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> </ul>

**High School English/Language Arts  
English IV: Traditional Model**

<b>Sample Reading Activities</b>	<b>Sample Writing Activities</b>	<b>Sample Speaking/Listening/ Observing Activities</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• follow directions given in how-to manuals or articles to evaluate clarity and completeness.</li>   <li>• examine content and format of consumer-report-type surveys.</li>   <li>• read tourism publications to determine facts and appeals of various locations.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write chapters in how-to manuals (e.g., how to set up a computer in your home, how to videotape and edit a movie), demonstrating effective transactive writing skills.</li>   <li>• write articles for consumer newsletters that give comparison results from consumer surveys of scientific discoveries; include charts, graphs, illustrations.</li>   <li>• write convenience comparisons of modern vacations and medieval trips focusing on how consumer information facilitated modern trips.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• demonstrate effectiveness of how-to manuals by performing various tasks exactly as written.</li>   <li>• administer consumer surveys to evaluate opinions of products, customs, or scientific discoveries.</li>   <li>• deliver informative speeches on vacation destinations with support through virtual visits on the Internet, pamphlets, itineraries, and cost analyses.</li> </ul>

**High School English/Language Arts  
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<b>Sample Inquiry Activities</b>	<b>Sample Technology as Communication Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>gather data from consumer surveys for products and services.</li> <li>use various sources to determine travel needs of the trip made by <i>The Canterbury Tales</i> pilgrims. Devise travel guides with financial advice about making the trip.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>create graphs, charts, and original artwork to illustrate how-to manuals.</li> <li>use desktop publishing programs to create books, chapters, tables of contents, and indexes for books being compiled.</li> <li>create Web sites for information from consumer surveys. Link to appropriate sites to illustrate information.</li> </ul>	<p>Students will address their need to apply sophisticated reasoning skills by analyzing elements of formal and informal logic and persuasive techniques in Revolutionary period speeches including Henry's and Edward's. They will identify and evaluate effectiveness and appropriateness of use of such elements as specific persuasive techniques, assumptions, inferences, cause-effect relationships, analogies, and logical structure of arguments. They will design and apply rubrics, and write comments for consumer products (<i>Types of extensions: purpose and appropriateness, complexity, resources and materials, participation, level of support, procedures and routines, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Think and Solve Problems</b> (5.1, 5.4, 5.5)</p>	<p>What are appropriate avenues to express opinions to various audiences?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• read for enjoyment.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• use handbooks, style manuals, and models.</li> <li>• apply writing process.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for oral presentations.</li> <li>• evaluate oral presentations.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information.</li> <li>• engage in decision-making.</li> <li>• apply logical and critical thinking strategies.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> </ul>

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Sample Reading Activities	Sample Writing Activities	Sample Speaking/Listening/Observing Activities
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• select and read materials about current community issues or needs.</li> <li>• evaluate effectiveness of campaigns for school improvement or community projects, social issues, politicians, or nonprofit organizations, by examining print and broadcast ads, public service announcements, news articles and other materials.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• take notes and organize information on current community issues or needs to prepare for persuasive campaign.</li> <li>• write news articles for consumer publications, comparing campaigns.</li> <li>• design promotional campaigns to effectively reach targeted audiences on current community issues or needs. Campaign should include multiple modes (e.g., video, brochure, editorial, newsletter, advertising).</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• present ad campaigns to class, community groups, or school-based decision making council using speeches, posters, digital presentations, and taped commercials.</li> <li>• evaluate success of promotions based on whether the group bought products or voted for issues.</li> </ul>

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Sample Inquiry Activities	Sample Technology as Communication Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research community issues or needs to develop campaigns that promote change.</li> <li>• read or listen to speeches of past and present politicians and reformers as patterns for persuasion.</li> <li>• evaluate persuasive effectiveness of Internet pages and advertisements that promote issues, agendas, groups, and products.</li> </ul>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use presentation software, presentation hardware, videotaped commercials, and desktop publishing software to create posters, print ads, video ads, Web sites, and presentations that promote projects, products, politicians, or nonprofit organizations.</li> <li>• use digital cameras and digital video cameras to illustrate and present campaigns to appropriate group(s).</li> </ul>	

# High School English/Language Arts

## English IV: Traditional Model

### Student Resources

#### **How does literature reflect time periods, cultures, and writing styles of British and contemporary writers?**

Austen, Jane. *Pride and Prejudice*  
*Beowulf*  
Bunyan, John. *The Pilgrim's Progress*  
Burney, Fanny. *Evelina*  
Burns, Robert. *To A Mouse*  
Carroll, Lewis. *Alice in Wonderland*  
Chaucer, Geoffrey. *The Canterbury Tales*  
Dickens, Charles. *Hard Times*  
Golding, William. *Lord of the Flies*  
Knowles, John. *A Separate Peace*  
Lawrence, D. H. "The Rocking Horse Winner"  
Milton, John. *Paradise Lost*  
Shakespeare, William. *Hamlet*  
Shakespeare, William. *Macbeth*  
Shaw, G. B. *Pygmalion*  
Swift, Jonathan. *Gulliver's Travels*  
Swift, Jonathan. "A Modest Proposal"  
Thomas, Dylan. "Do Not Go Gentle Into That Good Night"  
Trevelyn, George. *Social History of England*  
[www.elizreview.com](http://www.elizreview.com) (elizabethan literature)  
[www.folger.edu](http://www.folger.edu) (literature)  
<http://shakespeare.eb.com>

#### **How do reading and writing impact my preparation for college and career choices?**

Downey, Lynn. "Levi Strauss: A Biography"  
Fanthorpe, U.A. "You Will Be Hearing from Us Shortly"  
Ferguson, J.G. *Encyclopedia of Careers and Vocational Guidance*  
Herriot, James. *All Things Bright and Beautiful*  
Kasparov, Garry. *Unlimited Challenge*  
Meir, Golda. *My Life*  
Miller, Arthur. *Death of a Salesman*  
Prevert, Jacques. "To Paint the Portrait of a Bird"  
[www.careermag.com](http://www.careermag.com)  
[www.fastweb.com](http://www.fastweb.com) (scholarships)  
[www.petersons.com](http://www.petersons.com) (colleges)

#### **How do consumer publications help me become a better evaluator and user of products?**

[www.pathfinder.com/money](http://www.pathfinder.com/money) (Money Magazine)  
[www.localeyes.com](http://www.localeyes.com) (geographic)  
[www.cntraveler.com](http://www.cntraveler.com) (CondeNast)  
<http://webtravel.org/webtravel>  
HYPERLINK <http://www.travelchannel.com>  
[www.travelchannel.com](http://www.travelchannel.com)



**High School English/Language Arts**  
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**What are appropriate avenues to express opinions to various audiences?**

Ravitch, Diane, ed. *Democracy Reader*, Diane Ravitch, ed.

<http://msstate.edu/Archives/History/USA/AfroAmer/mlk.html> (Martin L. King speeches)

## High School English/Language Arts Nontraditional Model

In the English I - IV series that follows, teachers are offered one approach to courses that organizes instruction in all strands in the *Program of Studies*, provides continuity to instruction in high school English, and engages students in learning that has relevance to them now and in the future. Though the series is presented as a linked sequence, teachers could select one or more course models to use with students. For instance, the plan for English I may be selected while another model may not be. Certainly, teachers could modify what is indicated to fit their own students and still address the strands required by the *Program of Studies*. Though different courses are linked in theme, organized similarly, and designed to engage students in the same required strands, each course is different, drawing students into different learning, and may be approached differently.

Following the model and discussion provided in *Transformations: Kentucky's Curriculum Framework*, the series offered here is unified by its major focus. The guiding questions offered for each course provide another means of organizing instruction to help students address all strands in the *Program of Studies*. The major focus of the sequence is the concept of "place," a concept that is intended to be interpreted broadly. When we refer to our "place," we may have in mind a location. We may have in mind family, school, community, state, nation, and the world. But we also think of positions in groups, relationships with others, ways of looking at issues or problems, levels of performance, conditions in society, or features of cultures. Dimensions of "place" pertain to many parts of human experience, past, present, and future. For hundreds of years and in all cultures, people have focused on the many "places" that influence their lives. They have investigated "place," read about others' views of "places," communicated their ideas about "place," observed "places" of all sorts, spoken with others and listened to their views, and have used technology tools to learn more and communicate with others about "places" of their lives. Many issues, past, present, and future, may be considered through the concept of "place"; many artistic expressions focus on "place" of one sort or another; and much of the communication that people experience pertaining to "place" extends to our culture, other cultures, and the human experience in general.

Within the focus of place, teachers still may make many choices. Some teachers may prefer to narrow the cultures and the human experience in general. Others may prefer to narrow the interpretation, offering students a particular focus on "place." Teachers are encouraged to use the concept of "place" in ways that will be especially meaningful to their own students. Certainly, a variety of print and nonprint reading materials may be offered. Literary, personal, and transactive materials may be selected. Different projects and tasks may be designed. Different forms of communication may be used. The potential is great, as is the range of available resources.

## **High School English/Language Arts Nontraditional Model**

Samples of literary materials can reveal the potential for the series. Consider, for example, spiritual dimensions of “place” in *Heart of Darkness*; cultural features and personalities of “place” in *The Canterbury Tales*, *Of Mice and Men*, or *Our Town*; social conditions of “place” and ideas about them in Dickens’s *Hard Times* or *Great Expectations*; psychological “places” explored in Kafka’s “Metamorphosis,” nature of relationships in Chopin’s *The Awakening* and Williams’s *A Streetcar Named Desire*; social tensions of “place” in *To Kill A Mockingbird*; political and human cruelty in places torn by warfare in *War and Peace*, *Red Badge of Courage*, and in various pieces of literature about Vietnam; and complex views of civilization in Eliot’s *The Wasteland*.

Many literary classics may be approached through the organizer for this series. Similarly, many contemporary works, even newspapers and workplace materials, may be included, as may materials at different reading levels and a variety of nonprint sources and collections, such as *The Great Speeches* series. Materials may be selected to represent time periods or genres or a body of literature (e.g., American literature). Place is a powerful concept and many materials may serve as resources. Teachers easily can find a variety of works concerning “places” of human experience that students will find meaningful in their lives.

## High School English/Language Arts

### English I: Nontraditional Model

#### Course Overview:

The English I nontraditional model places all content for the one-credit course within a thematic approach. The theme, “My Places in Time,” focuses on “What conclusions can I draw about **places** where I am and where I want to be?” In this course, students combine their study of reading, writing, technology as communication, and speaking, listening, and observing in the context of inquiry-based learning. Activities are designed to strengthen communications skills of all students while exploring real-life contexts for their discoveries.

The major focus of the English/Language Arts nontraditional series of courses is “**place**,” a concept that is intended to be interpreted broadly. When we refer to our “**place**,” we may have in mind locations. We may have in mind family, school, community, state, nation, and the world. But we also may have in mind positions in groups, relationships with others, ways of looking at issues or problems, levels of performances, mind sets, conditions in society, or features of cultures.

Models are organized around guiding questions. Guiding questions direct teachers’ choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to *Program of Studies* content. Sample activities and sample extensions for diverse learners are found on the right-hand page. Activities are intended to integrate multiple strands of communication. Activities include, for instance, inquiring about topics and then presenting that information in writing and speaking. Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations.

#### Guiding Questions:

- How do reading and inquiry (investigations through a variety of sources) help me identify and define the important **places** in my life and clarify thoughts about them?
- How do people use different artistic forms and techniques to communicate meaning about important **places** and their influences?
- Through reading, speaking, listening, and observing, what conclusions can I reach about my **places** and about how well I fit into **places** that have important influences on me?
- Through my inquiry (investigations through a variety of sources), what conclusions can be reached about **places** in my life and what about places I would like to be?

**High School English/Language Arts  
English I: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Think and Solve Problems (5.1, 5.3, 5.4)</b></p> <p><b>Connect and Integrate Knowledge (6.2, 6.3)</b></p>	<p>How do reading and inquiry help me identify and define the important <b>places</b> in my life and clarify thoughts about them?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze informational material.</li> <li>• respond critically to a variety of genres.</li> <li>• identify writers’ purposes and techniques.</li> <li>• select and read for enjoyment.</li> <li>• understand vocabulary in context.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• write transactive pieces.</li> <li>• write personal pieces.</li> <li>• write literary pieces.</li> <li>• critique own and others’ works.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• apply appropriate verbal and nonverbal elements.</li> <li>• apply critical listening and observing strategies.</li> <li>• use correct and appropriate language in speaking.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts**  
**English I: Nontraditional Model**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate print and nonprint sources to identify characteristics of <b>places</b>. Develop definitions of <b>place</b> for personal essays. Make connections to real-world experiences. Use style manuals to prepare writing for publication in identified periodicals.</li> <li>• research physical <b>places</b> in the world through tourism publications, reference books, and web sites. Prepare interactive learning centers for younger students about <b>places</b> that include facts, photographs, quotes, sound clips, and cultural artifacts.</li> <li>• read literary works (e.g., poems, short stories, novels) to determine writers' views of what makes <b>places</b> important. React to views through response journals, reading logs, small group discussions, and literature circles. Create own literary writing incorporating important qualities of <b>places</b>.</li> </ul> <p><i><b>Technology suggestion:</b> Use Internet to communicate with people from other parts of the world about places in which they live.</i></p>	<p>Jaimito has recently moved to the United States. He has difficulty expressing in English his memories of places important to him. He will develop photo essays to create definitions of places important to him. Peers will assist him to prepare captions in English to identify characteristics of those places (<i>Types of extensions: demonstration of knowledge, purpose and appropriateness, procedures and routines, level of support</i>).</p>

**High School English/Language Arts  
English I: Nontraditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Arts and Humanities</b> (2.24, 2.25)</p> <p><b>Think and Solve Problems</b> (5.1, 5.3, 5.4)</p> <p><b>Connect and Integrate Knowledge</b> (6.1, 6.2, 6.3)</p>	<p>How do people use different artistic forms and techniques to communicate meaning about important <b>places</b> and their influences?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze informational material.</li> <li>• respond critically to a variety of genres.</li> <li>• identify writers’ purposes and techniques.</li> <li>• select and read for enjoyment.</li> <li>• understand vocabulary in context.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• write personal pieces.</li> <li>• write literary pieces.</li> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• critique own and others’ works.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• demonstrate awareness of audience, purpose, and situation in oral presentations.</li> <li>• apply verbal and nonverbal elements of delivery.</li> <li>• apply strategies for critical listening and observing.</li> <li>• use correct and appropriate language in speaking.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts**  
**English I: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• access museum sites on Internet to view artistic works that focus on <b>places</b>. Categorize works by what they reveal about <b>places</b>. Develop transactive writings that explain and analyze how works relate to each other.</li> <li>• read historical accounts of cultures and identify artistic works that originated in those cultures. Reach conclusions about how cultural influences and values impacted certain artistic works. Use multimedia to enhance presentations on how artworks reflect their cultures.</li> </ul> <p><i>Technology suggestion: Use Internet sites to research historical events.</i></p> <ul style="list-style-type: none"> <li>• compare fairy tales from different cultures based on what they reveal about those cultures. Adapt fairy tales from one culture to another or write original fairy tales as they might be told in two different cultures. Videotape presentations to create programs for younger students. Use appropriate storytelling techniques to enhance presentations.</li> </ul>	<p>Charlotte and Dustin have difficulty connecting prior knowledge to new information, processing and understanding language, paraphrasing what they have read, and monitoring their comprehension when reading. Brett moves frequently and is often absent, therefore he has missed critical concepts and vocabulary. Prior to introducing the activity, the teacher pretests students' understanding of vocabulary and concepts needed for the assignment (e.g., story elements, fairy tale). Several students, including these three, do not have background knowledge to begin the activity. Teacher and students build vocabulary webs and guided notes for reference tools. Using selected fairy tale, teacher models variety of reading strategies to identify characteristics of fairy tales. Students will use plot maps and other graphic organizers to develop their fairy tales based on models (<i>Types of extensions: resources and materials, level of support, procedures and routines, order of learning</i>).</p>



**High School English/Language Arts  
English I: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.4)</b></p> <p><b>Connect and Integrate Knowledge (6.2, 6.3)</b></p>	<p>Through reading, speaking, listening, and observing, what conclusions can I reach about my <b>places</b> and about how well I fit into <b>places</b> that have important influences on me?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read informational material.</li> <li>• respond critically to a variety of genres.</li> <li>• select and read for enjoyment.</li> <li>• understand vocabulary in context.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• write personal pieces.</li> <li>• critique own and others' works.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• demonstrate awareness of audience, purpose, and situation in oral presentations.</li> <li>• apply critical listening and observing skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts**  
**English I: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read and draw conclusions about <b>places</b> in their lives, how they fit into those <b>places</b>, and how those <b>places</b> influence them. Observe film and visual arts of selected <b>places</b>. Interview people in those <b>places</b>. Participate in debates or panel discussions about which <b>places</b> are suited for particular people.</li> </ul> <p><i>Technology suggestions: Videotape interviews of people from selected <b>places</b>. Use videos as support for debates.</i></p> <ul style="list-style-type: none"> <li>• prepare museum exhibits for <b>places</b> of importance. Write materials to accompany exhibits. Produce documentaries about same <b>places</b>.</li> </ul> <p><i>Technology suggestions: Use multimedia software to connect to Internet sites and incorporate graphics, audio, and video clips into documentaries.</i></p> <ul style="list-style-type: none"> <li>• develop personality inventory instruments. Create descriptions of important <b>places</b>. Administer surveys to classmates and others to determine which personalities match which <b>places</b>. Report survey results in transactive writing (e.g., news articles, speeches, proposals) for school newspaper.</li> </ul>	<p>Julie is a talented writer, but has difficulty in her interpersonal relationships. She is especially shy when presenting to classmates. Julie will be assigned to administer the survey to small groups of younger students. To prepare for administering the survey, her teacher will assist in preparing a script of survey directions. She will practice giving those directions on videotape and will participate in critiquing sessions with classmates who excel in presentations. Julie will prepare a sidebar story for the newspaper article on how to prepare and administer surveys effectively (<i>Types of extensions: procedures and routines, resources and materials, demonstration of knowledge, level of support, participation</i>).</p>

**High School English/Language Arts**  
**English I: Nontraditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Arts and Humanities</b> (2.25)</p> <p><b>Think and Solve Problems</b> (5.1, 5.3, 5.4, 5.5)</p> <p><b>Connect and Integrate Knowledge</b> (6.2, 6.3)</p>	<p>Through my inquiry (investigations through a variety of sources), what conclusions can be reached about <b>places</b> in my life and about <b>places</b> I would like to be?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read informational material.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• critique own and others' works.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• demonstrate awareness of audience, purpose, and situation in oral presentations.</li> <li>• apply verbal and nonverbal elements.</li> <li>• apply critical listening and observing strategies.</li> <li>• use correct and appropriate language in speaking.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access resources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to complete tasks.</li> </ul>

**High School English/Language Arts**  
**English I: Nontraditional Model**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• prepare plans of inquiry to investigate nonphysical <b>places</b> in their lives. Evaluate conclusions of research and present findings to others. Exchange information about important <b>places</b> through long-distance teleconferencing or e-mail.</li><li>• use desktop publishing programs and knowledge of text features to produce promotional materials about desired <b>places</b>.</li><li>• create proposals to identify improvements to make <b>places</b> more accessible. Research laws that affect access to public buildings. Interview those who will be impacted by increased accessibility. Present proposal to local decision-making group.</li></ul> <p><i>Technology suggestion: Use multimedia to prepare visuals for proposal presentation.</i></p>	

**High School English/Language Arts  
English I: Nontraditional Model**

**NOTES**

## High School English/Language Arts

### English II: Nontraditional Model

**Prerequisite:** English I

#### **Course Overview:**

The English II nontraditional model organizes all content for the course within a thematic approach based on the broad concept of **place** in human experience. The theme or major focus for the series, “My Places, Yours, and Theirs,” may be phrased for English II as a question: “What conclusions can be reached about **places** based on understanding different views and what alternatives and changes to these **places** can be proposed?” In this course, students’ learning is organized around this theme, with its broad interpretations, and, focusing on the theme, students combine their work in reading, writing, speaking, listening, observing, inquiry, and using technology, thus addressing the strands identified in the *Program of Studies*. Various activities are designed to help students develop all strands, while exploring important concepts relevant to their lives.

Models are organized around guiding questions. Guiding questions direct teachers’ choices of activities and are the questions student should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to *Program of Studies* content. Sample activities and sample extensions for diverse learners are found on the right-hand page. Sample activities are intended to integrate the multiple strands of communication. Activities include, for instance, inquiring about a topic and then presenting that information through writing and speaking. Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations.

#### **Guiding Questions:**

- How does reading of literature and other materials help me understand different views of **places** and determine alternatives and changes to them?
- What techniques do artists and others use to convince people to accept their views of different **places** and how effective is their use of these techniques?
- From inquiry (investigations through a variety of sources) speaking, listening, and observing, what can I learn about **places** in the work world?
- Through study of different views of **places**, what alternatives and changes do I think best to improve my life and the lives of others?

**High School English/Language Arts  
English II: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4,)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.2, 5.3, 5.5)</b></p> <p><b>Connect and Integrate Knowledge (6.1, 6.2, 6.3)</b></p>	<p>How does reading of literature and other materials help me understand different views of <b>places</b> and determine alternatives and changes to them?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze persuasive materials.</li> <li>• respond critically to and analyze literary genres.</li> <li>• select and read for enjoyment.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• practice critical listening, observing, and thinking skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access, compare, and document sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to present information.</li> </ul>

## High School English/Language Arts English II: Nontraditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• select and read various materials to identify different individual and cultural views of <b>places</b>. Record paraphrased descriptions of <b>places</b> in journal entries.</li> <li>• use graphic organizers to chart similarities and differences in settings (<b>places</b>) in different literary works. Compare settings from various periods to draw conclusions about how that element is used in periods. Develop literary writing in which setting plays a major function.</li> <li>• collaboratively plan and conduct surveys of classmates' perceptions of their school. Use information to prepare transactive writings (e.g., news articles, editorials, letters to School-Based Decision Making Council, speeches to student council) about how students view the school.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use presentation software or desktop publishing to enhance publication of writing.</i></p> <ul style="list-style-type: none"> <li>• investigate and compare opposing views on critical contemporary issues. Report results through media presentations that communicate issues and offer alternatives and changes to those issues.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use presentation software to convey information.</i></p> <ul style="list-style-type: none"> <li>• choose <b>places</b> important to them. Investigate why and how <b>places</b> exist and why they are important. Use that information as basis for personal writing (e.g., personal narrative, memoir, personal essay) in which <b>place</b> plays important roles.</li> </ul>	



**High School English/Language Arts  
English II: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3,1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.2, 5.4)</b></p> <p><b>Connect and Integrate Knowledge (6.1, 6.2, 6.3)</b></p>	<p>What techniques do artists and others use to convince people to accept their views of different <b>places</b> that influence our lives, and how effective is their use of those techniques?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze persuasive materials.</li> <li>• respond critically to and analyze literary genres.</li> <li>• interpret structure and organization.</li> <li>• identify points of view.</li> <li>• understand vocabulary in context.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• analyze persuasive techniques.</li> <li>• practice critical listening, observing, and thinking skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access, compare, and document sources.</li> <li>• evaluate credibility.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> <li>• use technology to present information.</li> </ul>

## High School English/Language Arts English II: Nontraditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate how people try to persuade others to accept certain views of <b>places</b>. Listen to speeches and commercials and read advertisements and editorials to determine points of view, audiences, what appeals are used, language, credibility, and formats. Compare in graphic organizers how the medium affected messages. Prepare consumers' guides for persuasion of views.</li> </ul> <p><i><b>Technology suggestion:</b> Use video cameras to produce consumers' guides.</i></p> <ul style="list-style-type: none"> <li>• view artistic products (e.g., videos, paintings, concerts, theatre performances) to determine techniques used to present messages appealingly. In panel discussion, determine which techniques were most effective for which audiences (e.g., old vs. young, male vs. female).</li> <li>• adapt artistic products with identified views of <b>places</b> by changing techniques to project same message or using same techniques to send different messages. Use peer evaluation to determine which products were more successful and why.</li> <li>• read scripts of media presentations (e.g., radio, television, slide shows) to determine how scripts are formatted. Visit production studios to investigate how media presentations are produced. Prepare flow charts or checklists of production techniques and procedures. Explain why certain techniques were chosen as most effective to deliver messages.</li> </ul>	<p>Lauren and Ben are talented artists. They will submit portfolios of their work with accompanying analysis of their intended messages and techniques used. They may also challenge the assumption that artists intend to convey messages, believing that viewers project their own perceptions and experiences to make personal meaning, and artists create to please themselves. Students may choose to present portfolios to class (<i>Types of extensions: purpose and appropriateness, motivation, participation, demonstration of knowledge</i>).</p>

**High School English/Language Arts  
English II: Nontraditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Think and Solve Problems (5.1, 5.4)</b></p> <p align="center"><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>From inquiry (investigations through various sources), speaking, listening, and observing, what can I learn about <b>places</b> in the work world?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze practical/workplace materials.</li> <li>• identify authors' points of view.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• apply appropriate source documentation.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• develop and apply verbal and nonverbal elements of delivery.</li> <li>• practice critical listening, observing, and thinking skills.</li> <li>• apply language structure and conventions.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access, compare, and document sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• access technology.</li> <li>• use technology to present information.</li> </ul>

**High School English/Language Arts**  
**English II: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>choose careers and access print and nonprint resources (e.g., interview professional, e-mail, career/workplace resources, site visits) to identify various realities and perceptions of the <b>place</b> of that career in the work world. Use information gathered to profile careers for class career guides. Include appropriate source documentation.</li> <li>use information gathered and identification of personal interests and skills to develop career plans with photos and descriptions of desired work places. Develop job resumes and use peer evaluation to determine effectiveness.</li> </ul> <p><i>Technology suggestion: Use desktop publishing to enhance appearance of resumes.</i></p> <ul style="list-style-type: none"> <li>participate in class presentations sharing different views of work <b>places</b> and how to apply persuasive techniques effectively in work <b>places</b> (e.g., mock interviews, panel discussions, job fairs). Use appropriate language, tone, and nonverbal delivery. Prepare photo essays or brochures that identify important job skills.</li> </ul>	<p>Jake, Courtney, Pauline, and Arnie will address their need to learn and apply advanced-level research procedures to real issues. They will work under the guidance of sociology or psychology professors to design, administer, and analyze results of surveys related to future status of selected career fields. Analyze data from various sources to determine patterns and trends which would impact future career options in selected fields and incorporate findings in brochures focused on future career fields (<i>Types of extensions: purpose and appropriateness, complexity, time, magnitude, level of support, participation, demonstration of knowledge, motivation, resources and materials</i>).</p>

**High School English/Language Arts  
English II: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Think and Solve Problems (5.1, 5.3, 5.5)</b></p> <p><b>Connect and Integrate Knowledge (6.2, 6.3)</b></p>	<p>Through study of different views of <b>places</b>, what alternatives and changes do I think best to improve my life and the lives of others?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• read and analyze practical/workplace materials.</li> <li>• read and analyze persuasive materials.</li> <li>• respond critically to and analyze literary genres.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• write transactive pieces.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• practice critical listening, observing, and thinking skills.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• access, compare, and document sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use technology to present information.</li> </ul>

**High School English/Language Arts**  
**English II: Nontraditional Model**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will:</b></p> <ul style="list-style-type: none"><li>• use writing skills in response journals or learning logs to draw conclusions about what they have learned about different views of <b>places</b> evident in literature and work <b>places</b>.</li><li>• participate in small-group discussions to compare different views of <b>places</b> and ideas about alternatives and changes they think can improve life for themselves and others.</li><li>• choose one change they think is possible and collaboratively design plans to make that change. Use electronic searches and community resources to investigate restrictions (e.g., finances, zoning, public opinion) that may affect proposed changes. Create multimedia and written proposals to present plans to target audiences. Evaluate effectiveness of presentations.</li></ul> <p><i>Technology suggestion: Use e-mail or Internet to locate information.</i></p>	

**High School English/Language Arts  
English II: Nontraditional Model**

**NOTES**

## High School English/Language Arts

### English III: Nontraditional Model

**Prerequisite:** English II

#### **Course Overview:**

The English III **places** model organizes all content within a thematic approach based on the broad concept of **place** in human experience. The major focus for English III may be phrased as “What do I and others see as important problems in **places** that influence our lives, and what ideas do I and others have to address them?” Students’ learning is organized around the theme, with its potentially broad interpretations of **place**, and, focusing on the theme, students combine their work in reading, writing, speaking, listening, observing, conducting inquiry, and using technology, thus addressing all strands identified in the *Program of Studies*. Various activities are designed to help students develop proficiency in all strands, while exploring important concepts in their lives.

Models are organized around guiding questions. Guiding questions direct teachers’ choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to *Program of Studies* content. Sample activities and sample extensions for diverse learners are found on the right-hand page. Activities are intended to integrate multiple strands of communication. Activities include, for instance, inquiring about a topic and then presenting that information in writing and speaking. Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations.

#### **Guiding Questions:**

- How do literature and other reading materials help us understand problems in **places** that influence our lives and enable us to understand what others see as problems and influences on them?
- How well do artists and others use different forms, genres, and techniques to communicate ideas about problems in **places** that influence our lives?
- From inquiry, what can we learn about selected problems in **places** and how we might address those problems?
- What conclusions can we draw from how people in different periods and cultures view the same problems that we face?
- How can we apply skills in writing, speaking, and using technology to communicate our ideas about problems to others?



**High School English/Language Arts  
English III: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.3)</b></p> <p><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>How do literature and other reading materials help us understand problems in <b>places</b> that influence our lives and enable us to understand what others see as problems and influences on them?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• read and analyze classic and contemporary literature.</li> <li>• apply knowledge of literary terms and concepts.</li> <li>• apply analytical reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop personal writing.</li> <li>• develop literacy writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> <li>• collaborate to solve problems.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze appropriate sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use personal writing, response journals, and small group discussions to respond to problems and views of problems in <b>places</b> presented in various reading materials.</li> <li>• use writing-to-demonstrate-learning strategies (e.g., graphic organizers, open-response questions) to compare types of problems demonstrated in literary and transactive reading materials.</li> <li>• read literature with characters in the same <b>places</b> as students. Compare literary characters' responses with students' responses to the same <b>places</b>. Complete bulletin boards or other displays demonstrating different views of same places.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Create demonstrations through video and audio clips.</i></p> <ul style="list-style-type: none"> <li>• share what has been learned from reading about problems in <b>places</b> through small-group discussions, oral presentations, and media presentations to find common themes of problems and solutions. Choose common themes to explore through additional reading. Develop fiction (e.g., short stories, poems) that uses those themes as focusing ideas.</li> <li>• use writing-to-learn strategies to evaluate how literary concepts (e.g., symbolism, tone) affect their understanding of authors' messages about problems and influences. Respond to open-response situations about impact of literary concepts.</li> </ul>	<p>Jacob understands all information presented orally on grade-level materials. Provide Jacob with audiotapes for all assigned reading materials. For self-selected materials, he will either access audiotapes or choose material on his reading level and for his responses, he uses voice to text on computers (<i>Type of extension: resources and materials</i>).</p> <p>Lilly is working on strategies to control her anger and replacing appropriate behaviors for her aggressive behaviors. She is academically on grade level. The teacher facilitates Lilly's selection of literature which has characters who have similar experiences as Lilly and portray positive strategies used to deal with adversity, problem solving, and changing their patterns of behavior (e.g., cycle of abuse, cycle of drug addictions, selection of role models) (<i>Type of extension: purpose and appropriateness</i>).</p>

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English III: Nontraditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.3)</b></p> <p><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>How well do artists and others use different forms, genres, and techniques to communicate ideas about problems in <b>places</b> that influence our lives?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• develop personal writing.</li> <li>• develop literary writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> <li>• analyze nonprint materials.</li> <li>• collaborate to solve problems.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze appropriate sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop journal articles that evaluate effectiveness of different forms, genres, and techniques in presenting the same problems in <b>places</b> (e.g., war, family conflict, environmental concerns).</li> <li>• collaborate to present ideas in writing, speaking, and/or multimedia about how problems in the same <b>place</b> are shown in various media (e.g., video, painting, music, poetry, drama). Write media critiques to determine which media are most successful in their presentations.</li> <li>• visit museums to compare effectiveness of different artistic techniques in presenting problems. Create graphic displays (e.g., multimedia, electronic presentation format, charts) of findings.</li> <li>• present to decision-making groups photo journals that suggest improvements to local problems. In small groups, discuss benefits of using graphic representations rather than just speaking.</li> </ul> <p><i><b>Technology suggestion:</b> Use integrated software packages or graphing programs to analyze data and create graphs.</i></p>	<p>Ryan learns at a slower pace than his same-age peers. He learns best when provided with new vocabulary before its introduction to class. Prior to visiting museum the teacher will review with Ryan vocabulary, types of displays that will be viewed, and the assignment. Ryan decides prior to the field trip what type of graphic display and problem he will use so he will be able to concentrate on those types of exhibits. Upon return, a review of the assignment and list of steps to complete the task will be given to Ryan. Conferencing takes place with Ryan at the end of each step (<i>Types of extensions: complexity, order of learning, procedures and routines, resources and materials, level of support</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.3)</b></p> <p><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>From inquiry, what can we learn about selected problems in <b>places</b> and how we might address those problems?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• apply analytical reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• critique own and others' works.</li> <li>• tailor language and conventions.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze sources.</li> <li>• paraphrase and summarize information.</li> <li>• evaluate appropriateness of material.</li> </ul> <p><b>Technology</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• apply organizational skills to plan inquiries into selected problems and to collect and record information and ideas appropriate for tasks.</li> <li>• interview people to identify various problems in <b>places</b>. Summarize findings to produce transactive writing (e.g., editorials, news articles, speeches).</li> <li>• draw on inquiry findings to create support materials (e.g., presentation software, charts, videos) for presentations that convey differences in how problems might be addressed.</li> <li>• evaluate possible solutions found in inquiry to select most appropriate to propose to audiences empowered to make suggested changes.</li> <li>• discuss problems in conducting inquiry projects and draw conclusions to help in future inquiries.</li> </ul> <p><i>Technology suggestion: Use desktop publishing programs to create transactive writing.</i></p>	<p>Stan, Tammy, Sophie, Rodney, and Stella are active members of the academic team and compete in the future problem solving (FPS) event; they are familiar with the FPS problem-solving model and its application. These students will identify a local problem as the basis for their entry in the community problem solving competition. In accordance with requirements for participation, they will research the problem, generate a scenario of current status of conditions related to problem area, focus on selected underlying problem statement for which they will generate twenty possible solutions, formulate and apply five criteria to ten selected possible solutions to determine best solution, plan and implement strategies to utilize the solution, and report their results. At the stage of preparing for implementation, the group will present their process and plans to the most appropriate audience empowered to support their efforts (<i>Types of extensions: purpose and appropriateness, complexity, level of support, time, magnitude, environment, resources and materials, motivation, demonstration of knowledge</i>).</p>

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English III: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.3)</b></p> <p><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>What conclusions can we draw from how people in different periods and cultures view the same problems that we face?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• apply analytical reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• analyze nonprint materials.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze appropriate sources.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Nontraditional Model**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• draw on reading, viewing of film and art, listening to speakers, and other resources to learn of different cultural views of the same problems. Write responses that compare how different views are presented.</li><li>• respond to on-demand prompts to compare views of different periods and cultures.</li><li>• read historical accounts of how people reacted to certain problems (e.g., political unrest, pollution, workplace ethics) to trace how people have responded differently over time to the same problems. Write proposals to correct current problems based on how problems were viewed in various periods and cultures.</li></ul> <p><i>Technology suggestion: Create multimedia product to present proposal to civic organization.</i></p>	<p>Jerome completes activities without support when activities do not involve complex integration of information. He has been taught various strategies to use when he has to integrate information and complete multi-step searches. He is given instruction on searching because the class instructional plan is scheduled for two days and he needs additional time to do searches and plan his writing. The assignment is expected to take three days. Jerome will be given five days to complete the assignment (<i>Types of extensions: pace, time</i>).</p>



**High School English/Language Arts  
English III: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Think and Solve Problems (5.1, 5.3)</b></p> <p><b>Connect and Integrate Knowledge (6.3)</b></p>	<p>How can we apply skills in writing, speaking, and using technology to communicate our ideas about problems to others?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate reading materials.</li> <li>• interpret multiple meanings of vocabulary.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• use writing-to-learn strategies.</li> <li>• develop transactive writing.</li> <li>• develop personal writing.</li> <li>• develop literary writing.</li> <li>• critique own and others' works.</li> <li>• tailor language and conventions.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use effective speaking skills and techniques.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• locate and analyze sources.</li> <li>• paraphrase and summarize information.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• use multimedia tools.</li> </ul>

**High School English/Language Arts**  
**English III: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read materials to identify and analyze different views of selected problems. Summarize through writing and speaking different views of selected problems evident in materials read.</li> <li>• select appropriate quotes and information to support own ideas about problems investigated. Correctly use jargon and technical language in context. Create personal, literary, or transactive writings about problems, showing ability to apply criteria for effective writing.</li> <li>• use technology (e.g., desktop publishing) to make writing appealing to authentic audiences through inserting graphics, enhancing page layout, and selecting appropriate type styles.</li> <li>• establish criteria to evaluate the success of different approaches taken to solve problems and train others to be successful problem-solvers.</li> <li>• prepare resumes that address personal qualifications to help potential employers overcome problems or fulfill specific needs.</li> </ul> <p><i>Technology suggestion: Use desktop publishing programs to create resumes.</i></p>	<p>Clay organizes and translates his thoughts in writing similar to same-age peers. He needs support for staying on task to complete assignments and respond appropriately to staff and peers. For the activity to evaluate success of different approaches taken to solve problems and train others to be successful problem-solvers, Clay develops a chart for taking data on staying on task and assignment completion and trains other students who might need assistance with these two areas. The chart includes what behaviors should be taking place and how to troubleshoot. With staff assistance, he develops a problem solving routine for use when he responds inappropriately and criteria for mastery. He trains his teachers on how to collect data. His data collection device replaces the current one that teachers are using to collect ongoing progress data (<i>Types of extensions: level of support, purpose and appropriateness, demonstration of knowledge</i>).</p>

**High School English/Language Arts  
English III: Nontraditional Model**

**NOTES**

## High School English/Language Arts

### English IV: Nontraditional Model

**Prerequisite:** English III

#### **Course Overview:**

The English IV nontraditional model organizes all content for the course within a thematic approach based on the broad concept of place in human experience. The major focus for English IV may be phrased, “How can I best evaluate and make decisions about the different **places** in my life to help me reach my goals and contribute to a better society?” In the course, students’ learning is organized around the theme, with its potentially broad interpretations, of **place**. Focusing on the theme, students combine their work in reading, writing, speaking, listening, observing, conducting inquiry, and using technology, thus addressing strands for English/Language Arts in the *Program of Studies*. Various activities are designed to help students develop proficiency in all strands while exploring important concepts in their lives.

Models are organized around guiding questions. Guiding questions direct teachers’ choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to *Program of Studies* content. Sample activities and sample extensions for diverse learners are found on the right-hand page. Activities are intended to integrate multiple strands of communication. Activities include, for instance, inquiring about a topic and then presenting that information in writing and speaking. Suggested activities are not comprehensive; that is, they are starting points to plan instruction for required content and may need to be adjusted for individual students and school situations.

#### **Guiding Questions:**

- From our reading of literature and other materials, what do we see as best about different **places** that influence us now and in the future, and what do we see as threats to the quality of those **places** that must be addressed to reach our goals and improve our society?
- How do arts and humanities of different periods and cultures help us evaluate important **places** of our own lives, understand and appreciate different views of what makes those **places** good, and lead us to make plans and reach decisions about **places**, now and in the future?
- How does my understanding of works of artists and other thinkers, past and present, lead me to make decisions about goals for **places** of importance to me and others?
- From our inquiry (investigations through a variety of sources), what ideas do I and others hold about issues, conditions, and needs concerning specific **places**, and what decisions can I make to reach or create **places** that are best for me and others?
- How can I use technology and effective skills in writing and speaking to communicate with others my views, decisions, and plans about **places** that influence me now and in the future?

**High School English/Language Arts  
English IV: Nontraditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Arts and Humanities</b> (2.24, 2.25)</p> <p><b>Think and Solve Problems</b> (5.1, 5.2, 5.3, 5.5)</p> <p><b>Connect and Integrate Knowledge</b> (6.1, 6.2, 6.3)</p>	<p>From our reading of literature and other materials, what do we see as best about different <b>places</b> that influence us now and in the future, and what do we see as threats to the quality of those <b>places</b> that must be addressed to reach our goals and improve our society?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• respond critically to literary genres.</li> <li>• select and read for enjoyment.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to learn and writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> <li>• critique writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for effective oral presentations.</li> <li>• evaluate oral presentations.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information and ideas.</li> <li>• engage in decision-making, planning, and organizational procedures.</li> <li>• apply logical and critical thinking strategies.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> <li>• develop technology use.</li> </ul>

**High School English/Language Arts**  
**English IV: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• select and read literature set in “ideal” <b>places</b> (e.g., <i>Animal Farm</i>, “Kubla Kahn,” <i>Morte d’ Arthur</i>) to identify characteristics of authors’ visions of utopia. Compare in graphic organizers and response journals how descriptions of those <b>places</b> changed in various time periods and how they compare to <b>places</b> in their own experiences. Use comparisons and additional inquiry to develop descriptions of their own utopias, either real or imagined. Debate the concept of utopia.</li> <li>• analyze print and nonprint transactive materials to characterize threats to quality of life (e.g., pollution, unemployment, technology). Organize information for news articles describing threats.</li> <li>• apply various reading strategies to respond to persuasive materials that propose changes to <b>places</b>; response will identify ambiguous statements, interpret literal and non-literal meanings, recognize bias, and make predictions. Respond in either writing-to-learn forms (e.g., charts, logs) or authentic writing (e.g., opposition editorials, letters to editor).</li> <li>• collaborate to synthesize views of <b>places</b> with threats to those places. Develop overviews of identified problems. Use multimedia products to share findings in oral presentations. Develop response guides to evaluate peer presentations.</li> </ul>	<p>A cluster of students with advanced reading ability have previously studied <i>Animal Farm</i> and <i>Morte d’Arthur</i>. These students will select and read literature set in the grimmest of places (e.g., <i>Inferno</i>, <i>The Snake Pit</i>, <i>Oliver Twist</i>, <i>Angela’s Ashes</i>). They will compare how descriptions of those places changed in various time periods and how they compare to places in their experiences (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, order of learning, resources and materials, demonstration of knowledge, participation, motivation, level of support</i>).</p>

**High School English/Language Arts  
English IV: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.23, 2.24)</b></p> <p><b>Think and Solve Problems (5.1, 5.2, 5.3, 5.5)</b></p> <p><b>Connect and Integrate Knowledge (6.1, 6.2, 6.3)</b></p>	<p>How do arts and humanities of different periods and cultures help us evaluate important <b>places</b> of our own lives, understand and appreciate different view of what makes those <b>places</b> good, and lead us to make plans and reach decisions about our <b>places</b>, now and in the future?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• respond critically to literary genres.</li> <li>• analyze uses of literary terms and concepts.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to-learn strategies.</li> <li>• develop transactive writing.</li> <li>• develop personal writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for effective oral presentations.</li> <li>• apply strategies for critical listening and observing.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information and ideas.</li> <li>• engage in decision-making, planning, and organizational procedures.</li> <li>• apply logical and critical thinking strategies.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> </ul>

**High School English/Language Arts  
English IV: Nontraditional Model**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• view artwork of different time periods and cultures that focus on <b>place</b> (e.g., landscapes, people at work or play) to identify how time periods and cultures affect views shown of <b>places</b>. Develop critiquing guides to compare two works. Develop comparative reviews of artworks based on critiquing guides.</li></ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Create interactive computer displays with critiquing guides and artworks. Match annotated guides with artworks.</i></p> <ul style="list-style-type: none"><li>• read and listen to music lyrics and styles from <b>places</b> in conflict (e.g., revolution, war, natural disasters) to identify common themes, language, and views. Apply writing-to-learn strategies (e.g., graphic organizers, double-entry logs) to compile information and draw conclusions about the impact of music on understanding of <b>places</b>. Read literary works set during conflicts and identify music to complement production (e.g., play performance, Readers’ Theatre, oral readings). Write justification in form of playbill director’s notes to explain selection.</li><li>• use electronic sources to investigate views of major artists of different periods or cultures about what is valuable in <b>places</b> of importance. Compare those descriptions and analyses to students’ perceptions of artworks. Develop personal essays that reflect how and why critics’ views may differ from those of casual viewers.</li></ul>	



**High School English/Language Arts  
English IV: Nontraditional Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Arts and Humanities (2.23, 2.24)</b></p> <p><b>Think and Solve Problems (5.1, 5.2, 5.3, 5.5)</b></p> <p><b>Connect and Integrate Knowledge (6.1)</b></p>	<p>How does my understanding of works of artists and other thinkers, past and present, lead me to make decisions about goals for <b>places</b> of importance to me and others?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> <li>• develop personal writing.</li> <li>• apply genre features.</li> <li>• use handbooks, style manuals, and models.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for effective oral presentations.</li> <li>• apply strategies for critical listening and observing.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information and ideas.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> <li>• develop use of technology.</li> </ul>

**High School English/Language Arts**  
**English IV: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>investigate personal backgrounds of artists to draw correlations between their experiences and artwork they produced. Read both what the authors said and what others have said about their works. Prepare time lines of artists' lives to show how their works changed as they changed their perspectives of <b>place</b>.</li></ul> <p><i>Technology suggestion: Produce electronic encyclopedia entries of artists' lives and works.</i></p> <ul style="list-style-type: none"><li>develop memoirs of significant <b>places</b> in their lives. Prepare companion pieces (e.g., personal essays, speeches, editorials) to promote preservation or change for those <b>places</b>.</li><li>read reminiscences (e.g., <i>Walden</i>) of impact <b>place</b> has had on revolutionary thinkers. Following those patterns, create multimedia presentations about students' <b>places</b> of importance that reflect on how those <b>places</b> influence personal decisions (e.g., where you are affects what you do and believe).</li><li>interview community leaders about different ideas and goals for <b>places</b> of importance to students and their society. Develop interpretive news features that analyze different opinions and goals to be considered before making decisions.</li></ul>	

**High School English/Language Arts  
English IV: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Think and Solve Problems (5.1, 5.2, 5.4)</b></p> <p><b>Connect and Integrate Knowledge (6.2, 6.3)</b></p>	<p>From our inquiry (investigations through various sources), what ideas do I and others hold about issues, conditions, and needs concerning specific <b>places</b> and what decisions can I make to reach or create <b>places</b> that are best for me and others?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• apply writing-to-learn strategies.</li> <li>• develop transactive writing.</li> <li>• apply writing process and criteria for effective writing.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for effective oral presentations.</li> <li>• apply and respond to verbal and nonverbal delivery elements.</li> <li>• apply strategies for critical listening and observing.</li> </ul> <p><b>Inquiry</b></p> <ul style="list-style-type: none"> <li>• collect, analyze, synthesize, and evaluate information and ideas.</li> <li>• apply logical and critical thinking strategies.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> <li>• develop and evaluate use of technology.</li> </ul>

**High School English/Language Arts**  
**English IV: Nontraditional Model**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• locate and access various print and nonprint sources to investigate issues influencing the welfare of selected <b>places</b> of importance. Take notes that paraphrase findings. Develop position papers on current status of <b>places</b>.</li> <li>• investigate resolutions to issues and needs of other <b>places</b> that might be applied to issues and needs of selected <b>places</b> of importance. Develop proposals to improve or protect <b>places</b> of importance. Share those proposals in presentations to decision-making groups.</li> <li>• reflect in response journals on <b>places</b> (e.g., careers, emotional states, family groupings) they want to be in their future. Collect information from various sources (e.g., electronic, Internet, career manuals, self-help books, interviews) to develop personal growth plans to achieve that <b>place</b>. Write how-to guides on setting and achieving personal goals.</li> <li>• reflect on problems and successes in inquiry process and develop plans to better address specific inquiry strategies. Evaluate effectiveness of resources for inquiry. Develop writings to effectively guide others through the inquiry process.</li> </ul> <p><i><b>Technology suggestion:</b> Use poster-making hardware and software to create posters for library with flow charts of effective inquiry process to aid other students.</i></p>	<p>Pam, Will, Steve, and Beth, who have advanced reasoning ability and need opportunities to deal with complex issues and problems, will select, access, and analyze written materials of organizations involved in protection of <b>places</b> (e.g., Greenpeace, Sierra Club). They will develop position papers and proposals to apply those principles and goals to conserving local <b>place</b> (<i>Types of extensions: purpose and appropriateness, complexity, participation, resources and materials, demonstration of knowledge, motivation</i>).</p>

**High School English/Language Arts  
English IV: Nontraditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Think and Solve Problems (5.1)</b></p>	<p>How can I use technology and effective skills in writing and speaking to communicate with others my views, decisions, and plans about <b>places</b> that influence me now and in the future?</p>	<p><b>Students will</b></p> <p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• analyze, synthesize, and evaluate reading materials.</li> <li>• apply reading skills.</li> </ul> <p><b>Writing</b></p> <ul style="list-style-type: none"> <li>• develop transactive writing.</li> <li>• develop literary writing.</li> <li>• use handbooks, style manuals, and models.</li> <li>• apply writing process and criteria for effective writing.</li> <li>• critique own and others' works.</li> </ul> <p><b>Speaking/Listening/Observing</b></p> <ul style="list-style-type: none"> <li>• use strategies for effective oral presentations.</li> <li>• apply strategies for critical listening and observing skills.</li> <li>• evaluate oral presentations.</li> </ul> <p><b>Technology as Communication</b></p> <ul style="list-style-type: none"> <li>• retrieve and transmit communications.</li> <li>• develop and evaluate use of technology.</li> </ul>

**High School English/Language Arts**  
**English IV: Nontraditional Model**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• develop informational or persuasive presentations about the past, present, and future of selected <b>places</b>. Incorporate video and audio clips with presentation software, displays, and videos. Evaluate presentations of classmates based on criteria for effective writing and speaking.</li><li>• create literary writings (e.g., poetry, short stories, plays) that characterize current and future states of significant <b>places</b>. Pattern writing after appropriate models and style manuals. Use writing workshop format to critique writing of classmates. Incorporate technology to make writing visually pleasing by appropriately using elements such as graphics, visuals, and typefaces. Use classroom mentors to share knowledge and skills in using technology to enhance visual presentation of writing.</li></ul>	<p>Avdo's command of oral social language is strong, but he is weak in all areas of academic language. It will be difficult for him to evaluate his classmates' oral presentations based on effective use of language. Avdo will be instructed to focus on nonverbal communication in his evaluations. In addition, he will prepare presentations for his classmates that compare appropriate nonverbal language in his native culture to what is appropriate in American culture (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, demonstration of knowledge, participation</i>).</p>

**High School English/Language Arts  
English IV: Nontraditional Model**

**NOTES**

## High School English/Language Arts Student Resources

### Nontraditional Models

Alighieri, Dante. *The Inferno*  
Angelou, Maya. *I Know Why the Caged Bird Sings*  
Angelou, Maya. *I Shall Not be Moved*  
Bishop, Jim. *The Day Lincoln Was Shot*  
Carroll, Lewis. *Alice in Wonderland*  
Chaucer, Geoffrey. *Canterbury Tales*  
Chopin, Kate. *The Awakening*  
Christie, Agatha. *And Then There Were None*  
Cisneros, Sandra. *The House on Mango Street*  
Clark, Walter. *The Ox-Bow Incident*  
Clarke, Arthur. *2001: A Space Odyssey*  
Coleridge, Samuel. "Kubla Kahn"  
Conrad, Joseph. *Heart of Darkness*  
Crane, Stephen. *Red Badge of Courage*  
Cummings, E. E. *Collected Poems*  
Dickens, Charles. *Great Expectations*  
Dickens, Charles. *Hard Times*  
Dickens, Charles. *Oliver Twist*  
Dickinson, Emily. *Complete Poems*  
Eliot, T. S. *The Wasteland*  
Faulkner, Robert. *All the King's Men*  
Galarza, Ernesto. *Barrio Boy*  
Golding, William. *Lord of the Flies*  
Hansberry, Lorraine. *A Raisin in the Sun*  
Hanson-Harding, Alexandra. *Great American Speeches*  
Hawking, Stephen. *A Brief History of Time*  
Hawthorne, Nathaniel. *The Scarlet Letter*  
Hemingway, Ernest. *For Whom the Bell Tolls*  
Hemingway, Ernest. *The Old Man and the Sea*  
Highwater, Jamake. *I Wear the Morning Star*  
Hilton, James. *Goodbye, Mr. Chips*  
Hohler, Robert. "I Touch the Future..."  
Ibsen Henrik. *A Doll's House*  
Kafka, Franz. "Metamorphosis"  
Kennedy, John. *Profiles in Courage*  
King, Martin. "I Have a Dream"  
Kinsella, W. P. *Shoeless Joe*  
Knowles, John. *A Separate Peace*  
Lee, Harper. *To Kill a Mockingbird*  
Lincoln, Abraham. "Gettysburg Address"  
Longfellow, Henry. *Evangeline*  
Malory, Thomas. *Morte d'Arthur*



## High School English/Language Arts Student Resources

### Nontraditional Models

McCourt, Frank. *Angela's Ashes*  
McCullers, Carson. *The Member of the Wedding*  
McPhee, John. "A Sense of Where You Are"  
Miller, Jim. *The Mountains Have Come Closer*  
Momaday, Scott. *The Way to Rainy Mountain*  
Moore, Thomas. *Utopia*  
Myers, Walter. *Fallen Angels*  
Orwell, George. *Animal Farm*  
Orwell, George. *1984*  
Paulsen, Gary. *Canyons*  
Petrakis, Harry. "A Whole Nation and a People"  
Rose, Reginald. *Twelve Angry Men*  
Shakespeare, William. *Hamlet*  
Shakespeare, William. *Julius Caesar*  
Shakespeare, William. *Macbeth*  
Shakespeare, William. *A Midsummer Night's Dream*  
Shakespeare, William. *Romeo and Juliet*  
Shaw, George. *Pygmalion*  
Steinbeck, Charles. *Of Mice and Men*  
Steinbeck, Charles. *Travels With Charley in Search of America*  
Thoreau, Henry. *Walden*  
Tolstoy, Leo. *War and Peace*  
Twain, Mark. *A Connecticut Yankee in King Arthur's Court*  
Twain, Mark. *Adventures of Huckleberry Finn*  
Twain, Mark. "Life on the Mississippi"  
Verne, Jules. *20,000 Leagues Under the Sea*  
Voight, Cynthia. *A Solitary Blue*  
White, E. B. *The Once and Future King*  
Wilder, Thornton. *Our Town*  
Wilder, Thornton. *The Skin of Our Teeth*  
Williams, Tennessee. *The Glass Menagerie*  
Williams, Tennessee. *A Streetcar Named Desire*  
Wright, Richard. *Black Boy*

## **High School English/Language Arts and Social Studies Interdisciplinary World Studies**

**Content Areas:** English II and World Civilization

**Prerequisite:** English I

**Credit:** 2 (1 English, 1 Social Studies)

### **Course Overview:**

This world studies course is a chronological, interdisciplinary survey of the history, culture, sociology, literature, art, music, and philosophies of cultures around the world. Students are engaged in critical inquiry throughout the course. They investigate historical and literary periods, gaining a better perspective of the universal human condition and man's role in the world. Students build communication and inquiry skills by focusing on the development of longer written compositions and oral presentations. In addition to reading and writing activities, students prepare a variety of creative projects, based on individual interests.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions, listed below the guiding questions, are included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair, are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the needs of all their students.

Academic expectations, guiding and essential questions, correlations to the *Program of Studies*, sample activities, and sample extensions for diverse learners can be found on pages SS 129-147.

## **High School English/Language Arts and Social Studies Interdisciplinary American Studies**

**Content Areas:** English III, U.S. History, Government

**Prerequisite:** English II

**Credit:** 2 (one English, one Social Studies)

### **Course Overview:**

This American studies course is a chronological, interdisciplinary survey of the history, government, culture, sociology, literature, art, music, and of America. Students study each historical and literary period, gaining a better perspective of the universal human condition and an understanding of citizens' responsibilities to society. Students build inquiry and communication skills, focusing on the development of written compositions, oral presentations, and projects. Using a variety of print and nonprint materials, students research and evaluate issues related to the development of American culture.

In order to award two credits for this American studies, all content for English III and the content for two social studies strands, government and U.S. history (Reconstruction to the present), must be included. Additional social studies content is included to help students develop an understanding of trends, attitudes, and literature from different periods of American history.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions, listed below guiding questions, are included to further focus student learning. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

Academic expectations, guiding and essential questions, correlations to the *Program of Studies*, sample activities, and sample extensions for diverse learners for American studies can be found on pages SS 149-181.

## English/Language Arts Glossary

- Authentic:** Real, genuine, and actual communications with real people (e.g., letters to editor of an actual newspaper).
- Blending:** Combining sounds to make words.
- Classic texts:** Literary or other works that have been canonized, either continuously or intermittently, over a period of time.
- Concrete poetry:** Poems shaped like objects they describe.
- Contemporary texts:** Literary or other works that have been written in recent years; they frequently address issues and events of current concern to a given community, but may also be broader in scope.
- Context:** Sounds, words, or phrases adjacent to a spoken or written language unit; social or cultural situation in which a spoken or written message occurs.
- Conventions:** Accepted practices in spoken or written communication (e.g., mechanics, formatting, grammar).
- Correctness:** Acceptable qualities in writing features such as spelling, punctuation, and capitalization.
- Cues:** Various sources of information used by readers to construct meaning, including relationships between oral and written language (graphophonic) and among linguistic units (syntactic) and language meaning systems (semantic).
- Decode:** To analyze spoken or graphic symbols of familiar languages to ascertain their intended meaning.
- Delivery techniques:** Ways materials are presented to audiences that includes both verbal and nonverbal elements.
- Directionality:** Patterns of reading text (e.g., left to right; top to bottom; front to back).
- Expressive writing:** Creation that reveals or explores authors' thoughts, feelings, and observations.
- Environmental text:** Printed language that appears in everyday situations (e.g., road signs, food labels, fast food signs).
- Fiction:** Imaginative literary, oral, or visual works representing invented, rather than actual, persons, places, and events.
- Figurative language:** Any language using figures of speech, such as metaphor or hyperbole to create multiple or intensified meanings.
- Genre:** Category used to classify literary and other works, usually by form, technique, or content (e.g., short stories, drama, poetry, novels, essays).

## English/Language Arts Glossary

**Imagery:** Use of language to create sensory impressions; collectively, the figurative language in a work.

**Informational material:** Writing intended to share information with audiences (e.g., biographies, autobiographies, periodicals).

**Inquiry:** Investigations through a variety of sources.

**Literary (story) elements:** Components of expressive writing (e.g., characters, setting, conflict/resolution, theme, point of view).

**Literary techniques:** Strategies authors use to convey or enhance expressive writing (e.g., figurative language, foreshadowing, characterization).

**Multimedia:** Incorporating or making use of more than one medium. For instance, multimedia inquiry projects might include written reports, photographs, computer-generated charts, and audiotaped interviews.

**Nonprint source:** Resources that do not have written text (e.g., signs, speeches, electronic media, interviews).

**Nonverbal elements:** All aspects of oral communication other than word choice (e.g., gestures, facial expressions, tone, volume, rate).

**Organizational signals/aids:** Those included in print to help readers understand text (e.g., bullets, bold print, graphics, headings, lists, embedded visuals, graphs).

**Personal writing:** Writing that is based on personal experiences (e.g., personal narratives, memoirs, personal essays).

**Persuasive writing:** Writing that convinces others to believe or do something (e.g., editorials, articles, advertisements, essays, speeches).

**Practical/workplace writing:** Writing to help readers perform everyday tasks (e.g., warranties, recipes, forms, memoranda, consumer texts, manuals).

**Reading strategies:** Techniques to both decode text and enhance comprehension (e.g., word analysis, rereading, context clues, pre-reading, raising questions, predicting, drawing conclusions, skimming, scanning).

**Reflective writing:** Writing in which the author considers events or processes to evaluate what has been learned.

**Segmenting:** Dividing words into sounds.

**Semantic:** The meaning of words.

## English/Language Arts Glossary

**Speaking-to-demonstrate-learning:** Oral communication that assesses learning (e.g., instructional conversations, cooperating groups).

**Speaking-to-learn:** Oral communication that aids in the learning process (e.g., thinking-aloud, questioning).

**Story structure:** Format of formal writing.

**Style:** Authors' use of language, its effects, and its appropriateness to the author's intent and theme.

**Syllabification:** Identifying or recognizing parts of words.

**Syntax:** Word structure relationships among linguistic units such as prefixes and suffixes.

**Technology:** Electronic and other devices used to enhance communication (e.g., videos, computers, TV, radio, telephone).

**Text:** Printed communications in their varied forms, oral communication, and visual communications such as films and computer displays.

**Text features:** Visual techniques that enhance readers' understanding of print, including organizational signals and aids.

**Transactive:** Writing produced for authentic purposes and audiences beyond completing an assignment to demonstrate learning.

**Verbal elements:** Choice of spoken language.

**Writing Process:** The many aspects of the complex act of producing written communication; specifically, planning, drafting, revising, editing, and publishing.

**Writing-to-demonstrate-learning:** Writing that assesses learning (e.g., open response, essay tests).

**Writing-to-learn:** Writing that aids in the learning process (learning logs, journals, notetaking, reflective response).

## English/Language Arts Teacher Resources

### Publications: Books

Atwell, Nancie. *Side By Side Essays on Teaching to Learn*. Concord, MA: Irwin Publishing, 1991.

Atwell, Nancie. *In the Middle*. Portsmouth, NH: Boynton/Cook Publishers, 1987.

Beck, Isabel L., Margaret G. McKeown, Rebecca Hamilton, and Linda Kucan. *Questioning the Author, An Approach for Enhancing Student Engagement with Text*. Newark, DE: International Reading Association Inc. 1997.

Belanoff, Pat, and Marcia Dickson. *Portfolios Process and Product*. Portsmouth, NH: Boynton/Cook Publishers, 1991.

Calkins, Lucy McCormick. *Raising Lifelong Learners*. Reading, MA: Addison-Wesley, 1997.

Children's Book Council. *Kids' Favorite Books*. Newark: International Reading Association, 1992.

*Classroom Strategies for Secondary Reading*. Edited by W. John Harker. Newark, International Reading Association, 1987.

The College Board. *Making Sense*. Edited by Anne Chapman. New York: College Board Publications, 1992.

College of William and Mary Center for Gifted Studies, National Language Arts Curriculum Project for High Ability Learners (Javits): *A Curriculum Framework in Language Arts for High Ability Learners (k-8), Literature of the 1940's: A Decade of Change (Grades 7-9), Threads of Change in 19th-Century American Literature (Grades 7-9)*.

Crafton, Linda K. *Standards in Practice Grades K-2*. Urbana, IL: National Council of Teachers of English, 1996.

Devers III, William J., and James Cipielewski. *Every Teacher's Thematic Booklist*. New York: Scholastic Professional Books, 1993.

*Effective Teaching of Reading: Research and Practice*. Edited by James V. Hoffman. Newark, DE: International Reading Association, 1986.

Elliot, Peggy G., and Carl B. Smith. *Reading Activities for Middle and Secondary Schools*. New York: Teachers College Press, 1986.

*English/Language Arts Curriculum Resource Handbook: A Practical Guide for K-12 English/Language Arts Curriculum*. United States: Kraus International Publications, 1992.

*Exemplar Series Grades 6-8*. Edited by Miles Myers and Elizabeth Spalding. Urbana, IL: National Council of Teachers of English, 1997.

## English/Language Arts Teacher Resources

- Fact and Fiction: Across the Curriculum.* Edited by Bernice E. Cullinan. Newark, DE: International Reading Association, 1993.
- Fountas, Irene, and Gay Pinnell. *Guided Reading: Good First Teaching for all Children.* Portsmouth, NH: Heinemann, 1996.
- Goodman, K.S. *In Defense of Good Teaching: What Teachers Need to Know About the "Reading Wars."* York, ME: Stenhouse Publishers, 1998.
- Hansen, Jane. *When Writers Read.* Portsmouth, NH. Heinemann Educational Books, Inc., 1987.
- Invitation to Read.* Edited by Bernice E. Cullinan. Newark, DE: International Reading Association, 1992.
- Karnes, Frances, and Tracy Riley. *Competitions: Maximizing Your Abilities.* Waco, TX: Prufrock Press, 1996.
- Krogness, Mary Mercer. *Just Teach Me Mrs. K.* Portsmouth, NH: Heinemann, 1995.
- Kucer, Stephen B., Cecilia Silva, and Esther L. Delgado-Larocco. *Curricular Conversations, Themes in Multilingual and Monolingual Classrooms.* York, ME: Stenhouse Publishers, 1995.
- Lane, Barry. *After The End, Teaching and Learning Creative Revision.* Portsmouth: Heinemann Publishing, 1993.
- Lively Discussions, Fostering Engaged Reading.* Edited by Linda B. Gambrell and Janice F. Almasi. Newark, DE: International Reading Association, 1996.
- Manning, Maryann Murphy, and Gary L. Manning. *Reading Instruction in the Middle School.* Washington, D C: National Education Association Publication, 1979.
- McMahon, Susan I. and Taffy E. Raphael. *The Book Club Connection, Literacy Learning and Classroom Talk.* New York: Teachers College Press, 1997.
- Moffett, James, and Betty Jane Wagner. *Student-Centered Language Arts, K-12.* Portsmouth, NH: Boynton/Cook Publishers, 1992.
- Moss, Joy F. *Using Literature in the Middle Grades: A Thematic Approach.* Urbana, IL: National Council of Teachers of English, 1996.
- Motivating Writing in Middle School.* Standards Consensus Series. Urbana, IL: National Council of Teachers of English, 1996.
- Norton, Donna E. *Through the Eyes of a Child - An Introduction to Children's Literature.* Englewood Cliffs, NJ: Prentice Hall, Inc., 1995.



## English/Language Arts Teacher Resources

Pearson, P. David, and Dale D. Johnson. *Teaching Reading Comprehension*. New York: Holt, Rinehart, and Winston, 1978.

*Peer Talk in the Classroom Learning from Research*. Edited by Jeanne R. Paratore and Racheal L. McCormack. Newark, DE: International Reading Association, 1997.

*Research & Professional Resources in Children's Literature: Piecing A Patchwork Quilt*. Edited by Kathy G. Short. Newark, DE: International Reading Association, 1995.

Routman, Regie. *Invitations Changing as Teachers and Learners K-12*. Portsmouth, NH: Irwin Publishing, 1991.

Routman, R. *Literacy at the Crossroads: Crucial Talk About Reading, Writing, and Other Teaching Dilemmas*. Portsmouth, NH: Heinemann, 1996.

Sandholtz, Judith Haymore, Cathy Ringstaff, and David C. Dwyer. *Teaching with Technology*. New York: Teachers College Press, 1996.

Shuman, Robert Baird. *Strategies in Teaching Reading*. Washington DC: National Education Association of the United States, 1978.

Sierra-Perry, Martha. *Standards in Practice Grades 3-5*. Urbana, IL: National Council of Teachers of English, 1996.

Smagorinsky, Peter. *Standards in Practice Grades 9-12*. Urbana, IL: National Council of Teachers of English, 1996.

*Standards Exemplar Series, Assessing Student Performance Grades 9-12*. Edited by Miles Myers and Elizabeth Spalding. Urbana, IL: National Council of Teachers of English, 1997.

*Standards for the Assessment of Reading and Writing*. Newark, DE: International Reading Association and National Council of Teachers of English, 1994.

Tallent-Runnels, Mary and Candler-Lotven. *Academic Competitions for Gifted Students: A Resource Book for Teachers and Parents*. Newbury Park, CA: Corwin Press, 1996.

*Teaching Literature in Middle School: Fiction*. Standards Consensus Series. Urbana, IL: National Council of Teachers of English, 1996.

*Teaching Reading and Literature, Grades 4-6*. Standard Consensus Series. Edited by Jennifer Wilson. Urbana, IL: National Council of Teachers of English, 1997.

*Teaching Reading and Literature in Early Elementary Grades*. Standards Consensus Series. Edited by Jennifer Wilson. Urbana, IL: National Council of Teachers of English, 1997.

*Teaching Reading With the Other Language Arts*. Edited by Ulrich H. Hardt. Newark, DE: International Reading Association, 1983.

## English/Language Arts Teacher Resources

*Teaching the Writing Process in High School.* Standards Consensus Series. Urbana, IL: National Council of Teachers of English, 1995.

Trelease, Jim. *The Read Aloud Handbook*, New York: Penguin Books, 1995.

*Teaching Literature in High School: The Novel.* Standards Consensus Series. Urbana, IL: National Council of Teachers of English, 1995.

*Standards for the English Language Arts.* Urbana, IL and Newark, DE: International Reading Association & National Council of Teachers of English, 1996.

*Using Nonfiction Trade Books in the Elementary Classroom From Ants To Zeppelins.* Edited by Evelyn B. Freeman and Diane Goetz Person. Urbana, IL: National Council Teachers of English, 1989.

Van Tassel-Baska, Joyce et.al. *Developing Verbal Talent: Ideas and Strategies for Teachers of Elementary and Middle School Students.* Needham Heights, MA: Allyn & Bacon 1996.

Weaver, C. ed. *Reconsidering a Balanced Approach to Reading.* Urbana, IL: National Council of Teachers of English, 1997.

Wilhelm, Jeffrey D. *Standards in Practice Grades 6-8.* Urbana, IL: National Council of Teachers of English, 1996.

*Writing and Reading to Learn.* Edited by Nea Stewart-Dore. Portsmouth, NH: Heineman, 1987.

### Publications: Periodicals

*Journal of Adolescent & Adult Literacy*

A Journal of the International Reading Association. Norman J. Unrau, Editor. California State University, Los Angeles, California.

*Language Arts*

National Council of Teachers of English, Curt Dudley-Marling, Sharon Murphy, Editors. York University, Toronto, Ontario, Canada.

*Primary Voices K-6*

National Council of Teachers of English, Kathy Meyer Reimer, Diane Stephens, and Jennifer Story, Editors.

*Reading Research Quarterly*

A Journal of the International Reading Association, John Readence, Diane Barone, Editors. University of Nevada, Las Vegas, Nevada.

## English/Language Arts Teacher Resources

### *The Reading Teacher*

A Journal of the International Reading Association. Nancy Padak, Timothy Rasinski, Editor.  
Kent State University, Kent Ohio.

## Internet Resources

The Alphabet Superhighway  
<http://www.ash.udel.edu/ash/>

American Library Association/Association for Library Service to Children  
<http://www.ala.org/alsc/>

America Reads Challenge  
<http://www.cns.gov/areads>

Authors Mentoring Authors On-Line A Writing Workshop  
<http://www.intercom.net/user/meh/author/html>

Bank Street College  
<http://www.bnkst.edu/americanreads/books.html>

Children's Book Council  
<http://www.cbcbooks.org/>

Children's Literature Web Guide  
<http://www.acs.ucalgary.ca/dkbrown/>

ERIC Clearinghouse on Reading, English, and Communication  
[http://www.indiana.edu/eric\\_rec](http://www.indiana.edu/eric_rec)  
<http://www.ncee.org>

Homework Central English/Language Arts  
<http://www.homeworkcentral.com/english/tac.elps.vt.edu/htmldvcs/ibm.html>

Kathy Schrock's Guide for Educators  
<http://www.kidscampaigns.org/>

Literacy Volunteers of America  
<http://literacy.kent.edu/LVA/>

National Council of Teachers of English  
<http://www.ncte.org>

National Institute for Literacy  
<http://www.nwrel.org/national/>

## English/Language Arts Teacher Resources

Reading On-Line

<http://www.readingonline.org>

### Videos

*Incorporating Broad Based Thematic Units in the Curriculum*, Western Ky University Center for Gifted Studies, (program 2), 11:36 minutes.

*Incorporating Critical Thinking Skills into the Curriculum*, Western Ky University Center for Gifted Studies, (program 3), 1:44 minutes.

*Incorporating Creative Thinking Skills into the Curriculum*, Western Ky University Center for Gifted Studies, (program 4), 20:44 minutes.

*Opening Up the Curriculum Getting Rid of the Ceiling*, Western Ky University Center for Gifted Studies, (program 1), 11:46 minutes.

### Professional Organizations

American Library Association (ALA)

50 East Huron Street, Chicago, IL 60611, (312) 280-2162

Carnegie Center for Learning and Literacy

251 West Second Street, Lexington, KY, (606) 254-4175

Center for the Improvement of Early Reading Achievement (CIERA)

610 E University Ave, Rm. 1600 SEB, Ann Arbor, MI, 48109-1259, (734) 647-6940

International Reading Association

800 Barksdale Road, P.O. Box 8139, Newark, DE, 19714-8139, (302) 731-1600

Kentucky Communication Association

Alyce Grover, Somerset Community College, 808 Monticello, Somerset, KY, 42501 (606) 679-8501

Kentucky Council of Teachers of English/Language Arts (KCTE/LA)

Angela Hildebrand, Morehead State University, Morehead, KY, 40351 (606) 783-2426

Kentucky Reading Association (KRA)

Shirley Long, Eastern Kentucky University, 112 Bert Combs Building, Richmond, KY, 40475 (606) 622-2960

## English/Language Arts Teacher Resources

National Council of Teachers of English

1111 H Kenyon Road, Urbana, IL, 61801-1096, (800) 369-6283

National Center for Family Literacy

325 West Main Street, Suite 200, Louisville, KY, 40202, (502) 584-1133

National Research Center on English Learning & Achievement (CELA). University at Albany, State University of New York, 1400 Washington Avenue, Albany, New York, 12222, (518) 442-5026

For additional resources, see the Kentucky Department of Education's Web Site at <[www.kde.state.ky.us](http://www.kde.state.ky.us)> and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12*.

**NOTES**



# **Elective Credits**





## **High School English/Language Arts Journalism**

Elective journalism class offerings include beginning journalism, newspaper, yearbook, and broadcast journalism. Courses are not necessarily sequential; however, it is recommended that students successfully complete the beginning journalism course before enrolling in newspaper, yearbook, or broadcast journalism courses.

Although journalism electives are not required for graduation, they provide students with opportunities to gain experience in real-world application of these skills: critical thinking, information gathering, writing, organizing, filming and photography, and using technology to communicate information. Courses blend strands of reading, writing, listening, observing, inquiry, using technology as a communication tool, and practical living, among others. All Kentucky learning goals are incorporated into each class.

Scholastic journalism, by its very nature, is saturated with authentic tasks, whether they are writing, filming, or photographing. Learning strategies inherent in journalism classrooms must focus on enabling students to create, produce, and have ownership in journalistic products, while exercising their First Amendment rights with guidance. All four courses are product-based learning experiences for students to acquire skills that will lead to producing either student publications or broadcasts. These courses are designed to also prepare students to become lifelong critical consumers of media.

The following content chart gives essential content for the entire journalism sequence. How the content/process is applied within each course is outlined in models for each course. For example, suggested activities for selecting and using appropriate technology will be given for broadcast journalism, as well as for newspaper.

## High School Journalism

Academic Expectations	Content/Process
<p><b>Inquiry (1.1)</b></p> <p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Visual Communication (1.13)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Rights and Responsibility (2.15)</b></p> <p><b>Consumer Decisions (2.30)</b></p> <p><b>Think and Solve Problems (5.1 - 5.5)</b></p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand and exercise rights and responsibilities of free speech.</li> <li>• analyze and evaluate mass media as informed consumers.</li> <li>• seek, gather, and evaluate information as basis for writing in appropriate styles.</li> <li>• apply editing skills, using established copyediting and proofreading symbols and appropriate style handbooks.</li> <li>• recognize, create, and combine photography, art, graphics, and videography to design and produce final products.</li> <li>• set goals, solve problems, make decisions, assume responsibility, and work cooperatively to produce final products.</li> <li>• devise and execute plans for financing products in business-like manner.</li> <li>• select and use appropriate technology.</li> </ul>

## **High School English/Language Arts Introduction to Journalism**

### **Course Overview:**

Informed citizens are the cornerstone of democratic societies. All people participate in public communication of information as both receivers and disseminators. Informed discussion and fair comment of information are as essential to a free society as gathering, preparing, and publishing that information. Individuals are required to make daily decisions that affect personal well-being, as well as well-being of community, national, and international institutions and cultures.

This one-credit course has been designed as an introduction to journalism practices. It sets journalistic practices with historical and social perspectives. Students also receive an overview of skills and knowledge necessary to analyze, organize, assimilate, and disseminate information in responsible and effective manners. Content presented relates to journalism content charts at the beginning of this section. Additional advanced courses (e.g., broadcast journalism, newspaper, yearbook) are advised to provide further application of skills learned in this course.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to the journalism content chart. Sample activities and sample extensions for diverse learners are found on the right-hand pages. While sample activities address the journalism content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How can I best be a responsible journalist?
  
- How can I be manipulated by media?
  
- How do I find ideas and information to communicate with others?
  
- How do I write effective articles/stories for publication or broadcast?
  
- How do I revise and edit my work to communicate more effectively?
  
- How do I create products that communicate visually with my audience?
  
- How can I work most effectively with others to create final products?
  
- How do I find necessary resources to produce and finance products?
  
- How can I best use technology to produce final products?

**High School English/Language Arts  
Introduction to Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Rights and Responsibilities (2.15)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I best be a responsible journalist?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand rights and responsibilities.</li> <li>• analyze and evaluate mass media.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Introduction to Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze journalistic rights and responsibilities given by the U.S. Constitution by researching key First Amendment/Sixth Amendment conflict cases and strategies that have proven useful in avoiding those conflicts. Produce charts that correlate conflicts with strategies.</li> <li>• use Internet to research key libel cases to identify successful strategies for avoiding libel and slander (e.g., truth, objectivity, accuracy, fair comment, privilege). Prepare guides for novice reporters that indicate how to use the three tests for libel and key defenses against charges of libel and slander.</li> <li>• evaluate conflicts between the First Amendment’s guarantee of fair trial and freedom of the press. Write editorials based on actual cases and court decisions to weigh freedoms and responsibilities of press against rights of those on trial.</li> <li>• write personal essays, comparing news coverage in United States with countries that do not provide First Amendment guarantees.</li> <li>• write test-case scenarios for others to evaluate rights and responsibilities of press in particular situations. Participate in class discussion about how cases should be resolved legally and ethically.</li> </ul>	<p>Brenda and Mike are interested in pursuing careers in law. They will research cases that deal specifically with high school newspapers and, under the guidance of an attorney, prepare at least one brief for cases they have found. Alternatively, they will research and find example cases on copyright, plagiarism, use of electronic sources to be used in writing assignments (<i>Types of extensions: purpose and appropriateness, complexity, resources and materials, environment, level of support, demonstration of knowledge, participation, procedures and routines</i>).</p>

**High School English/Language Arts  
Introduction to Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Inquiry (1.1)</b></p> <p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Visual Communication (1.13)</b></p> <p><b>Rights and Responsibilities (2.15)</b></p> <p><b>Consumer Decisions (2.30)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I be manipulated by media?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate mass media.</li> <li>• understand rights and responsibilities.</li> </ul>

## High School English/Language Arts Introduction to Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read straight-news stories, opinion columns, news analyses, and editorials. Identify fact and opinion in each. Evaluate which are more factual relative to their purpose. Prepare consumer guides on how to read various types of news stories in print and broadcast media.</li> <li>• track news stories in various media to determine how placement of story, time and space, and choice of visuals and sidebars affect perceptions of accuracy and importance of news.</li> <li>• view news photographs and footage of tragic events (e.g., Kennedy assassination, Standard Gravure shooting). Evaluate how selection of visuals impacts emotional appeal of stories. Collaboratively prepare textbook chapters on photography ethics for photographers and editors.</li> <li>• research examples of yellow journalism. In open-response situations, describe characteristics and results of this style of reporting.</li> <li>• use graphic organizers to compare objectivity, truth, and accuracy of stories in various newspapers, magazines, broadcast media, and Internet. Reflect in journals on whether perceived goals of news organizations (e.g., <i>The Enquirer</i>, CNN) are different.</li> <li>• revise teacher-provided biased copy to reflect objectivity.</li> <li>• describe various types of advertising techniques (e.g., involvement, appeal to emotions, association, fear, buzz words, targeting). Create bulletin board displays to identify and explain techniques and show examples of each.</li> </ul>	<p>Karen and Bill communicate using American Sign Language (ASL). They regularly watch closed-captioned news broadcasts to gather information. For this assignment, an ASL interpreter signs a taped broadcast to them. After comparing the amount and kind of information received in both presentations, they prepare consumer guides for use of closed-captioned broadcasts (<i>Types of extensions: resources and materials, purpose and appropriateness, motivation</i>).</p>



**High School English/Language Arts  
Introduction to Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Rights and Responsibilities (2.15)</b></p> <p style="text-align: center;"><b>Consumer Decisions (2.30)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I find and select ideas and information to communicate with others?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• seek, gather, and evaluate information.</li> <li>• apply editing skills.</li> <li>• set goals, solve problems, make decisions.</li> <li>• select and use technology.</li> <li>• understand and exercise rights and responsibilities.</li> </ul>

## High School English/Language Arts Introduction to Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• reduce periodical articles and news broadcasts to essential facts. Discuss various ways those facts may have been gathered. Prepare flow charts of fact-gathering into news stories.</li> <li>• read and view sample news stories to evaluate relevance, value, and accuracy of information. Establish criteria checklist to evaluate stories written by classmates.</li> <li>• participate in editorial board conferences to select topics for school media, based on audience, newsworthiness, relevance, and responsibility to readers.</li> <li>• identify appropriate sources of information within school and community. Develop contact sheets for sources and types of information they can provide (e.g., bookkeeper for budget, team manager for scores).</li> <li>• identify most effective methods of interview process (e.g., examples, anecdotes, explanations that illustrate facts). Develop skeleton lists of questions for new reporters to get appropriate and sufficient information.</li> <li>• videotape students in mock interviews. Participate in class discussions to analyze techniques. Conduct follow-up interviews, using suggestions for improvement in questions and techniques.</li> <li>• collect information for news stories through personal interviews, data research, and observation. Write stories based on multiple sources with all sources attributed.</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestion:</b> Use e-mail to interview sources in other cities who might not be available for personal or telephone interviews.</i></p> <ul style="list-style-type: none"> <li>• read <i>Associated Press Stylebook</i> to determine appropriate standards of attribution, grammar, and spelling. Collaborate to create local style sheet. Use style sheet to edit and evaluate students' stories.</li> </ul>	

**High School English/Language Arts  
Introduction to Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Visual Communication (1.13)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I write effective articles/stories for publication or broadcast?</p> <p>How do I revise and edit my work to communicate more effectively?</p> <p>How can I best use technology to produce</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand rights and responsibilities.</li> <li>• seek, gather, and evaluate information.</li> <li>• apply editing skills.</li> <li>• recognize, create, and combine graphics.</li> <li>• select and use technology.</li> </ul>

**High School English/Language Arts  
Introduction to Journalism**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read models of news stories to note style and accuracy. Follow models to produce stories from fact sheets in appropriate style (e.g., avoid wordiness, redundancy, cliches, opinion, vagueness).</li> <li>• conduct reader surveys of local publications to determine which writing styles and visuals are considered effective. Use results to plan for school periodicals.</li> <li>• use attention-grabbing leads and transition/quote sequences to write feature articles. Submit articles for publication in professional periodicals.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Submit articles in electronic form to online publications.</i></p> <ul style="list-style-type: none"> <li>• write cutlines for photos in appropriate style (e.g., in present tense with information about both what is and is not seen).</li> <li>• collect samples of various headline styles. Determine characteristics of successful examples. Produce headline writing style guides for school publications. Write appropriate headlines, following guide.</li> <li>• evaluate publications that rely heavily on graphics to tell stories (e.g., <i>USA Today</i>). Identify information that was extracted from body copy and published as graphics (e.g., sidebars, lists, quick-read graphics, infographics, charts, maps). Use technology to develop sidebar graphics to accompany stories.</li> <li>• determine characteristics of labeled opinion pieces (e.g., columns, reviews). Use characteristics to prepare columns and reviews.</li> <li>• write editorials, focusing on relevance, fairness, and accuracy while emphasizing solutions. Evaluate classmates' writing with criteria checklist.</li> <li>• compare and contrast print writing and broadcast writing styles, using authentic samples. Write broadcast scripts from notes furnished by teacher or from research. Incorporate appropriate language for direction and cuts to graphics and drop-in pieces.</li> <li>• use word processing software to create, edit, and revise stories.</li> <li>• use copy editing marks and symbols from <i>Associated Press Stylebook</i> and local style sheet to revise and edit copy for publication.</li> </ul>	

**High School English/Language Arts  
Introduction to Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I create products that communicate visually with my audience?</p> <p>How can I best use technology to produce final products?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• recognize, create, and combine graphics.</li> <li>• set goals, solve problems to produce products.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Introduction to Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• view samples of published periodicals. Eliminate all visuals and evaluate impact of relying on print alone. Write responses that recognize impact of combining art, photography, graphics, and design on effective communication.</li> <li>• evaluate impact of typefaces and styles on reader. Create annotated typeface charts for newsroom display that designate which type faces and sizes are appropriate for various purposes (e.g., disasters, advertising, editorials).</li> <li>• develop clip art and photo files for print and broadcast media. Use design elements to incorporate effective use of files in producing advertising, editorial cartoons, and news.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestions:</b> Compile electronic clip files, using Internet and software. Use digital cameras to build photo files.</i></p> <ul style="list-style-type: none"> <li>• recognize contemporary layout and design trends by creating files of samples from current magazines and newspapers. Analyze which layouts and designs are most effective for particular media and purposes.</li> <li>• recognize, produce, and evaluate still and video photos through training in exposure, composition, angles, available light, flash, contrast, focus, and cropping.</li> <li>• use basic elements of design to produce newspapers, magazines, and marketing materials (e.g., brochures, business cards, ads, Web pages).</li> <li>• write scripts and produce 30-second videotapes representing authentic purposes (e.g., ads, news, features, training).</li> </ul>	

**High School English/Language Arts  
Introduction to Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Visual Communication (1.13)</b></p> <p><b>Rights and Responsibilities (2.15)</b></p> <p><b>Consumer Decisions (2.30)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I work most effectively with others to create final products?</p> <p>How do I find necessary resources to produce and finance products?</p> <p>How can I best make use of technology to produce final products?</p>	<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• set goals, solve problems, make decisions to produce products.</li> <li>• devise and execute plans for finances.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Introduction to Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• collaborate to determine and create journalistic products (e.g., videos, newspapers, mini yearbook section, marketing campaign) for specified audiences.</li> <li>• implement management and organizational skills by choosing editors and staff positions and creating job descriptions for production of selected products. Develop relationship with printer and/or production studio, determining costs and schedules to complete products.</li> <li>• create production schedules and set deadlines. Employ cooperative methods and materials (e.g., assignment boards, group policy decisions, dummy sheets, advertising insertion orders) to plan and complete work on schedule.</li> <li>• investigate codes of ethics for news and advertising organizations (e.g., Society of Professional Journalists, American Advertising Federation). Following these models, collaborate to develop local code of ethics concerning advertising, journalistic products, and behavior. Adhere to code throughout project.</li> <li>• provide financial stability for project through planning advertising sales, fund-raisers, and circulation sales. Keep accurate financial records and implement professional billing systems (e.g., computer database). Act responsibly to order, use, and conserve supplies, equipment, and other materials.</li> <li>• use technology to design print products, employing appropriate layout and design principles.</li> </ul>	<p>Eugene has a sharp dry wit and displays mature interests and insights typical of intellectually gifted students, into issues of justice. He also demonstrates reluctance to try tasks he is unsure of performing at high levels; he has never felt competent in art, but has excellent ideas for editorial cartoons. He will work with art teachers and technology coordinators to learn ways to produce editorial cartoons through drawing and using appropriate software (<i>Types of extensions: purpose and appropriateness, level of support, motivation, resources and materials, demonstration of knowledge</i>).</p>



**High School English/Language Arts  
Introduction to Journalism**

**NOTES**

# High School English/Language Arts

## Broadcast Journalism

**Prerequisite:** Introduction to Journalism

### **Course Overview:**

This one-credit course provides introductory training in planning and producing video programs for broadcast. Students gain understanding of how visual media is used for entertainment, communication, and education. Students apply various language arts skills, including speaking, listening, observing, writing, reading, inquiry, and using technology as communication. Specific topics include visualizing messages, sounding messages, verbalizing messages, producing messages, taping/editing messages, and careers related to video. While the course is based in scholastic journalism, students might produce weekly community news programs and/or other video projects.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to the journalism content chart. Sample activities and sample extensions for diverse learners are found on the right-hand pages. While sample activities address the journalism content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How has technology affected how I obtain and deliver information about our world?
- How do I evaluate effective video products?
- How do I gather and evaluate information and package it in video form for particular audiences for specific purposes?
- How do I craft successful broadcast scripts?
- How do produce video packages that convey my intended messages?
- How can I create sets or backgrounds that contribute to effectiveness of videos or broadcasts?
- What jobs related to video production are best suited to my talents?

**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How has technology affected how I obtain and deliver information about our world?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate mass media.</li> <li>• seek, gather, and evaluate information.</li> <li>• recognize, create, and combine graphics to produce products.</li> <li>• select and use technology.</li> </ul>

**High School English/Language Arts  
Broadcast Journalism**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use Internet to research history of technological developments related to broadcast journalism. Identify key events and advancements in news gathering, reporting, and delivery and their impacts. Create storyboards for documentaries outlining impact of development.</li><li>• prepare multimedia presentations on how news coverage of repeated historical events (e.g., presidential elections) has changed over time. Insert archive footage and sound bites.</li></ul>	

**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I evaluate effective video products?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate mass media.</li> <li>• seek, gather, and evaluate information.</li> <li>• select and use technology.</li> <li>• solve problems and make decisions cooperatively.</li> </ul>

## High School English/Language Arts Broadcast Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify techniques (e.g., fact vs. opinion, interview, sequence, narrative, delivery methods) used to create video products (e.g., news, public service announcements, commercials, editorials, commentaries, cartoons) for various purposes and audiences. Develop reference sheets of methods with explanations of their purposes for production staff use.</li> <li>• develop criteria collaboratively for judging quality of various video productions based on intended audience and purpose. Critique video products to determine effectiveness based on developed criteria.</li> <li>• compare news broadcasts from different channels on the same day on basis of story selection, length of coverage, order of presentation, use of on-the-scene reporter, supporting graphics, and/or treatment of story (e.g., angle, experts interviewed, viewpoints expressed).</li> <li>• compare news stories and editorials on same topics, identifying fact and opinion, sources, and qualifying language. Use results to write guidelines on how opinion</li> </ul>	<p>Josh learns new vocabulary, but has trouble with word retrieval. As new vocabulary is introduced to identify techniques used in creating videos, Josh uses pocket calculators to input vocabulary to use as references. He also receives visual imagery instruction to enhance memory of vocabulary (<i>Types of extensions: procedures and routines, order of</i></p>

**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Visual Communication (1.13)</b></p> <p><b>Rights and Responsibilities (2.15)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I gather and evaluate information and package it for particular audiences for specific purposes?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand rights and responsibilities.</li> <li>• analyze and evaluate mass media.</li> <li>• recognize, create, and combine graphic elements.</li> <li>• solve problems to produce products.</li> <li>• select and use technology.</li> </ul>

**High School English/Language Arts  
Broadcast Journalism**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• explain how First Amendment rights relate to broadcast media/video production. Review the <i>Society of Professional Journalists' Code of Ethics</i> to identify how it relates to broadcast journalism. Respond to case studies based on First Amendment rights and ethical issues (e.g., objectivity, fairness, source credibility) by identifying ethical issues and legal solutions.</li><li>• view various news stories to identify criteria for selection of content for particular audiences and purposes. Create checklists of criteria to determine whether particular stories are appropriate for certain programs, time slots, and audiences.</li><li>• watch taped interview stories to identify effective on- and off-camera interview techniques. Develop skeleton lists of questions for new reporters to get appropriate, sufficient, and interesting information. Write questions for mock interviews. Record interviews and use collaborative class discussion to analyze for effectiveness.</li><li>• view sample footage to identify effective visual techniques (e.g., camera angles, placement of reporter, lighting, background). Use models to plan video shoot of interview by scripting questions, floor directions, and roll-ins.</li><li>• produce human-interest features in news magazine format that contain strong kicker and lead, at least one interview,</li></ul>	



**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Rights and Responsibilities (2.15)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I craft successful broadcast scripts?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• seek, gather, and evaluate information.</li> <li>• apply editing skills.</li> <li>• recognize, create, and combine graphics.</li> <li>• select and use technology.</li> </ul>

**High School English/Language Arts  
Broadcast Journalism**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• prepare short video presentations that define and show examples of various broadcast types (e.g., features, news, commercials, instruction, editorial/commentary, highlights, promotional spots, sports, music video. Use presentations for other classes (e.g., English, sociology, current events) to demonstrate modern media uses.</li><li>• prepare simple scripts suitable for production, demonstrating effective use of elements (e.g., graphics, camera angles/shots, floor direction, anchor script). Use correct terminology (e.g., close up, zoom) in script. Edit for correctness and clarity.</li><li>• write 30-second news scripts with appropriate elements,</li></ul>	<p>Bessie learns at the same level and pace as her peers when information is presented orally, and she is allowed to demonstrate her knowledge orally. To write 30-second news scripts suitable for production, Bessie uses computer voice-to-text program (<i>Type of extension: resources and materials</i>).</p>

**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Writing (1.11)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Gather Information (1.1)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I produce video packages that convey my intended messages?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• seek, gather, and evaluate information.</li> <li>• recognize, create, and combine graphic elements.</li> <li>• set goals, solve problems, make decisions to produce products.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Broadcast Journalism

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• prepare graphic for new equipment operators to identify parts of production equipment (e.g., cameras, lights, sound board). Use information to troubleshoot simple technical problems and to propose and implement solutions.</li> <li>• prepare tapes for and shoot scenes using various shots and camera techniques. Identify equipment necessary for taping sessions through director's instructions, preproduction conference, and script. Set up and transport equipment correctly in preparation for sessions. Use correct and appropriate terminology (e.g., fade, white balance, zoom, establish shot) to plan and implement video shoot. Break down and store equipment efficiently after use.</li> <li>• storyboard and shoot video packages with more than one scene; using various shots and on-camera editing techniques.</li> <li>• create simple video packages that include sequences transferred from one tape to another, using crash editing.</li> </ul>	<p>Pat works on following directions and social skills to prepare for working with job coaches in the community. He uses picture maps for following written directions. With peers, Pat participates in all classes in which videotaping sessions occur to assist with setting up and breaking down equipment, using maps of equipment placement (<i>Types of extensions: purpose and appropriateness, complexity, environment, level of</i></p>

**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I create sets or backgrounds that contribute to effectiveness of videos or broadcasts?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• recognize, create, and combine graphic elements.</li> <li>• set goals, solve problems, make decisions to produce products.</li> </ul>

**High School English/Language Arts  
Broadcast Journalism**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• apply artistic and visual design elements (e.g., theme, color theory, spacing, perspective) to create set designs.</li><li>• design, construct, and use simple sets for news, announcement, weather, and sports segments.</li><li>• conduct audience surveys to determine effectiveness of various set elements and designs.</li></ul>	

**High School English/Language Arts  
Broadcast Journalism**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Consumer Decisions (2.30)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>What jobs related to video production are best suited to my talents?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• set goals, solve problems, make decisions, assume responsibility to produce products.</li> </ul>

**High School English/Language Arts  
Broadcast Journalism**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• create organizational charts to identify each video production job and its responsibilities. Shadow adults working in video production field to complete description of each job for chart.</li><li>• develop career planning guides by identifying postsecondary education requirements of positions of interest. Compare requirements at various universities and technical schools.</li><li>• serve in each capacity of production teams with responsibility for finished videotape sequence, production, and video package.</li><li>• use class discussion, logs, videos, and criteria sheets to critique own and others' work. Make improvements in products and work habits based on that critique.</li></ul>	



**High School English/Language Arts  
Newspaper Production**

**NOTES**

# High School English/Language Arts

## Newspaper Production

**Prerequisite:** Introduction to Journalism

### **Course Overview:**

Newspaper production is designed to build upon students' knowledge gained from their initial experience in an introduction to journalism course. Working on a newspaper allows students to experience not only opportunities in real-world writing, but also to develop leadership skills, think and solve problems in many situations, and become self-sufficient individuals. Because of the responsibilities of producing school newspapers and involvement in their community, students ultimately become more responsible members of their community.

Students learn and act upon freedoms and responsibilities of free press. They apply many communication concepts, including speaking, listening, writing, reading, inquiry, and layout and design. Use of technology is an integral part of this course. In addition, students put into practice many concepts learned in classes such as science and social studies.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to the journalism content chart. Sample activities and sample extensions for diverse learners are found on the right-hand pages. While sample activities address the journalism content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- What are purposes and functions of high school newspapers?
- What are legal and ethical rights and responsibilities of a free press in producing high school newspapers?
- How do I gather information and correctly write news, features, sports, and opinions for high school newspapers?
- How do I use editing skills correctly?
- How can I design effective layouts?
- What business practices are best to produce high school newspapers?
- How do I prepare newspapers for printing and production?
- How can I use technology to produce high school newspapers?

## High School English/Language Arts Newspaper Production

Academic Expectations	Guiding Questions	Correlations to the Journalism Content Chart
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Rights and Responsibilities (2.15)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>What are purposes and functions of high school newspapers?</p> <p>What are legal and ethical rights and responsibilities of a free press in producing high school newspapers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand rights and responsibilities.</li> <li>• analyze and evaluate mass media.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Newspaper Production

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use graphic organizers to compare contents and purposes of various high school newspapers, daily and weekly newspapers, and news Web sites.</li> <li>• view portions of KET video <i>Rights and Responsibilities of the Press</i>. Participate in panel discussions to investigate limitations of the press (e.g., copyright, libel, plagiarism, use of electronic sources) to produce high school newspapers.</li> <li>• investigate legal precedents for Constitutional freedom of press rights. Orally adjudicate mock press rights situations based on court precedents.</li> <li>• review national student and professional codes of ethics (e.g., <i>Society of Professional Journalists' Code of Ethics</i>). Use published codes as model to write code of conduct and editorial policies for newspaper staff.</li> </ul>	<p>Kara is very interested in research. However, she finds it very difficult to make oral presentations. Kyle is an excellent speaker, but lacks organizational skills. For this activity of orally adjudicating cases, they will be assigned as partners. Together they will complete necessary research. They will divide delivery duties by having Kara make the formal presentation and Kyle will handle the cross examination. Kara will assist Kyle to prepare detailed notes for follow-up questioning. Kyle will assist Kara to prepare for the oral delivery by practicing with her, giving her pointers on how to deliver her prepared remarks (<i>Types of extensions: purpose and appropriateness, environment, procedures and routines, demonstration of knowledge, level of support, participation, motivation</i>).</p>

**High School English/Language Arts  
Newspaper Production**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Visual Communication (1.13)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I gather information and correctly write news, sports, features, and opinions for high school newspapers?</p> <p>How do I use editing skills correctly?</p> <p>How can I use technology to produce high school newspapers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate mass media.</li> <li>• seek, gather, and evaluate information.</li> <li>• apply editing skills.</li> <li>• set goals, solve problems, make decisions to produce products.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Newspaper Production

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• survey student body and staff to identify stories of interest. Conduct editorial staff brainstorming sessions to determine worth of those ideas and time lines for coverage. Assign reporters and photographers to cover stories.</li> <li>• read news, features, and editorial articles from a various publications (e.g., daily national newspapers, weekly local publications, other student publications). Discuss common structures (e.g., leads, attribution, supporting information). Develop skeleton plans for certain types of stories as guides for beginning reporters.</li> <li>• gather information for stories through various methods and sources (e.g., Internet, e-mail, interviews, Infotrac). Evaluate gathered material for potential bias, relevancy, and accuracy.</li> <li>• write appropriate types of stories (e.g., news, feature, editorial) based on purposes and assignments. Apply proper journalism style habits including placement of attribution, consistency in titles, tight copy, and elimination of cliches.</li> <li>• develop and use staff style sheet modeled after <i>Associated Press Style Manual</i>. Use local style sheet and manual to revise and edit stories. Revise stories for appropriate article content and format. Use recognized copyediting and proofreading marks and symbols to proofread and edit own and others' work.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Employ grammar and spelling software to enhance self-editing skills.</i></p> <ul style="list-style-type: none"> <li>• compose headlines for articles using appropriate language and style guidelines. Copyfit to standard column widths.</li> <li>• write cutlines for photos. Copyfit cutlines to appropriate sizes for layouts. Use standard format (e.g., two-sentence with obvious followed by additional information) with correct style for publication.</li> </ul>	<p>Jared is a gifted writer, but is very self-directed about his choice of assignments. Since he is very interested in sports, he is an avid reader of sports news. When he begins writing news stories for the paper, everything he writes is in the sports style. The journalism teacher will assign Jared to read and report on styles of other types of stories (e.g., human interest features, world news analysis). He will then write stories in other styles of his choice. To demonstrate his ability to write sports stories, he will conduct class sessions on effective use of language and style in sportswriting (<i>Types of extensions: purpose and appropriateness, procedures and routines, resources and materials, demonstration of knowledge, motivation</i>).</p>

## High School English/Language Arts Newspaper Production

Academic Expectations	Guiding Questions	Correlations to the Journalism Content Chart
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I use technology to produce high school newspapers?</p> <p>How can I design effective layouts?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate mass media.</li> <li>• recognize, create, and combine graphics.</li> <li>• set goals, solve problems to produce products.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Newspaper Production

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine model newspapers for page design elements and layout trends. View archive newspapers to compare old layout styles with current trends. Present findings by preparing and displaying mock layouts as patterns. Use presentations as basis for establishing local design style sheets, including use of specific fonts, headlines, pullout quotes, drop caps, white space, photos, graphics, and special effects.</li> <li>• create newspaper pages on dummies (scaled layout sheets). Use correct layout and geometric principles for basic design elements (e.g., headlines, cutlines, photos, white space, copy, columns). Use desktop publishing technology to produce pages.</li> <li>• design and produce graphics to complete layouts. Take, develop, and print quality photos. Crop photos to enhance image and layouts. Produce graphics from clip art files or graphics software programs.</li> <li>• design ads that appeal to specific audiences. If purchased ads, follow advertisers' specifications. If house ads, create language and graphics to promote newspaper sales or readership.</li> </ul>	<p>Amy has difficulty with spatial organization. Newspaper proportional layouts will be extremely challenging for her. Amy will work with her geometry teacher to enlarge layouts, rather than reducing them. She will use manipulatives to place elements attractively on the layouts and then reproduce her layouts on dummy sheets. Amy will be given additional time to produce her layouts (<i>Types of extensions: procedures and routines, resources and materials, level of support, demonstration of knowledge, time</i>).</p>



**High School English/Language Arts  
Newspaper Production**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Visual Communication (1.13)</b></p> <p align="center"><b>Consumer Decisions (2.30)</b></p> <p align="center"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>What business practices are best to produce high school newspapers?</p> <p>How can I use technology and desktop publishing programs to produce high school newspapers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• recognize, create, and combine graphic elements.</li> <li>• set goals, solve problems, make decisions.</li> <li>• devise and execute plans for financing products.</li> <li>• select and use technology.</li> </ul>

**High School English/Language Arts  
Newspaper Production**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• create newspaper budgets to include expenses (e.g., printing, mailing, supply costs, photography, contingencies, payroll) and potential income (e.g., sales, advertisements). Determine cost of advertising to be sold in relation to budget and single issue cost (if any).</li><li>• investigate how publications price and sell their advertising space. Interview advertising managers for tips on successful management of sales process. Use information to create “How to Sell an Ad” sheet explaining basics of ad sales and staff expectations. Maintain professional relationships with advertisers by providing accurate tearsheets and ad statements and by making follow-up visits.</li><li>• collaboratively develop system for managing ad sales, contracts, and billing. Use desktop publishing software to create advertising contracts. Train staff to complete contracts correctly when selling ads. Maintain filing and tracking system for advertising.</li></ul> <p><i>Technology suggestion: Maintain computer database of ad sales.</i></p>	

**High School English/Language Arts  
Newspaper Production**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Visual Communication (1.13)</b></p> <p align="center"><b>Consumer Decisions (2.30)</b></p> <p align="center"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How do I prepare newspapers for printing and production?</p> <p>How can I use technology and desktop publishing programs to produce high school newspapers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• recognize, create and combine graphic elements.</li> <li>• set goals, solve problems, make decisions.</li> <li>• select and use technology.</li> </ul>

**High School English/Language Arts  
Newspaper Production**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• meet with printers to discuss deadlines and requirements. Explore cost advantages of presenting copy camera ready and allowing publication on alternate dates. Periodically review schedule and requirements with printer.</li><li>• use time management and organizational skills to create production schedules. Agree on staff assignments (e.g., reporters, copy editors, layout artists, photographers) to assist in production schedule. Post organizational charts and deadline calendars. Hold regular editorial meetings to evaluate progress and identify problem areas.</li><li>• develop news hole budget with advertising staff. Determine amount of space that must be devoted to advertising in order to meet budget for desired copy space. Collaboratively produce ladder of assigned pages for various sections, based on allotted space and stories for coverage.</li><li>• work cooperatively with other staff members and printer to complete final products. Create paper by sections to facilitate work flow. Produce camera ready copy for printer by established deadlines.</li></ul> <p><i>Technology suggestion: Create Web pages to publish newspaper online.</i></p>	

**High School English/Language Arts  
Yearbook**

**NOTES**

# High School English/Language Arts Yearbook

**Prerequisites:** Introduction to Journalism, basic computer course

## **Course Overview:**

Yearbook creations are challenging processes. They are also project-based learning opportunities for students who will apply communications skills, both written and visual, and use technology to create and market real-world products of historic value.

Students in this one-credit course learn about and produce real-life products that reflect today's society. Today's yearbooks record events and ambience through stories, contemporary magazine layout and design, headlines, captions, four-color process, bold graphics, and photos. Students provide picture-perfect memories as well as accurate historical records. Each two-page layout will be designed to tell stories with photos and words, as fully as space permits and as attractively as creative skills will allow. Technology has revolutionized yearbook creation as well, with yearbook publishers encouraging schools to do as much electronic pagination as they wish.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions student should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions, along with related academic expectations and correlations to the journalism content chart. Sample activities and sample extensions for diverse learners are found on the right-hand pages. Activities suggested are samples of ways to address the journalism content chart. Because yearbook production differs, some activities will be more appropriate for one school than another. These activities, which cover many aspects of scholastic journalism, are based on experience of yearbook advisors, nationally recognized practices, and current research.

## **Guiding Questions:**

- How can I make legal, moral, and ethical decisions responsibly in production of yearbooks?
- How can I apply criteria for evaluating yearbooks to make improvements in my yearbook?
- How can I gather information and write stories for yearbooks?
- How can I practice editing skills?
- How can I apply basic principles involved in creating and combining photography, art, graphics, headlines, and captions in layout and design?
- How can I manage processes for completing yearbooks?
- How can my school finance yearbooks?
- How can I apply technology and desktop publishing programs to produce yearbooks?

**High School English/Language Arts  
Yearbook**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Think and Solve Problems (5.1, 5.5)</b></p> <p><b>Rights and Responsibilities (2.15)</b></p>	<p>How can I make legal, moral, and ethical decisions responsibly in production of yearbooks?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand rights and responsibilities.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Yearbook

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• review <i>Society of Professional Journalists' Code of Ethics</i> to determine nationally recognized standards for ethical journalistic practices. Discuss how those standards relate to student press freedom and responsibilities. Develop editorial policies for staff implementation that reflect rights and responsibilities of First Amendment, as well as limitations of student press. Include legal limitations to free press (e.g., libel, privacy, plagiarism, and copyright). Evaluate periodically how well yearbook staff is complying with editorial policies.</li> <li>• develop exchange program with other schools' yearbook staffs. Compare stated editorial policies with publications. Evaluate yearbooks for possible additional ethical violations. Develop position statements on difficulties of following editorial policies. Prepare evaluation tests for avoiding ethical violations.</li> <li>• conduct electronic research on free speech cases involving yearbook censorship. Use graphic organizers to compare to possible local situations.</li> <li>• view and evaluate <i>Absence of Malice</i> video. Respond to open-response situations about ethics portrayed.</li> <li>• role play potential ethical problems (e.g., anonymous sources, sensitive topics, potentially libelous quotations, off-the-record comments, conflict of interest assignments). Develop case scenarios to train novice staff members on how to avoid ethics violations.</li> <li>• research, create, and adhere to advertising code of ethics tenets (e.g., right to privacy, truth in advertising, libel, obscenity).</li> </ul>	



**High School English/Language Arts  
Yearbook**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p align="center"><b>Reading (1.2)</b></p> <p align="center"><b>Writing (1.11)</b></p> <p align="center"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p align="center"><b>Inquiry (1.1)</b></p> <p align="center"><b>Technology as Communication (1.16)</b></p> <p align="center"><b>Visual Communication (1.13)</b></p> <p align="center"><b>Consumer Decisions (2.30)</b></p> <p align="center"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I apply criteria for evaluating yearbooks to make improvements in my yearbook?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze and evaluate mass media.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Yearbook

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• participate in cooperative groups to examine award-winning yearbooks. Develop common ideas of quality yearbook characteristics (e.g., theme, accuracy, historic value, technically acceptable, attractive, timely, marketable).</li> <li>• research yearbook judging criteria. Visit Internet sites (e.g., Columbia Scholastic Press Association, Journalism Education Association). View videos of yearbook publisher on yearbook criteria. Use evaluation instrument (e.g., Columbia Scholastic Press Association) to evaluate last year's publication. Write critiques of previous products, based on various criteria.</li> <li>• interview student body, gathering opinions on desirable yearbook qualities. Compare these ideas to those of staff members and national sources. Use common criteria as checklist for developing this year's publication. Create and implement plan to improve current publication.</li> </ul>	<p>Michellane and Brad's instructional goals include developing friendships and asking for assistance from natural supports. Brad uses a communication board to communicate his thoughts and ideas. Michellane uses sign language. As part of generalizing these skills to new settings, partnerships are developed with their classmates. Paired with partners, they participate in examining yearbooks. Michellane is supported by an individual who knows signing. Brad is supported by a peer enrolled in the peer tutoring course in his school. Continuous assessment data is collected about the number of times and appropriate requests for assistance (<i>Types of extensions: purpose and appropriateness, participation, level of support, resources and materials, environment, procedures and routines, demonstration of knowledge</i>).</p>

**High School English/Language Arts  
Yearbook**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Chart</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I gather information and write stories for yearbooks?</p> <p>How can I practice editing skills?</p> <p>How can I apply technology and desktop publishing programs to produce yearbooks?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• seek, gather, and evaluate information for writing.</li> <li>• apply editing skills.</li> <li>• set goals, solve problems, make decisions.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Yearbook

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop idea file for reference for yearbook articles. Research and clip teen issue ideas in current magazines. Conduct electronic research to find news and feature story topics. Use information to select topics for coverage based on audience awareness, newsworthiness, relevance, and historic merit.</li> <li>• convert local news stories into yearbook copy by using feature style of writing (e.g., avoiding editorializing, jargon, and clichés), and correct grammar, punctuation, and spelling).</li> <li>• use photos from periodicals or family albums and write yearbook style caption or sidebar for each.</li> <li>• identify appropriate sources of information within school, gathering information through listening, observing, interviewing, surveys, and notetaking.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use various forms of technology (e.g., recorders, Internet) to complete background research.</i></p> <ul style="list-style-type: none"> <li>• incorporate information into journalistic style body copy, captions and headlines. Use partial and full quotes, paraphrased and background information when appropriate. Copy should be accurate in names, dates, figures, and spelling. Use word processing programs to compose, revise, and edit copy.</li> <li>• create stylebook for staffers to use as reference. Develop and display posters on often-used rules. Incorporate <i>Associated Press Stylebook</i> standards for grammar, punctuation, abbreviation, capitalization, titles, and courtesy titles. Include standard copyediting marks. Use stylebook as basis to revise and correct stories, captions, and headlines using editing marks.</li> <li>• create collaboratively possible mini-mag on one theme for insertion in yearbook. Research and write stories and sidebars (100 or fewer words) on related topics.</li> </ul>	<p>Sally and Dwayne are excellent writers; they need further opportunities to develop their marketable writing talents. These students will work with local publications (e.g., newsletters, newspapers) to write for specific audiences (<i>Types of extensions: purpose and appropriateness, complexity, participation, time, motivation, level of support, demonstration of knowledge</i>).</p>

**High School English/Language Arts  
Yearbook**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Journalism Content Charts</b>
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.4, 5.5)</b></p>	<p>How can I apply basic principles involved in creating and combining photography, art, graphics, headlines, and captions in layout and design?</p> <p>How can I apply technology and desktop publishing programs to produce yearbooks?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• recognize, create, and combine graphics.</li> <li>• set goals, solve problems, make decisions to produce products.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Yearbook

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create files of sample layouts from magazines and other yearbooks for design ideas.</li> <li>• redesign and paste-up layouts using photocopied elements from last year's publication. Use photos from magazines to create mock yearbook layouts using colored construction paper and paste on flats. Compare various layouts for effectiveness.</li> <li>• clip vertical photos. Practice cropping perspectives by cutting photos to give horizontal perspective.</li> <li>• develop and use type stylesheets for yearbook production that include current trends for large type, drop caps, outline, spot color, full color, shading, and special effects. Use stylesheet to plan appropriate font styles and sizes.</li> <li>• plan systematic approach to photographic coverage. Create assignment sheets and progress boards to ensure coverage of events and people. Develop policies for ensuring that photos reflect composition of entire student body and staff. Implement procedures for labeling and organizing photos and managing photo lab.</li> <li>• use photographic equipment and wet or electronic darkroom to take, process, and print pictures. Recognize and produce acceptable quality photographs through specific training in camera use including exposure, composition, angles, available light, flash, contrast, focus and cropping. Use appropriate technology (e.g., digital camera, negative and flatbed scanners, darkroom equipment) to create images for reproduction in the yearbook.</li> <li>• design and post layouts that are consistent with publication's theme and are specific for each section and for cover, title page, endsheets, and division pages.</li> <li>• design layouts that reflect contemporary trends and graphics. Employ basic elements and principles of design, using photos, headlines, captions, copy, white space, columns, tool lines, and folios on every spread.</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestion:</b> Use computer programs, including desktop publishing and art to create yearbook pages, for paste up or disk submission. Include pagination.</i></p> <ul style="list-style-type: none"> <li>• evaluate periodically in editorial conferences photo content, stories, layouts, and graphics for alignment with theme. Make adjustments as necessary.</li> </ul>	

## High School English/Language Arts Yearbook

Academic Expectations	Guiding Questions	Correlations to the Journalism Content Chart
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Visual Communication (1.13)</b></p> <p style="text-align: center;"><b>Think and Solve Problems (5.1, 5.5)</b></p>	<p>How can I manage processes of completing yearbooks?</p> <p>How can I apply technology and desktop publishing programs to produce yearbooks?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• set goals, solve problems, make decisions to produce products.</li> <li>• devise and execute plans for financial products.</li> <li>• select and use technology.</li> </ul>

## High School English/Language Arts Yearbook

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify necessary staff positions and write job descriptions.</li> <li>• develop plan to stay on schedule to complete yearbook. Establish submission deadlines with publisher. Create ladder that includes production schedule and description of page contents. Post and maintain futures file (calendar of events staff plans to cover). Graph progress on sales of books and ads.</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestion:</b> Use calendar creation software to create daily, weekly, or deadline schedules for staff members and to record progress on deadlines.</i></p> <ul style="list-style-type: none"> <li>• develop consistency in use of supplies and language to facilitate communication with staff and publisher. Use printer's terminology, materials, submission forms, and proof system. Use yearbook production supplies (e.g., pica ruler, cropper, grease pencil, photo labels, job labels, job envelopes, thumbnail sketches, dummy sheets, special art submission tags).</li> <li>• maintain financial stability by planning and implementing ad sales, fund-raisers, and subscription sales to cover yearbook expenditures (e.g., printing costs, supplies, subscriptions, mailings, photography, rating services, contest fees). Purchase and keep inventory of supplies needed to meet deadlines. Create spreadsheet to monitor expenditures and income. Maintain records and communication with ad purchasers, including statements, contracts, and proofs. Plan and execute effective book sales and distribution.</li> <li>• use computer software to facilitate yearbook functions. Employ computer program's automatic indexing feature. Create statements, contracts, and display ads using desktop publishing programs. Maintain electronic scrapbook of yearbook creation process via sound recordings, photography, and computer journal entries.</li> <li>• create evaluation system to identify areas in need of improvement in staff quality and deadline production. Use system in regular staff meetings to measure progress and success.</li> </ul>	



**High School English/Language Arts  
Yearbook**

**NOTES**

## **High School English/Language Arts Journalism Glossary**

**Attribution:** Indicating source of information or quotations.

**Boldface type:** A typeface that is darker than regular typeface.

**Body copy:** Text of story excluding headlines and graphics.

**Camera-ready:** Newspaper pages ready for the printer to photograph and print.

**Caption:** Information describing people or explaining action in photo; also known as cutlines.

**Censor:** To remove information considered objectionable.

**Cliché:** Expression that has been overused.

**Clip art:** Drawings, artwork, or cartoons used to illustrate stories or provide graphic appeal to pages.

**Cropping:** Improving impact of photograph by eliminating unnecessary clutter.

**Cutlines:** Information describing people or explaining action in photo; also known as captions.

**Desktop publishing:** Using computer and specially designed software to typeset and design publications.

**Dummy sheet:** Paper ruled vertically in inches and horizontally in columns, on which preliminary plans for a page can be drawn.

**Editorial:** Commentary that represents official opinion of management of newspaper, magazine, or broadcasting station.

**FCC:** Federal Communications Commission, the government agency that regulates radio and television.

**Feature:** Informally written story emphasizing background or entertainment rather than news.

**Five W's and H:** Who, what, where, when, why, and how; key questions whose answers are incorporated in a news story.

**Flow chart:** Print organizational structure showing lines of authority and responsibility, along with relationships between offices within the organization.

**Font:** Typeface.

**Footage:** Videotape sequence.

**Futures list:** List of feature stories and news articles for possible use in later publications or newscasts.

**Headlines:** Phrases in large print that appear over stories to give brief information about story and tease readers.

## **High School English/Language Arts Journalism Glossary**

**House ads:** Displays of information to promote publication or organization that supports publication (e.g., subscription blanks, school functions).

**Insertion orders:** Written agreements to publish advertising on particular dates.

**Inverted pyramid:** Writing style that presents most important information first; the next most important information, second; and the least important, last.

**Kicker:** Short, secondary headline placed above larger primary headline or short teasing element in broadcast story.

**Lead:** First sentence or two of story that tells readers what story is about.

**Libel:** Damaging reputation of individual or organization by printing false information.

**Mini-mag:** Feature section within yearbooks that resemble magazines in content and design.

**News hole:** Amount of space devoted to news coverage in publications, exclusive of any advertising.

**Periodicals:** Any publication which appears on regular basis, such as magazines and newspapers.

**Propaganda:** Methods of persuasion based on emotional rather than rational reasons.

**Review:** Commentary which evaluates worth of artistic productions.

**Royalty:** Percentage of price of book or record that goes to author or artist.

**Sidebar:** Short, separate item accompanying a news story or magazine article that presents additional information.

**Spot color:** Use of colored ink in certain areas of periodicals.

**Straight news:** Factual account free of writer's opinion, interpretation, or analysis.

**Stylesheet:** Guidelines for news coverage for particular news organizations, generally including preferences such as spelling, name references, and type styles.

**Submission tag:** Marking system to identify where attached art or photo is to be placed when printed.

**Transition bump back:** Reporter's method of returning focus to anchor of newscast.

**Typeface:** Characteristics of particular style of type.

**White space:** Parts of page with no printed elements.

**Yellow journalism:** Presentation of information within news stories that is intentionally false or misleading.

## High School Journalism Teacher Resources

### Publications: Books

Agee, Warren, Ault, Phillip, and Emery, Edwin. *Introduction to Mass Communications*. New York: Harper and Row, 1985.

*The Associated Press Stylebook and Libel Manual*. Edited by Norm Goldstein. New York: Associated Press, 1998.

Button. *Managing Publications*. Iowa City: Quill and Scroll Society, 1982.

Cappon, Rene J. *The Word: An Associated Press Guide to Good News Writing*. New York: The Associated Press, 1982.

Coolidge, Judi, and Carty, Cindy. *The Yearbook Adviser's Guide Book*. Dallas, TX: Taylor Publishing, 1986.

English, Earl, Hach, Clarence, and Rolhicki, Tom. *Scholastic Journalism*. Ames: Iowa State University Press, 1996.

Hall, Homer. *Junior High Journalism*. Glenview, IL: Rosen Press, 1993.

*Journalism Career and Scholarship Guide*. Princeton, NJ: Dow Jones Newspaper Fund, Inc., 1998.

*Journalism Education Association Catalog of Recommended Titles*. Manhattan, KS: Journalism Education Association, 1998.

*Kentucky High School Journalism Association's Adviser's Guide*. Frankfort, KY: Kentucky High School Journalism Association, 1997.

*Law of the Student Press*. Arlington, VA: Student Press Law Center, 1994.

Metzler, Ken. *Creative Interviewing: The Writer's Guide to Gathering Information by Asking Questions*. Englewood Cliffs, NJ: Prentice Hall, 1997.

Reddick, DeWitt. *Journalism Exercise and Resource Book: Aids for Teaching High School Journalism*. Belmont, CA: Wadsworth, 1981.

Savedge, C. E. *Scholastic Yearbook Fundamentals*. New York: Columbia Scholastic Press Association, 1997.

Shushan, Ronnie, Wright, Don, and Lewis, Laura. *Desktop Publishing by Design: Everyone's Guide to Pagemaker 6*. Redmond: Microsoft Press, 1996.

Smith, Helen. *Scholastic Newspaper Fundamentals*. New York: Columbia Scholastic Press Association, 1996.

## High School Journalism Teacher Resources

*Springboard to Journalism*. Edited by Helen F. Smith. New York: Columbia Scholastic Press, 1996.

Strunk, William and White, E. B. *Elements of Style*. New York: Allyn and Bacon, 1995.

Wulfemeyer, K. Tim. *Beginning Broadcast Newswriting: A Self-Instructional Learning Experience*. Ames: Iowa State University Press, 1993.

Wulfemeyer, K. Tim. *Broadcast Newswriting: A Workbook*. Ames: Iowa State University Press, 1983.

Zeigler, Sherilyn K. and Howard, Herbert. *Broadcast Advertising: A Comprehensive Working Textbook*. Ames: Iowa State University Press, 1991.

Zinsser, William. *On Writing Well: The Classic Guide to Writing Nonfiction*. New York: Harper and Row, 1998.

### Publications: Periodicals

#### *C-Jet*

JEA Publications, Kansas State Publications, Manhattan, KS 66506

#### *Taylor Talk*

Taylor Publishing Company, 1550 W. Mockingbird Lane, Dallas, TX 75235

#### *Trends*

University of Minnesota, MN 55455-0478

### Internet Resources

Columbia Student Press Association

<http://www.columbia.edu/cu/cspa/>

Freedom Forum periodical index

<http://www.freedomforum.org/freedomforum/resources/ffindex/welcome.html>

Journalism Education Association

<http://www.jea.org/>

National Scholastic Press Association

<http://studentpress.journ.umn.edu/>

Press law and ethics

<http://www.acnet.bridgew.edu/faculty/fschrock/ed50/cabral/resource.html>

Student journalism after Hazelwood

<http://asne.org/kiosk/editor/julyaugust/goodman.html>

## High School Journalism Teacher Resources

Student Press Law Center

<http://www.splc.org/>

### Videos

*Journalism in the 90s*, Kentucky Educational Television

### Professional Organizations

American Advertising Federation, 1101 Vermont Avenue, NW, Suite 500, Washington, DC 20005-3521, (800) 999-2231

Columbia Scholastic Press Association

Columbia University, Box 11 Central Main Room, New York, NY 10027, (212) 854-9400

Dow Jones Newspaper Fund

P. O. Box 300, Princeton, NJ 08543-0300, (609) 452-2820

Freedom Forum

1101 Wilson Blvd., Arlington, VA 22209 (703) 528-0800

Intercollegiate Broadcasting System

PO Box 592, Vails Gate, New York 12584

Journalism Education Association (JEA)

Kansas State University, Kedzie Hall Room 103, Manhattan, KS 66504, (913) 532-5532

Kentucky High School Journalism Association

101 Consumer Lane, Frankfort, KY 40601, (502) 223-8821

National Scholastic Press Association

2221 University Avenue SE, Suite 121, Minneapolis, MN 55414, (612) 625-8335

Quill and Scoll Society

School of Journalism and Mass Communications, University of Iowa, Iowa City, IA 52242, (319) 335-5795

Southern Interscholastic Press Association

The College of Journalism, University of South Carolina, Columbia, SC 29208, (803) 777-6284

Student Press Law Center

1101 Wilson Blvd., Suite 1910, Arlington, VA 22209-2248, (703) 807-1904

# **Health Education**





# **Required Credits**



## High School Health Education Traditional Model

### Course Overview:

This high school health education course is a 1/2-credit course that is designed to aid students to live more productive and healthier lives. The instructional focus is on physical, emotional, and social wellness. Students receive instruction in sound principles of health education that will enable them to successfully combat physical, emotional, and social problems that confront them. The goal of high school health education is to instill in each student a desire to practice sound principles of healthy living throughout their lives.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### Guiding Questions:

- How will my behavior contribute to positive functioning of groups?
- How will awareness of human growth and development influence my opinion of abstinence?
- How will wise consumer choices benefit me?
- How will good personal health habits contribute to my physical wellness?
- How can my knowledge of first aid and handling emergency procedures help others?
- What decisions do I make and what actions do I take to successfully manage stress and conflict in my life?
- How can I benefit the community through involvement in environmental activities?

**High School Health Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p>	<p>How will my behavior contribute to positive functioning of groups?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze individuals' actions and interactions within groups.</li> </ul>

## High School Health Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• write and perform skits illustrating positive and negative behavior in groups. Draw parallels between group behavior and organizational (e.g., team, club, corporation) success. Record findings in journals.</li><li>• analyze differences between effective and ineffective group interactions. Reflect in journals on personal experience with effective and ineffective group interaction. Use graphic organizers (e.g., Venn diagrams) to compare own and classmates experiences. Based on analysis, write articles for school newspapers about effective interpersonal communications within groups. <i>Use this activity to develop possible writing portfolio entries (WP- Transactive).</i></li><li>• research company policies on communication. Prepare employee brochures suggesting strategies for effective interpersonal communications (<i>WP-Transactive</i>).</li></ul>	

**High School Health Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Individual Well-Being (2.29)</b></p>	<p>How will awareness of human growth and development influence my opinion of abstinence?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explain how the functioning of body systems are interrelated.</li> <li>• explain the process of human growth and development.</li> <li>• identify abstinence as the only sure means of preventing pregnancy and Sexually Transmitted Diseases.</li> </ul>

## High School Health Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate effects of risky behaviors (e.g., drinking or smoking while pregnant) on human growth and development. Prepare and deliver persuasive speeches warning against risky behaviors.</li> <li>• research social, emotional, and physical benefits of abstinence. Create public service announcements encouraging abstinence among unmarried teens.</li> <li>• research economic, social, and political issues related to teen pregnancy. Use information to create educational books for younger students about implications of teen pregnancy.</li> </ul> <p><i>Technology suggestions: Create multimedia presentations to accompany reports. Use closed-circuit TV for public service announcements encouraging abstinence for school and community.</i></p> <ul style="list-style-type: none"> <li>• investigate adolescent growth and development. Create informational brochures explaining physical and emotional changes during puberty (<i>WP- Transactive</i>). Distribute brochures to parents and teachers to facilitate understanding of teenagers.</li> <li>• create advise columns in school newspapers to help peers deal with emotional growth.</li> <li>• investigate structures and functions of organ systems. Compare information in graphic organizers. Create models of each system. Research common diseases of each system and identify successful methods of treatment. Analyze how problems in one system disrupt the functioning of another. Investigate how pregnancy affects all body systems. Create skits or conversations among organs explaining interrelationships among organ systems.</li> </ul>	

## High School Health Education Traditional Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<b>Consumer Decisions (2.30)</b>	<p>How will wise consumer choices benefit me?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop and use strategies for evaluating products and services.</li> <li>• evaluate influences of advertising on consumer choices.</li> <li>• make effective consumer decisions.</li> </ul>



## High School Health Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze advertisement techniques used to sell products. Choose one technique to create commercials advertising school fund-raising products for local TV stations.</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Videotape fund-raising ads.</i></p> <ul style="list-style-type: none"> <li>• select three items. Compare prices in department stores, drug stores, grocery stores, and discount stores. Prepare spreadsheets to assist peers in analysis of costs. Write consumer articles on how to make good choices when buying products (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Create graphs or charts with integrated spreadsheet programs to compare information.</i></p> <ul style="list-style-type: none"> <li>• analyze products advertised as new and improved by comparing new forms of products to old forms. Determine changes in form, packaging, safety, ingredients, or price. Write newspaper reviews comparing new improved products to the old products.</li> </ul>	

## High School Health Education Traditional Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<b>Physical Wellness (2.31)</b>	<p>How will good personal health habits contribute to my physical wellness?</p> <p>How can my knowledge of first aid and handling emergency procedures benefit others?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop sound nutritional practices.</li> <li>• evaluate individual wellness.</li> <li>• analyze risk-taking choices and actions.</li> <li>• explain disease transmission, prevention, and control.</li> <li>• evaluate personal health practices.</li> <li>• describe safety prevention first-aid procedures, and equipment used for common injuries.</li> <li>• explain procedures for handling various emergency situations.</li> </ul>

## High School Health Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine present lifestyle to understand factors (e.g., physical, mental, social) that influence eating habits. Investigate positive eating habits and devise personal plans for diet improvements.</li> <li>• analyze menus from various places (e.g., school cafeteria, restaurants, fast food chains, home) to determine nutritional balance. Based on personal diet plans, determine how different menus fit into their lifestyles.</li> <li>• investigate dangers of fad diets and eating disorders (e.g., anorexia, bulimia). Prepare public service announcements suggesting healthier choices for weight loss.</li> <li>• search Internet for information related to disease transmission, prevention, and control. Develop brochures for school health clinics to use during schoolwide health orientation.</li> <li>• participate in CPR and first aid classes. Create posters for school on proper procedures for performing first aid and CPR.</li> <li>• contact local organizations (e.g., police department, health department, hospital, fire department) to investigate common accidents in their communities. Explore ways to prevent such accidents and develop consumer guides explaining prevention strategies (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><b><i>Technology suggestion:</i></b> Use desktop publishing programs to create consumer guides.</p> <ul style="list-style-type: none"> <li>• organize schoolwide health fair. Include screening stations and informational displays on positive health and safety practices.</li> </ul>	<p>Donnie can draw detailed pictures and verbally explain information he knows, but he has difficulty putting written words together in sentences. Donnie will design two meal schedules using pictures to demonstrate knowledge of appropriate servings from the five food groups. In addition, he will explain the drawings verbally using an audio tape (<i>Types of extensions: resources and materials, demonstration of knowledge, participation</i>).</p> <p>Anne, Nancy, and Larry need opportunities to solve real problems and implement strategies. Their concern with the lack of earthquake emergency procedures in their school prompts the teacher to allow them to research earthquake preparedness plans in other areas via the Internet. They will meet with the principal to prepare rationales for implementing their plan which will be presented to the SBDM council (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, pace, participation, level of support, environment, motivation, demonstration of knowledge, resources and materials, procedures and routines</i>).</p>

**High School Health Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Mental Wellness (2.32)</b></p>	<p>What decisions do I make and what actions do I take to successfully manage stress and conflict in my life?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• determine sources of stress and identify stress related illnesses.</li> <li>• analyze and use stress management strategies.</li> <li>• evaluate conflict resolution and violence prevention strategies.</li> <li>• adopt success-building strategies.</li> <li>• research mental and emotional illnesses.</li> <li>• research substance abuse.</li> <li>• define abuse and determine strategies for prevention.</li> <li>• evaluate health behaviors and attitudes of peers.</li> </ul>

## High School Health Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• interview doctors to determine most common stress related illnesses. Investigate ways people can prevent that stress or manage stress before illness strikes. Create brochures explaining stress management techniques, dealing specifically with certain illnesses. Write articles for school newspaper on stress management techniques for high school students (<i>WP-Transactive</i>).</li> <li>• investigate mental and emotional health-crisis centers to determine criteria for staff. Create student hot lines and crisis centers in their school to help peers in need.</li> <li>• investigate impact of different types of drugs (e.g., depressants, stimulants, narcotics) on the body. Participate in meetings (e.g., Al-Anon, Alcoholics Anonymous) to understand their impact of diseases on people’s lives. Produce flyers identifying services offered by substance abuse and prevention groups.</li> <li>• read first-person accounts of people involved in abusive situations (e.g., date rape, assault). Create lists of avoidance strategies. Produce instructional videos demonstrating strategies.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use closed-circuit TV to show videos.</i></p> <ul style="list-style-type: none"> <li>• design and conduct schoolwide health-behavior surveys. Analyze and use results to create health improvement plans for peers and staff.</li> </ul>	<p>A group of girls with exceptional ability will meet with the gifted and talented specialist or counselors knowledgeable about the unique needs of gifted females to discuss such issues as fear of success, setting realistic goals and standards, strategies for coping with pressures to underachieve and/or set lower career goals and dealing with stress resulting in significantly higher incidence of eating disorders among gifted young women (<i>Types of extensions: purpose and appropriate, resources and materials, participation, level of support, environment</i>).</p>

**High School Health Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Community Services (2.33)</b></p>	<p>How can I benefit the community through involvement in environmental activities?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• describe community resources and services.</li> <li>• analyze community health standards and regulations.</li> <li>• identify ways to protect the environment.</li> </ul>

## High School Health Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate community resources (e.g., library, health department, recreation, parks department) to determine available services. Create brochures for each to distribute at welcome centers or chamber of commerce.</li> </ul> <p><i><b>Technology suggestion:</b> Create community Web sites about community health, safety, and wellness resources.</i></p> <ul style="list-style-type: none"> <li>• analyze existing community health and environmental guidelines. Survey school and community to see if guidelines are being met. Prepare reports for school and community organizations suggesting implementation strategies to meet health and environmental guidelines.</li> <li>• interview community waste management personnel to collect data on local recycling programs. Discuss benefits of these programs. Design and implement schoolwide recycling projects.</li> </ul> <p><i><b>Technology suggestion:</b> Design, produce, and implement multimedia marketing campaigns for recycling and waste management.</i></p>	<p>Diana completes assignments when she is provided with specific goals and motivation contracts. Develop contracts of expectations, step-by-step instructions for the recycling project, and specific reinforcer menu for Diana (<i>Types of extensions: level of support, motivation, procedures and routines</i>).</p>

**High School Health Education  
Traditional Model**

**NOTES**



## **High School Health/Physical Education Wellness Interdisciplinary Model**

### **Course Overview:**

This one-credit course is designed as an interdisciplinary approach to health education. All content from the high school health and physical education *Program of Studies* is included along with content from vocational education. The main focus of this course is the promotion of a healthy lifestyle through proper nutrition, physical activities, and lifestyle choices. The course model for health education includes core content from practical living and vocational studies content chart. Activities and extensions for diverse learners are designed to enhance the understanding of all students about holistic health and the healthcare industry. Upon completion of this course, students will be able to answer the question, “How does my physical, mental, and social well-being influence the lifestyle choices I make each day?”

Models are organized around guiding questions. Guiding questions direct teachers’ choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies* and the wellness content chart. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content or content from elective areas, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How can I continue to stay healthy?
  
- How can I develop healthy relationships?
  
- What do I need to know and be able to do to remain physically healthy and accept responsibility for my own physical well-being?
  
- What strategies can I use to become and remain mentally and emotionally healthy?
  
- How can my involvement in organized social and recreational activities influence my physical, mental, and emotional health?
  
- How can I evaluate and use services and resources available in my community?
  
- What guidelines and influences can I use to evaluate consumer products and services and make effective decisions?

**High School Health/Physical Education  
Wellness Interdisciplinary Model**

**NOTES**

**High School Health/Physical Education  
Wellness Interdisciplinary Model**

<b>Academic Expectations</b>	<b>Content/Process</b>
<b>Health and Physical Education (2.29 - 2.35)</b>	<b>Students will</b> <ul style="list-style-type: none"><li>• describe components of holistic health.</li><li>• examine economic, social, cultural, and religious influences on wellness.</li><li>• debate issues relating to death and dying.</li><li>• utilize activities of the Health Occupations Students of America (HOSA) student organization as an integral component of course content and leadership development.</li><li>• apply mathematics, science, and communication skills to technical content.</li></ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p><b>Individual Well-Being (2.29)</b></p> <p><b>Physical Wellness (2.31)</b></p> <p><b>Lifetime Activity (2.35)</b></p>	<p>How can I continue to stay healthy?</p> <p>How can I develop healthy relationships?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• analyze individual actions and interactions within groups.</li> <li>• explain how the functioning of body systems are interrelated.</li> <li>• explain the process of human growth and development.</li> <li>• identify abstinence as the only sure means of preventing pregnancy and sexually transmitted diseases.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>• describe how benefits of exercise are interrelated.</li> <li>• establish, develop, and implement a lifetime personal fitness and activity plan.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• describe components of holistic health.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul> <p style="text-align: right;"><i>(Continued on page 24)</i></p>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate factors (e.g., heredity, family structure, peers, media) that influence personal behaviors. Distinguish between positive and negative behaviors. Develop and complete individual and group behavior inventories. Evaluate and use results to improve performance within individual and group settings. Write dialogues analyzing behaviors over a three-month period.</li> <li>examine important relationships (e.g., peers, family, church, work, recreational). Examine roles, including strengths and weaknesses of group members. Discuss rights and responsibilities of each member and impact of individuals on groups. Identify needed adjustments to improve relationships. Role-play suggested interactions.</li> </ul> <p><i>Technology suggestion: Use camcorders to videotape presentations.</i></p> <ul style="list-style-type: none"> <li>research effective interpersonal communication skills in group relationships. Observe diversified age and gender groups in local communities (e.g., workplaces, schools, geriatric facilities). Record and discuss behaviors of group members. Discuss factors that facilitate communication and factors that are barriers. Role-play communications breakdowns and conflict resolutions. Prepare informational brochures for peers that illustrate effective communication skills. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i> Share videos and brochures with parent-teacher organizations, school councils, and local social intervention agencies.</li> </ul> <p><i>Technology suggestions: Use desktop publishing software to create brochures. Use camcorders to film role-playing situations.</i></p> <ul style="list-style-type: none"> <li>determine typical physical growth patterns. Investigate how behavior impacts growth and wellness. Compare physical growth to other areas of growth (e.g., chronological, intellectual, emotional, social, philosophical). Write personal, reflective essays on ways different individual growth patterns have been impacted by health and wellness (WP - Transactive).</li> </ul>	<p>Students with difficulty understanding or mastering complex words or directions may have picture cards for new vocabulary (e.g., appropriate interrelationship in picture form) and directions limited to no more than five steps. Students are given longer completion times (<i>Types of extensions: resources and materials, complexity</i>).</p> <p>Lela and Peter have been deaf since birth. They communicate through the use of American Sign Language and an interpreter. Their vocabulary, language development and use of language are below age peers. Using concept maps and caption videos that represent some of the concepts of the unit, the teacher reviews words that she anticipates will be used in group discussions and brainstorming activities (e.g., compromise, pros and cons, conflict resolution, priority, goal setting). As they brainstorm and discuss, Lela and Peter sign their contributions as the interpreter voices their ideas. Each group is to turn in notes of its discussion. Copies are made for Lela and Peter to match written language with oral language (<i>Types of extensions: order of learning, routines and procedures, level of support, participation, purpose and appropriateness</i>).</p>

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p> <p style="text-align: center;"><b>Physical Wellness (2.31)</b></p> <p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p>	<p><i>(Continued from page 22)</i></p> <p>How can I continue to stay healthy?</p> <p>How can I develop healthy relationships?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• analyze individual actions and interactions within groups.</li> <li>• explain how the functioning of body systems are interrelated.</li> <li>• explain the process of human growth and development.</li> <li>• identify abstinence as the only sure means of preventing pregnancy and sexually transmitted diseases.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>• describe how benefits of exercise are interrelated.</li> <li>• establish, develop, and implement a lifetime personal fitness and activity plan.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• describe the components of holistic health.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research life expectancy in Kentucky and U.S. Survey local communities to determine average life expectancy. Compare findings and discuss reasons for likenesses and differences. Design plans and conduct surveys to determine factors (e.g., behaviors, heredity) that contribute to longevity. Discuss quantity versus quality of life. Create histograms comparing data from all fifty states. Disaggregate data to show differences among ethnic groups.</li> <li>• investigate factors that contribute to enjoyment of daily activities by older adults. Investigate factors that contribute to long-term enjoyment and active involvement. Investigate interests and activities and record age of first participation. Interview persons enjoying longevity and active involvement. Volunteer at local long-term care facilities. Interview adults about strategies they use for coping with health problems. Write articles on ways to increase enjoyment of activities as one ages.</li> <li>• examine sensory losses that contribute to difficulty in normal functioning. Design and simulate experiments (e.g., glasses with petroleum jelly, cotton in ears, heavy gloves) to experience sensory losses. Write plans to assist persons with sensory losses (<i>WP - Transactive</i>).</li> <li>• investigate role self-esteem plays in individual health and well-being. Design experiments to collect and analyze self-evaluations by peers. Discuss importance of self-esteem in healthy behaviors (e.g., cleanliness, rest, self-image, exercise, sexual behaviors).</li> <li>• investigate structures and functions of organ systems. Compare information in graphic organizers. Create models of each system. Research common diseases of each system and identify successful methods of treatment. Analyze how problems in one system disrupt the functioning of another. Create skits or dialogues depicting interrelationships among organ systems.</li> <li>• research social, emotional, and physical benefits of abstinence. Create public service announcements encouraging abstinence among unmarried teens.</li> <li>• research economic, social, and political issues related to teen pregnancy. Use information to create educational books for younger students about the implications of teen pregnancy.</li> </ul>	

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p> <p style="text-align: center;"><b>Physical Wellness (2.31)</b></p> <p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p>	<p>What do I need to know and be able to do to remain physically healthy and accept responsibility for my own physical well-being?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• develop sound nutritional practices.</li> <li>• evaluate individual wellness.</li> <li>• describe safety prevention, first-aid procedures, and equipment used for common injuries.</li> <li>• explain procedures for handling various emergency situations.</li> <li>• analyze risk-taking choices and actions.</li> <li>• explain disease transmission, prevention, and control.</li> <li>• evaluate personal health practices.</li> <li>• identify abstinence as the only sure means of preventing pregnancy and sexually transmitted diseases.</li> <li>• describe community resources and services.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>• describe how benefits of exercise are interrelated.</li> <li>• apply principles of exercise.</li> <li>• apply nutritional concepts in meal planning.</li> <li>• describe benefits of regular participation in physical activities.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• describe components of holistic health.</li> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• utilize activities of the Health Occupations Students of America (HOSA) student organization as an integral component of course content and leadership development.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul> <p style="text-align: right;"><i>(Continued on page 28)</i></p>



## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop instruments to evaluate lifestyle practices including regular exercise. Develop personal plans to adhere to sound physical fitness programs.</li> <li>• research impact of peer pressure on behavioral choices (e.g., dieting, drug use, alcohol use). Create and perform skits depicting peer pressure on lifestyle choices.</li> <li>• investigate role nutrition plays in individual health and wellness. Interview nutritionists about importance of reading food labels and pros and cons of various diets. Use information to prepare public service announcements.</li> </ul> <p><i>Technology suggestion: Use camcorders to videotape public service announcements.</i></p> <ul style="list-style-type: none"> <li>• research impact of physical activity on individual health and wellness. Interview school athletes and fitness center directors about relationship of exercise to health. Graph, analyze, and present findings at faculty meetings to encourage participation in fitness activities.</li> </ul> <p><i>Technology suggestion: Use integrated software packages or graphing software to create databases and graphs.</i></p> <ul style="list-style-type: none"> <li>• investigate emergency plans and strategies for disaster situations. Simulate mock disaster drills with cooperation of local Emergency Management Service (EMS) Team. Develop scoring guides for participants and rescuers. Review results and implement improvement strategies.</li> <li>• research school-safety measures. Investigate number, type and frequency of accidents in schools. Identify causes and discuss ways to reduce number of accidents. Present plans to school councils and student leadership groups.</li> <li>• investigate first-aid items needed in all kits for school and work sites. Research cost and identify areas that need kits. Purchase items, assemble kits, and distribute to schools, libraries, supermarkets, and recreational areas.</li> </ul>	<p>Students in the gifted and talented program will have the opportunity to shadow healthcare professionals. <i>(Types of extensions: purpose and appropriateness, motivation).</i></p> <p>Marshall is a paraplegic due to a driving accident at age 10. He uses a motorized wheelchair. In order to build his upper body strength and to decrease the possibility of atrophy, Marshall will develop a fitness survey and collect information regarding upper body conditioning. He will work with a non-disabled partner to develop the survey and a report that is inclusive of other physical needs of individuals with disabilities. In order to visit a fitness center, he uses his special transportation which includes a lift <i>(Types of extensions: purpose and appropriateness, resources and materials, motivation).</i></p> <p>Students who work better in small groups or require reinforcement may do so. Rules for group conduct and expectations should be posted <i>(Types of extensions: motivation, procedures and routines).</i></p>

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p> <p style="text-align: center;"><b>Physical Wellness (2.31)</b></p> <p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p>	<p><i>(Continued from page 26)</i></p> <p>What do I need to know and be able to do to remain physically healthy and accept responsibility for my own physical well-being?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• develop sound nutritional practices.</li> <li>• evaluate individual wellness.</li> <li>• describe safety prevention, first-aid procedures, and equipment used for common injuries.</li> <li>• explain procedures for handling various emergency situations.</li> <li>• analyze risk-taking choices and actions.</li> <li>• explain disease transmission, prevention, and control.</li> <li>• evaluate personal health practices.</li> <li>• describe community resources and services.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>• describe how benefits of exercise are interrelated.</li> <li>• establish, develop, and implement a lifetime personal fitness and activity plan.</li> <li>• describe benefits of regular participation in physical activities.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• describe components of holistic health.</li> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• utilize activities of the Health Occupations Students of America (HOSA) student organization as an integral component of course content and leadership development.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare local, state, and national statistics on communicable diseases. Create histograms comparing data from all fifty states.</li> <li>• research common diseases caused by microorganisms. Discuss and implement strategies to reduce spread of diseases. Produce infomercials to share findings.</li> </ul> <p><i>Technology suggestion: Use camcorders to videotape commercials or CD-ROMs, laser disks, video, and audio, and digital cameras to create multimedia presentations.</i></p> <ul style="list-style-type: none"> <li>• collect and culture bacteria from various locations in school buildings. Prepare presentations for all health classes explaining how cultures were grown.</li> <li>• design and conduct experiments to test effectiveness of germ fighting hand soaps. Make recommendations to school-based councils and parent-teacher groups on using most effective germ-fighting hand soaps in local schools.</li> <li>• research educational materials and programs (e.g., American Heart Association, American Diabetes Association, American Cancer Society) that promote wellness and prevention. Compare programs and write articles for local newspapers on available materials and programs (<i>WP - Transactive</i>).</li> </ul>	<p>Students will be placed in multi-ability groups for activities (e.g., reading groups for students unable to read at the appropriate reading level) to allow all students to be successful (<i>Type of extensions: appropriateness and purpose, complexity, motivation</i>).</p>

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being</b> (2.29)</p> <p style="text-align: center;"><b>Physical Wellness</b> (2.31)</p> <p style="text-align: center;"><b>Lifetime Activity</b> (2.35)</p>	<p>What strategies can I use to become and remain mentally and emotionally healthy?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• determine sources of stress and identify stress related illnesses.</li> <li>• analyze and use stress management strategies.</li> <li>• evaluate conflict resolution and violence prevention strategies.</li> <li>• adopt success-building strategies.</li> <li>• research mental and emotional illnesses.</li> <li>• research substance abuse.</li> <li>• define abuse and determine strategies for prevention.</li> <li>• evaluate health behaviors and attitudes of peers.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• debate issues relating to death and dying.</li> <li>• describe components of holistic health.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul> <p style="text-align: right;"><i>(Continued on page 32)</i></p>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate stress and impact of stress on different individuals. Use results to create lists of recommended stress reduction strategies. Research biofeedback techniques of stress management. Compare to traditional methods. Design questionnaires to survey causes of stress among various groups (e.g., young, old, male, female). Examine current events articles related to stress and stress management. Prepare lists of stress-reducing activities. Compile class recommendations in brochures and distribute to students and teachers.</li> <li>• research abusive behaviors (e.g., fighting, drug, alcohol use). Compare assertive and aggressive behaviors. Create skits depicting conflict-resolution strategies.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use camcorders to videotape skits.</i></p> <ul style="list-style-type: none"> <li>• research successful personal and business strategies. Interview successful community members. Share findings in steps-to-success brochures.</li> <li>• research various cultural and religious groups and their beliefs concerning death and dying. Interview medical examiners, hospital chaplains, hospice volunteers, and funeral directors. Investigate techniques used to lessen impact of grief. Discuss grieving techniques that assist in good mental health maintenance. Prepare charts depicting how different groups deal with end of life.</li> <li>• investigate local, state, and national programs to assist persons with mental and emotional disorders. Create brochures for Youth Services Centers that summarize information.</li> </ul>	

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p> <p style="text-align: center;"><b>Physical Wellness (2.31)</b></p> <p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p>	<p><i>(Continued from page 11)</i></p> <p>What strategies can I use to become and remain mentally and emotionally healthy?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• determine sources of stress and identify stress related illnesses.</li> <li>• analyze and use stress management strategies.</li> <li>• evaluate conflict resolution and violence prevention strategies.</li> <li>• adopt success-building strategies.</li> <li>• research mental and emotional illnesses.</li> <li>• research substance abuse.</li> <li>• define abuse and determine strategies for prevention.</li> <li>• evaluate health behaviors and attitudes of peers.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• describe components of holistic health.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research substance abuse programs. Interview alcoholics anonymous participants and halfway house members to discuss recovery programs. Collect data on average time for recovery and factors that affect recovery. Investigate peer pressure in relation to substance abuse. Interview psychologists about addictive behaviors. Create dialogues among friends on substance abuse and effects of negative peer pressure. Role-play methods of dealing with peer pressure. Write books for adolescents on dangers of substance abuse (<i>WP - Transactive</i>). Design public service announcements that include addiction-avoidance strategies.</li> </ul> <p><i>Technology suggestions: Use integrated packages or desktop publishing to create books. Use camcorders to videotape role-playing situations and public service announcements.</i></p>	

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p> <p style="text-align: center;"><b>Physical Wellness (2.31)</b></p> <p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p> <p style="text-align: center;"><b>Psychomotor Development (2.34)</b></p>	<p>How can my involvement in organized social and recreational activities influence my physical, mental, and emotional health?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• analyze individual actions and interactions within groups.</li> <li>• explain how the functioning of body systems are interrelated.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>• describe how benefits of exercise are interrelated.</li> <li>• establish, develop , and implement a lifetime personal fitness and activity plan.</li> <li>• apply movement concepts in various games, sports, and rhythmic activities.</li> <li>• refine techniques to achieve consistency in performance of fundamental skills in games and activities.</li> <li>• demonstrate sportsmanship applicable to participants and spectators.</li> <li>• demonstrate principles of motor skill refinement.</li> <li>• analyze specialized movement sequences and patterns to make recommendations for improvement.</li> <li>• develop specialized motor skills for participation in rhythmic movement; individual, dual, and team games and activities.</li> <li>• analyze object manipulation to make recommendations for improvements.</li> <li>• describe benefits of regular participation in physical activities.</li> <li>• apply strategies for successful participation in lifetime activities and sports.</li> <li>• refine techniques in lifetime activities and sports to enhance performance.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• describe components of holistic health.</li> </ul> <p style="text-align: right;"><i>(Continued on page 36)</i></p>



## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• participate in team and individual sports and activities (e.g., volleyball, softball, basketball, throwing, catching, tennis, badminton, golf) demonstrating correct movement techniques and adherence to rules of play. Analyze movement via videotapes to help improve performance. Work with partners to perfect techniques (e.g., golf swing, catching, throwing).</li> <li>• use elements of dance (e.g., space, time, force, levels, pathways) to develop creative movement sequence. Participate in rhythmic activities and dance demonstrating movement concepts, sequences, and patterns.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use camcorders to develop videotapes to critique peer movement.</i></p> <ul style="list-style-type: none"> <li>• use Internet to research biomechanics of movement. Identify major muscle groups used. Record use of muscles through classroom movements and activities. Observe muscles used in different activities (e.g., walking, running, golfing, dancing). Choose the use of one muscle to illustrate in posters.</li> <li>• develop dance sequences in pairs and groups, using three culturally different types of music. Demonstrate for class.</li> <li>• investigate what is meant by good sportsmanship. Use graphic organizers to compare sports heroes' actions. Include those that are considered to be examples of good and poor sportsmanship. Create posters on the do's and don'ts of good sportsmanship. Write sports opinion columns for school newspapers (<i>WP-Transactive</i>). Role-play acceptable sportsmanship behaviors of different sports.</li> <li>• plan and implement activity day where teachers and students compete.</li> <li>• examine community activity careers (e.g., YMCA). Prepare consumer guides explaining benefits of these centers and resources they provide. Write letters to community leaders persuading them to fund more centers (<i>WP-Transactive</i>).</li> <li>• develop and plan community activities (e.g., bowl-a-thon, marathon). Research location, cost, volunteer resources, and safety. Plan for involvement of all age groups. Produce written proposals containing all pertinent information and present to local government for approval</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use multimedia resources to make presentations.</i></p>	

**High School Health/Physical Education  
Wellness Interdisciplinary Model**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p align="center"><b>Individual Well-Being (2.29)</b></p> <p align="center"><b>Physical Wellness (2.31)</b></p> <p align="center"><b>Lifetime Activity (2.35)</b></p> <p align="center"><b>Psychomotor Development (2.34)</b></p>	<p><i>(Continued from page 34)</i></p> <p>How can my involvement in organized social and recreational activities influence my physical, mental, and emotional health?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• analyze individual actions and interactions within groups.</li> <li>• explain how the functioning of body systems are interrelated.</li> </ul> <p><b>Physical Education</b></p> <ul style="list-style-type: none"> <li>• describe how benefits of exercise are interrelated.</li> <li>• establish, develop , and implement a lifetime personal fitness and activity plan.</li> <li>• apply movement concepts in various games, sports, and rhythmic activities.</li> <li>• refine techniques to achieve consistency in performance of fundamental skills in games and activities.</li> <li>• demonstrate sportsmanship applicable to participants and spectators.</li> <li>• demonstrate principles of motor skill refinement.</li> <li>• analyze specialized movement sequences and patterns to make recommendations for improvement.</li> <li>• develop specialized motor skills for participation in rhythmic movement; individual, dual, and team games, and activities.</li> <li>• analyze object manipulation to make recommendations for improvements.</li> <li>• describe benefits of regular participation in physical activities.</li> <li>• apply strategies for successful participation in lifetime activities and sports.</li> <li>• refine techniques in lifetime activities and sports to enhance performance.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• describe components of holistic health.</li> </ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine studies comparing health of persons who regularly engage in sports related activities to those who live sedentary lifestyles. Compare medical expenditures of classmates who participate in physical activities (e.g., ball, dance, golf, swimming) to nonactive individuals. Debate benefits of physical activity. Create presentations for classmates convincing them to participate in sports.</li><li>• investigate community recreational opportunities (e.g., baseball, golf, swimming, square dancing). Design and conduct surveys to determine community participation (e.g., frequency, age level). Design brochures to explain benefits of participation in recreational activities.</li><li>• compare training programs of amateur sports figures to those of professional sports figures. Interview professionals to discover how they became successful. Create how-to booklets or articles for amateurs.</li></ul> <p><i>Technology suggestion: Use camcorders to videotape presentations.</i></p>	

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p style="text-align: center;"><b>Individual Well-Being (2.29)</b></p> <p style="text-align: center;"><b>Physical Wellness (2.31)</b></p> <p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p>	<p>How can I evaluate and use services and resources available in my community?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• describe community resources and services.</li> <li>• analyze community health standards and regulations.</li> <li>• identify ways to protect the environment.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>compare public and private healthcare facilities, including an analysis of level of care, cost, and services provided. Interview leaders of communities using public and private healthcare services. Determine if needs are met by existing services and facilities. Investigate public healthcare facility guidelines. Create charts outlining standards and regulations for each health care cluster. Develop multimedia presentations for healthcare administrators.</li> </ul> <p><i>Technology suggestion: Use camcorders to videotape commercials or CD-ROMs, laser disks, video, and audio, and digital cameras to create multimedia presentations.</i></p> <ul style="list-style-type: none"> <li>research and develop directories of local and state health care agencies and resources. Work with Youth Service Centers to distribute information to parents. Collaborate with businesses to create presentations of community resources. Share with local magistrates and chamber of commerce or tourism commissions.</li> <li>investigate local water and sewage treatment plants. Write articles explaining potential health issues related to unsafe water supplies (<i>WP - Transactive</i>).</li> <li>develop questionnaires concerning volunteerism rates among peers. Write volunteer agencies requesting information about services and guidelines for volunteers. Interview recipients of volunteer help. Write articles for school newspapers encouraging peers to volunteer their services to those in need (<i>WP - Transactive</i>).</li> </ul>	<p>Nathan's transition goals include volunteering after he leaves high school. He recognizes functional words in his environment. He will need supportive assistance for daily activities as an adult. Working with a non-disabled peer, he chooses two volunteer agencies based on his interests (e.g., Humane Society and local hospital). They visit the agencies to observe possible roles that he can perform as a volunteer and take pictures. With assistance from his peer, he prepares a bulletin board. As a part of high school program, he begins volunteering two hours per week (<i>Types of extensions: purpose and appropriateness, complexity, size, environment, level of support, demonstration of knowledge, participation, motivation</i>).</p>

## High School Health/Physical Education Wellness Interdisciplinary Model

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Wellness Content Chart
<p><b>Individual Well-Being (2.29)</b></p> <p><b>Physical Wellness (2.31)</b></p> <p><b>Lifetime Activity (2.35)</b></p>	<p>What guidelines and influences can I use to evaluate consumer products and services and make effective conscious decisions?</p>	<p><b>Students will</b></p> <p><b>Health Education</b></p> <ul style="list-style-type: none"> <li>• develop and use strategies for evaluating products and services.</li> <li>• evaluate influences of advertising on consumer choices.</li> <li>• make effective consumer decisions.</li> <li>• apply nutritional concepts in meal planning.</li> </ul> <p><b>Wellness Content Chart</b></p> <ul style="list-style-type: none"> <li>• examine economic, social, cultural, and religious influences on wellness.</li> <li>• describe components of holistic health.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>

## High School Health/Physical Education Wellness Interdisciplinary Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate factors affecting consumer decision making. Survey peers to determine highest priority (e.g., cost, packaging, quantity, quality, advertising) when selecting products or services for personal use. Graph and analyze findings. Write articles for consumer newsletters explaining purchasing decisions of youth (<i>WP -Transactive</i>).</li> <li>• investigate behaviors that represent conflicting values (e.g., convenience of automobiles and importance of clean air). Develop plans to lessen impact of identified conflicts.</li> <li>• analyze nutritional information on food labeling. Collect food product labels. Create spreadsheets to organize data. Analyze and discuss percentages of different nutrients in food items. Develop balanced, low-fat diets and publish in brochures. Distribute at local supermarkets (<i>WP-Transactive</i>).</li> <li>• investigate advertising techniques. Collect, compare and analyze various newspaper, magazine, and TV advertisements. Create bulletin boards contrasting positive and negative advertisements. Plan weekend camping trips, create budgets, and apply decision-making process to purchase necessary items. Discuss choices and evaluate decisions.</li> </ul>	<p>Jason is a diabetic with numerous food allergies. He collects and analyzes product labels paying particular attention to the nutritional content and ingredients while comparing to his personal health needs. His brochure focuses on special considerations for individuals like himself. He shares his findings with the local health department's nutritionists and creates a Web site for adolescents with similar health issues and makes it available through the school's Web site (<i>Types of extensions: purpose and appropriateness, complexity, size, demonstration of knowledge, motivation, resources and materials, participation</i>).</p>

## Health Education Glossary

Acquired Immune Deficiency Syndrome (AIDS): The most deadly of the sexually transmitted diseases.

Addiction: Physical dependence; a condition in which the body becomes adjusted to a drug and requires the drug to function normally.

Adolescence: The period from about age 12 to 19 during which a child changes gradually into an adult.

Aggressive: Acting in a forceful, threatening, or disrespectful manner.

Alcoholism: An incurable disease in which a person becomes physically and psychologically dependent on the substance of alcohol.

Alzheimer's Disease: A type of dementia marked by forgetfulness, mental confusion, and helplessness.

Amphetamines: Synthetic stimulants that are available only by prescription.

Anabolic Steroid: A drug used to boost muscle size and raise tolerance to pain.

Anaerobic exercise: Intense physical activity lasting only a few seconds to a few minutes.

Antibiotics: Substances that are able to inhibit or kill bacteria.

Assault: An unlawful attempt or threat to harm someone.

Assertive: Able to stand up for yourself and to express your feelings in a way that does not threaten other people or make you anxious.

Biodegradable wastes: Wastes that can be broken down in the environment.

Blood Alcohol Concentration (BAC): A way to express the amount of alcohol in a person's body.

Blood pressure: The force of blood against the walls of arteries and veins.

Bulimia: An eating disorder in which a person goes on eating binges followed by purging, or getting rid of food.

Cardiopulmonary Resuscitation (CPR): A combination of chest compression and rescue breathing used to maintain the flow of oxygen-rich blood to the brain while the heart is not working.

Central Nervous System (CNS): The brain and the spinal cord.



## Health Education Glossary

Chancre: A small, painless sore that appears in the first stage of syphilis.

Chlamydia: A common sexually transmitted disease, which, if untreated, can cause serious, painful infections of the urinary tract in men and infections of the reproductive organs in women.

Cholesterol: A waxy, fat-like substance found in the cells of all animals.

Chromosomes: Tiny structures, found in almost every cell, that carry information about inherited characteristics.

Compensation: Making up for weakness in one area by excelling in another area.

Consumer: Anyone who buys goods and services.

Controlled substance: A drug that is limited by law because its use can cause dependence.

Defense Mechanisms: Coping strategies; ways people defend themselves against negative emotions.

Dependence: A state in which a person becomes incapable of controlling drug use.

Depressants: Drugs used to slow down the body's functions.

Dosage: The proper amount of a drug.

Endocrine glands: Organs that release chemicals directly into the bloodstream.

Extended Family: A network of close relatives that might include aunts, cousins, and grandparents.

Fertilization: Conception; the joining of a sperm cell with an egg cell.

First Aid: The immediate care given in an accident or sudden illness before professional medical help arrives.

First-degree burn: Surface burns in which the outer layer of the skin is reddened and painful.

Flexibility: The ability to use a muscle throughout its entire range of motion.

Foster Parents: Parents who take care of children when biological parents are unable to do so.

Fracture: A break or crack in a bone.

Goal: A result you want to achieve.

## Health Education Glossary

**Health Maintenance Organization (HMO):** A group of doctors and allied health workers who provide complete medical services to individuals who are members of the HMO.

**Heimlich maneuver:** A technique that uses abdominal thrusts to dislodge an object blocking a person's airway.

**High blood pressure:** Hypertension; a condition in which there is higher than normal pressure on the walls of the blood vessels.

**Isokinetic exercise:** Exercise that makes use of weight-training machines to move muscles at a constant rate of speed throughout their full range of movement.

**Isometric exercise:** Exercise in which a muscle contracts but does not shorten. This type of exercise increases strength but only at the joint angle at which the exercise is performed.

**Isotonic exercise:** The contraction and relaxation of muscles through their full range of motion. This type of exercise develops muscle strength.

**Life style:** The way you choose to live your life.

**Metabolism:** The chemical reactions that change a substance, such as food, so that it can be used or removed from the body.

**Muscular endurance:** The ability of a muscle or a group of muscles to apply force over a period of time.

**Muscular strength:** The ability of a muscle to exert or to resist a force.

**Natural food:** A food that contains no additives.

**Peer pressure:** The need to conform to the expectations of friends and classmates.

**Physical examination:** A head-to-toe check of the body to identify medical problems.

**Physical fitness:** The ability of the heart, blood vessels, lungs, and muscles to work together to meet the body's needs.

**Pituitary gland:** The "master gland"; a small gland at the base of the brain that controls other endocrine glands and many activities, including growth, cellular metabolism, and reproduction.

**Plyometric:** Those activities that produce an overload of isometric type of muscle action which invokes the stretch reflex in muscles.

**Primary-care physician:** The doctor who takes care of most of your routine medical needs.

## Health Education Glossary

Risk behavior: Behavior that increases chances of a harmful outcome.

Self-concept: The physical and mental picture you have of yourself.

Self-esteem: How much one likes oneself and feels good about oneself.

Sexual abstinence: Not having any kind of sexual contact with another person.

Sexually Transmitted Diseases (STDs): Venereal diseases; a group of diseases usually spread through sexual contact.

Shock: A condition in which an individual's circulation and breathing progressively slow down.

Sphygmomanometer: Instrument used to measure blood pressure.

Stress: A reaction of the body and mind to the demands of everyday life.

Stroke: A clot in a blood vessel in the brain that disrupts blood flow to the brain.

Tolerance: Resistance to a drug.

Unit Price: The cost per ounce of a product.

Values: Beliefs that are important to people and help them to clarify what they believe is right or wrong.

Viruses: Microscopic germs that cause disease; the simplest type of parasite.

Vital statistics: The number of births and deaths in a community.

Vitamins: Nutrients that assist many of the chemical reactions in the body.

Wellness: A concept of health that includes physical health, mental health, and social health.

## Health Education Teacher Resources

### Publications: Periodicals

*Consumer Report*

101 Truman Avenue, Yonkers, NY 10703-1057

*International Journal of Sport Nutrition*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Aging and Physical Activity*

Human Kinetics Publishers, Inc., Box 5076, Champaign I, 61825-5076

*Journal of Health Education*

10100 Association Drive, Reston, VA 22091

*Medicine and Science in Sports and Exercise*

American College of Sports Medicine, Box 1440, Indianapolis, IN 46206-1440

*New England Journal of Medicine*

Massachusetts Medical Society Publishers Division, 10 Shattuck Street, Boston, MA 02115

### Professional Organizations

AA, Al-Anon, Alateen World Services

Grand Central Station, Box 459

New York, NY 10017

American Cancer Society

261 Madison Avenue

New York, NY 10016

American Institute of Nutrition

9650 Wisconsin Avenue

Washington, DC 20014

American Institute on Family Relations

5287 Sunset Boulevard

Los Angeles, CA 90027

American Lung Association

1740 Broadway

New York, NY 10019

American Medical Association

535 North Dearborn Street

Chicago, IL 60610

## Health Education Teacher Resources

American Optometric Association  
243 North Lindbergh  
St. Louis, MO 63141

American Physical Fitness Research Institute  
824 Moraga Drive  
Los Angeles, CA 90049

Asthma and Allergy Foundation of America  
801 Second Avenue  
New York, NY 10017

Channing L. Bete Co.  
200 State Road  
South Deerfield, MA 01373

ERIC—Clearinghouse on Teacher Education—Health Education  
One Dupont Circle, N. W.  
Washington, DC 20036

Narcotics Education, Inc.  
P.O. Box 4390  
Washington DC 20012

National Association for Girls and Women in Sports  
1900 Association Drive  
Reston, VA 20191-1598  
(800) 213-7193 extension 1598  
Fax: (703) 476-9527  
E-mail: nagws@aahperd.org

National Association for Mental Health  
1790 Broadway  
New York, NY 10010

National Clearinghouse for Mental Health Information  
5600 Fishers Lane  
Rockville, MD 20857

National Dairy Council  
6300 North River Road  
Rosemont, IL 60018

National Institute of Allergy and Infectious Diseases, Information Office  
Room 7A-32, Building 31  
Bethesda, MD 20014

## Health Education Teacher Resources

National Safety Council  
425 North Michigan Avenue  
Chicago, IL 60611

For additional resources, see the Kentucky Department of Education's Web Site at [www.kde.state.ky.us](http://www.kde.state.ky.us) and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12*.

# **Mathematics**





# **Required Credits**



## High School Mathematics Models

Numerous models can be developed that incorporate the content outlined in the *Program of Studies* to meet the new mathematics graduation requirements. In an effort to clarify the task of meeting the three graduation requirements for mathematics, the following examples have been suggested as possible models that can be used to meet the mathematics requirements.

### Suggested Models:

Model I: Algebra I Geometry Sample Third Course

\*Model II: Preparatory Algebra (Prealgebra) Algebra I Geometry

**\*This model satisfies the mathematics graduation requirement but does not address all mathematics topics outlined in *Core Content for Assessment* or academic expectations.**

Model III: Integrated Math I, II, and III (Algebra I, geometry, and sample third course)

### Overview of Models :

Model I organizes mathematical concepts into a discipline-based sequence beginning with Algebra I. The remaining courses, geometry and the elective/sample third course, may be taken in any order. Instructional techniques used in these courses include the use of manipulatives, technology, and real-world connections.

Model II organizes the mathematical concepts into a discipline-based sequence beginning with preparatory algebra (prealgebra). **The remaining courses Algebra I and geometry are the two required courses for graduation. This model satisfies the mathematics graduation requirements but does not address all mathematics topics outlined in *Core Content for Assessment* or academic expectations.** Instructional techniques used in these courses include the use of manipulatives, technology, and real-world connections.

Model III combines related algebraic, geometric, and numerical concepts into an integrated three-credit model. This model satisfies the mathematics graduation requirements and address all mathematics topics outlined in *Core Content for Assessment* and academic expectations. Algebra I, geometry, and sample third course content bullets and guiding questions are reorganized and distributed throughout Integrated Mathematics I, II, and III courses.

## High School Mathematics Preparatory Algebra

### Course Overview:

The preparatory algebra (prealgebra) course is a transition course that extends concepts of middle level mathematics and enters the domain of high school algebra and geometry. New concepts that are introduced include negative exponents, scientific notation, intercepts, geometric constructions, indirect measurement, nonlinear relationships, and probability.

Students continue to connect mathematical concepts, skills, and relationships of number and computation, geometry and measurement, probability and statistics, with algebraic thinking. They solve problems using algebraic and numerical and graphical representations. While learning preparatory algebra, students are actively engaged, using hands-on materials (e.g., algebra tiles) and appropriate technologies (e.g., fraction calculators, computers, spreadsheets, laser discs, videos).

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions may be included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

Italicized questions are from the eighth-grade mathematics model and may be reviewed in preparatory algebra. The topics represented by the non-italicized questions support the new concepts students learn in preparatory algebra.

### Number and Computation

#### Guiding and Essential Questions:

**What do you understand about numbers? What do you understand about operations on numbers? How reasonable are your answers in problem situations?**

- *How and when do you use rational numbers, irrational numbers, percents, proportions, properties of operations, and integers in consumer applications?*
- *How do you relate addition with subtraction, multiplication with division, and raising to an exponent with taking the root of a number?*
- How do you use scientific notation to represent very large and very small numbers?
- How do you perform operations on real numbers?

**High School Mathematics**  
**Preparatory Algebra**  
**Geometry and Measurement**

**Guiding and Essential Questions:**

**How do you interpret the world in a spatial sense? How do you analyze shapes in your world?  
How do you measure attributes of objects in your world?**

- *Why do you use the Pythagorean theorem?*
  
- *How are measures and characteristics of three-dimensional shapes alike and different?*
  
- *How can you use proportions to show relationships among models, figures on a coordinate grid, and/or similar and congruent figures?*
  
- *How do you derive and use a formula?*
  
- *What techniques can you use to find the number of shortest paths through a network?*
  
- *How do you use tools to do basic geometric constructions?*
  
- *Why and how do you use indirect measurement?*

**Probability and Statistics**

**Guiding and Essential Questions:**

**How do you ask questions about your world? How do you collect, organize, and interpret data about your questions, and how do you communicate information and made predictions relative to your data?**

- *How do you decide which graph (e.g., circle graphs, scatter plots, box and whisker plots, histograms) to use to display your data?*
  
- *How can you determine if a probability event is independent of other related events?*
  
- *How can you use theoretical and experimental probability to make predictions and draw conclusions based on data collection?*
  
- *How do data gathering, bias issues, analysis, and representations affect interpretations and conclusions about data?*
  
- *How does probability help to explain the odds of dependent, conditional, and/or compound events?*
  
- *How can combinations and/or permutations be used to count the possible arrangements of a set?*

# High School Mathematics

## Preparatory Algebra

### Algebraic Ideas

#### Guiding and Essential Questions:

**How do you use mathematics in patterns, relationships, and functions to model and solve problems?**

- *How would you defend your generalization for pattern rules given for the  $n$ th term?*
- *How do you relate the change in one variable to the change in another?*
- *How can you use the coordinate plane, tables, graphs and equations to organize, describe, compare, and interpret relationships in data?*
- *How do you solve equations and inequalities that require two steps?*
- How do you graph ordered pairs and lines on a coordinate plane?
- How can you represent (e.g. concrete manipulatives, drawings) and simplify (e.g., combine like terms) polynomials?

**High School Mathematics  
Preparatory Algebra**

**NOTES**

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Number and Computation (2.7, 2.8, 2.11, 2.12)</b></p>	<p><b>What do you understand about numbers? What do you understand about operations on numbers? How reasonable are your answers in problem situations?</b></p> <p>How do you use scientific notation to represent very large and very small numbers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use whole number exponents.</li></ul>



## High School Mathematics Preparatory Algebra

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• find examples of numbers written in scientific notation in newspapers, business journals, and science articles. Analyze differences in reports, once with scientific notation and again with corresponding ordinary numerals. Explain in learning logs why and how scientific notation was used.</li> <li>• construct large number lines on classroom wall. Add very large and very small numbers in scientific notation, adjusting the scale distance to encompass new numbers.</li> <li>• explore whole number exponents by converting whole numbers that are positive powers of two and fractions that are negative powers of two (base two) to their corresponding binary notation.</li> <li>• analyze growth modeled with exponents. Explore a pyramid investment plan. Sample plan requires a \$20 investment from you to a company. The company then sends \$5 to a person whose name is on top of list and removes the name. Your name is put on bottom of list and you send the list to 200 people. When the company receives letters with your name on top of list, they send you money. Prepare written analysis of the plan. Include census numbers. Compare first round numbers with twelfth or thirteenth round members. Incorporate analysis into school papers, alerting students to why chain letters and pyramid schemes are illegal. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> <li>• explore exponents through analysis of the Tower of Hanoi problem. Tower of Hanoi is made with 3 pegs and squares of increasing side length. All squares, from largest to smallest are on the left peg. Find minimum number of moves required to move all pegs to the right peg, moving one square at a time and placing a square on top of a smaller square. Vary number of pieces to move, investigate solution methods, make predictions, and state rule(s). Explain solution and predictions in learning logs.</li> </ul>	<p>Chad and Sheila enjoy socializing with peers. Chad quickly grasps concepts but cannot organize information on paper. Chad should be provided with models or graphic study guides for organizing steps of equations. Chad should verbalize directions to his teacher or peers before beginning tasks. Chad feels comfortable teaching small groups to manipulate data. While others compute with pencil and paper and computer-generated equations and graphs, Chad creates software programs to interpret data. Chad moves to the next level when he has demonstrated mastery of linear equations on paper (<i>Types of extensions: demonstration of knowledge, purpose and appropriateness</i>).</p>

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Number and Computation (2.7, 2.8, 2.11, 2.12)</b></p>	<p><b>What do you understand about numbers? What do you understand about operations on numbers? How reasonable are your answers in problem situations?</b></p> <p>How do you perform operations on real numbers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use real numbers, operations on real numbers, field properties, and order of operations to solve problems.</li></ul>

## High School Mathematics Preparatory Algebra

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create sample problems, using order of operations and exploring closure, identity, inverse, commutative, associative, and distributive properties as they do or do not relate to operations of addition, subtraction, multiplication, or division.</li> <li>• explore real numbers and field properties, to solve problems. Example:               <ul style="list-style-type: none"> <li>- How much would you have to invest now at 6% interest a year to buy a \$50,000 car in 5 years? Vary the interest rate and compare costs. <i>Answer possible open-response items, based on this activity.</i></li> </ul> </li> <li>• use rules for order of operations to evaluate arithmetic expressions containing multiple operations, exponents, or parenthesis. Analyze expressions and organize steps to enter expressions into calculators.</li> </ul>	<p>Scott understands concepts when class instruction includes visual aids, individual copies of examples, and individual explanations. When completing multiple-step problems, finding patterns, and interpreting data, Scott needs help with sequencing steps. Scott should be provided with a color-coding system that correlates to sequencing order. For example, the first step of the problem may be yellow and the second step could be orange. A checklist could be used to determine if work is complete. Writing is tedious for Scott, so he should be encouraged to make sketches, graphs, or pictures to help him solve problems. Scott needs additional time to internalize concepts and complete tasks (<i>Types of extensions: order of learning, resources and materials, procedures and routines, time</i>).</p>

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Geometry and Measurement (2.8, 2.9, 2.10, 2.11)</b></p>	<p><b>How do you interpret the world in a spatial sense? How do you analyze shapes in your world? How do you measure attributes of objects in your world?</b></p> <p>How do you use tools to do basic geometric constructions?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• identify characteristics of two-dimensional shapes.</li></ul>

## High School Mathematics Preparatory Algebra

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• construct models representing a pool table eight feet by three feet with four corner pockets on grid paper. Record directions of shots, angles of shots, and distance travelled in learning logs. Explain why or why not each ball would drop in the pockets.</li> <li>• construct patterns for quilt blocks, using patterns designed with two-dimensional shapes.</li> <li>• construct polygons and make at least three observations about the exterior angles. Measure three interior and one exterior angle of triangles. Use several triangles and record data in charts. Use inductive reasoning to generalize relationships between exterior angles and two nonadjacent angles. See <i>A Core Curriculum, National Council of Teachers of Mathematics (NCTM) Addenda Series, Grades 9-12</i> activity Inductive and Deductive Reasoning with Exterior Angles, pp. 46-49</li> <li>• fold paper to bisect angles, then use compass to construct angle bisector. Draw models and construct angle bisectors to locate a clinic equidistant from three roads (forming a triangle) running through a camp. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i> activity Properties of Bisectors, pp. 74-78</li> </ul>	<p>Lam is a Hmong students who has been in this country for one year, has beginning English skills, and extremely limited English vocabulary. The teacher will provide Lam with a list of essential vocabulary. Working with a group of English speaking students, he constructs a diagram and labels the diagram using essential vocabulary words (<i>Types of extensions: level of support, resources and materials, procedures and routines</i>).</p>

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Geometry and Measurement (2.8, 2.9, 2.10, 2.11)</b></p>	<p><b>How do you interpret the world in a spatial sense? How do you analyze shapes in your world? How do you measure attributes of objects in your world?</b></p> <p>Why and how do you use indirect measurement?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• develop and apply proportionality and relationships between scale models and actual figures.</li></ul>

**High School Mathematics  
Preparatory Algebra**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• construct enlargements of simple geometric shapes by a scale factor of three, using grid paper and measuring from a projection point.</li><li>• apply coordinate geometry. Make and use a four quadrant map as a positioning system to record location of objects placed in areas (e.g., parking lot or school yard) that have been divided into a grid.</li><li>• develop proportional reasoning.</li></ul> <p>Examples:</p> <ul style="list-style-type: none"><li>- Determine the distance needed to move an overhead projector to enlarge or reduce figures by given scale factors.</li><li>- Enlarge small geometric shapes drawn on grid paper onto larger grids. Compare lengths and areas of original pictures with their enlarged images.</li></ul>	<p>Marie studied English for one year in Cuba before she came to the U.S. six months ago. She is learning English vocabulary and grammar quickly. However, she continues to need support. Maria uses a bilingual dictionary and is given directions in English and Spanish to assist her in constructing geometric shapes (Types of extensions: motivation, resources and materials, level of support).</p>

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Probability and Statistics (2.8, 2.9, 2.11, 2.13)</b></p>	<p><b>How do you ask questions about your world? How do you collect, organize, and interpret data about your questions, and how do you communicate information and made predictions relative to your data?</b></p> <p>How does probability help to explain the odds of dependent, conditional, and/or compound events?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate and explain the role of probability in everyday decision making.</li> </ul>



**High School Mathematics  
Preparatory Algebra**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• test conjectures with simple experiments. Predict probability that of ten births, four (or more) in a row will be girls, using coin flips to represent births. Pool class results and determine experimental probabilities. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i> activity Simulation, pp. 81-82</li></ul> <p><i>Technology suggestion: Use scientific or graphing calculators with random number generator for the simulation and compare results to coin tossing data.</i></p>	

## High School Mathematics Preparatory Algebra

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Probability and Statistics</b> (2.8, 2.9, 2.11, 2.13)</p>	<p><b>How do you ask questions about your world? How do you collect, organize, and interpret data about your questions, and how do you communicate information and made predictions relative to your data?</b></p> <p>How can combinations or permutations be used to count the possible arrangements of a set?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify and describe the number of possible arrangements of objects.</li> </ul>

**High School Mathematics  
Preparatory Algebra**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will:</b></p> <ul style="list-style-type: none"><li>• relate elements of the Pascal triangle with subsets and arrangements of a set. Explain how the elements of the triangle are formed, how they relate to the number of combinations and subsets of a given set, and how they can be used in problem solving.</li><li>• analyze season data of sports teams. Choose ways to rank the top five teams listed. Contrast the top five grouping with ways of choosing a first, second, third, fourth, and fifth place ordering.</li><li>• analyze multispeed bicycles and the number of sprockets in front and rear wheels. Determine number of speeds for each bicycle and consider different combinations that produce same speed.</li><li>• use UPC bar codes to explore combinations and permutations.</li></ul> <p>Example:</p> <ul style="list-style-type: none"><li>- If the first set of five digits represents manufacturers, and the second set of five digits represents products, determine how many manufacturers, products per manufacturer, and products can be coded. Suggest ways to include more manufacturers and products. Explain use of bar codes to code products in learning logs.</li></ul>	

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Algebraic Ideas</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p>	<p><b>How do you use mathematics in patterns, relationships, and functions to model and solve problems?</b></p> <p>How do you graph ordered pairs and lines on a coordinate plane?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use characteristics of the graphs of linear functions.</li></ul>

**High School Mathematics  
Preparatory Algebra**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use baseball cards to examine functions. From pitcher's cards, graph ERA (Earned Run Averages, the number of earned runs divided by the number of innings pitched with the result multiplied by 9). From non-pitcher's cards, graph batting averages (the number of hits divided by the number of times at bat). Use spreadsheets to examine other statistics, such as the number of bases attained divided by number of times at bat.</li><li>• interpret direct variation in terms of rates and constants of variation, based on knowledge of linear relationships of the form <math>y=ax</math>. Analyze graph of data about a mother and daughter's 100 meter race for distance, time, speed, and equation representation. Extend activity with direct experimentation. Suspend weights from a spring and measure displacement. Graph weight in grams versus displacement in centimeters. Explain relationships in learning logs. See <i>A Core Curriculum NCTM Addenda Series, Grades 9-12</i> activity Variation, pp. 41-42</li><li>• recognize relationships between equation of lines and coordinates of points on the line. Develop ideas about general locations of graphs of the form <math>y=ax</math> and <math>y=x + b</math>. Relate lines, data pairs, and linear equations. Discover similarity between parallel lines. Extend to paired data from real-world activities (e.g., hours of TV watched per week versus hours of homework, number of children in family versus number of phones) where the data pairs cluster around a line. Create templates for lines of form <math>y=ax</math> and <math>y=x + b</math> to overlay on graphs to determine equations of best-fit lines. See <i>A Core Curriculum NCTM Addenda Series, Grades 9-12</i>, pp. 32-34</li></ul>	

**High School Mathematics  
Preparatory Algebra**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Algebraic Ideas</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p>	<p><b>How do you use mathematics in patterns, relationships, and functions to model and solve problems?</b></p> <p>How can you represent (e.g. concrete manipulatives, drawings) and simplify (e.g., combine like terms) polynomials?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• simplify algebraic expressions</li></ul>

## High School Mathematics Preparatory Algebra

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use algebra tiles and/or geometric drawings of area models to make physical representations of algebraic operations. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i> activity Polynomials and Geometric Models, p. 55</li> <li>• write and interpret algebraic expressions. Develop intuitive ideas for the nature of variables and relationships among variable expressions. Use pipe cleaners of length <math>a</math>, tongue depressors of length <math>b</math>, and tiles of unit length and form figures with given perimeters, such as a square of perimeter <math>8 + 4b</math>. Write expressions for given figures. Illustrate figures and explain expression in learning logs. See <i>A Core Curriculum NCTM Addenda Series, Grades 9-12</i> activity Writing and Evaluating Variable Expressions, pp. 37-40.</li> <li>• recognize patterns and give specific instances of generalization both verbally and symbolically. Example: <ul style="list-style-type: none"> <li>- Use polygon tiles to build chains of polygons and develop verbal expressions, then represent the perimeter chains, using variables. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i> activity Patterns of Variables pp. 79-82</li> </ul> </li> <li>• examine relationships between biological functions and animals' forms. Measure their own pulse rate and estimate the number of times their heart beats per day. Investigate other animals' pulse rates. Investigate factors that affect heartbeat. Prepare multimedia presentations of findings. See <i>Measurement in the Middle Grades, NCTM Addenda Series, Grade 5-8</i> activity Making Connections through Interdisciplinary Measurement Activities - #23 A-B Size and Form of Animals - Biology, pp. 76-77</li> <li>• investigate relationship between density of objects (e.g., fruits, vegetables) and their ability to float. Determine density of fresh and salt water. Determine population density of their city or state and compare with other geographic regions. See <i>Measurement in the Middle Grades, NCTM Addenda Series, Grade 5-8</i> activity Making Connections through Interdisciplinary Measurement Activities - #24 A-B Density, pp. 78-79</li> </ul>	

**High School Mathematics  
Preparatory Algebra**

**NOTES**



# High School Mathematics

## Algebra I

### Course Overview:

Algebra I is a course that provides basic building blocks for higher mathematics courses. Objectives of Algebra I include to develop strategies for solving non-routine problems and to enable students to develop an understanding of algebra by emphasizing concepts, structure, and applications. Tables and graphs are used to interpret algebraic expressions, equations, and inequalities and to analyze functions. Manipulatives, such as algebra tiles, are used to transition from the concrete to the abstract. Calculators, computers, spreadsheets, graphing utilities, graphing calculators and computer graphing simulators should be used as tools to assist in problem solving. These tools make it possible to include realistic applications throughout the curriculum.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions may be included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### Guiding and Essential Questions:

**How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?**

- How do you use real numbers to solve problems represented by one- and two-variable linear equations?
- How do you relate formulas, tables, graphs, and equations of problems represented by functions to each other?
- How do you use different parameters to affect graphs of problems represented by functions?
- How do you use equations, lines, and curves to model the relationships between two real-world quantities?
- How can you use ratios and proportions to connect real world and mathematical ideas?
- How do data gathering techniques, bias issues, analysis, and representations affect interpretations and conclusions about problems involving data?
- How can you use sequences to connect real-world and mathematical ideas?
- How can you use combinations and permutations to count discrete quantities?

**High School Mathematics  
Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Linear Equations, Inequalities, and Functions</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How do you use real numbers to solve one- and two-variable linear equations?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• solve one-variable equations using manipulatives, symbols, procedures, and graphing.</li> <li>• solve two-variable linear equations using real numbers, real number operations, field properties, and order of operations.</li> </ul>

# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use two variables to model lengths of molding needed to surround edge of rectangular window. Relate equations derived to those needed for other window shapes. Analyze strengths and weaknesses of various models. Vary constants and explore variations in resulting equations. Explain the use of real numbers and real-number operations employed in solving equations. See <i>Algebra in a Technological World, National Council of Teachers Mathematics (NCTM) Addenda Series, Grades 9-12</i> activity Modeling by Applying Known Rules: Window Moldings, pp. 48-49, 69</li> <li>• <b>Technology suggestion:</b> Use graphing calculators or computer software to compare results.</li> <li>• use real-number facts and algebra tiles to develop procedures for multiplying monomials, binomials, and other polynomials and for factoring monomials, binomials, trinomials, and other polynomials. Relate lengths of sides with polynomial factors and area models with algebraic products.</li> <li>• connect pattern blocks to make chains. Compare both area and perimeter of the chains as the number of blocks increases. Look for patterns in the progressions, arrange data in tables, and find rule for <math>n</math>th term in patterns, relating number of blocks to perimeter and number of blocks to area.</li> <li>• solve linear equations that model real-world problems. Compare earnings of two employees. Analyze amount of money earned by a plumber and the plumber's helper, relating hours worked with dollars earned. Create tables to organize data. Identify variables and constants. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #1 Plumbers and Helpers, pp. 8-9</li> <li>• explore tabular, graphical, and symbolic representations for the number of months needed to repay a \$200 no-interest loan. Determine multiple representations of scheduled loan repayment. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Loan Repayment Problem, pp. 56-57</li> </ul>	<p>Dan is a seventh grader who joins the eighth grade honors Algebra I class each morning. Dan's abilities and interests are beyond most of the eighth graders in his class and he is progressing through much of the Algebra I content by displaying mastery of the concepts through pretests and projects. He supplements his work in class by corresponding with Dr. Gelfand at Rutgers University and completing rigorous algebra assignments. He mails them to Rutgers and receives comments on his work from graduate mathematics students. He plans to complete Algebra I by the end of the first semester and then to join an advanced geometry class at the high school. Dan investigates several of the same open-ended problems as the Algebra I class, including the problem on modeling the length of molding needed to surround the edge of a window. Dan is investigating areas of different shaped windows, all of which use the same amount of molding. He has extended his investigation to maximize volume for a given surface area and is using spreadsheets and graphing calculators to expand his investigation (<i>Types of extensions: purpose and appropriateness, complexity, time, pace, environment, order of learning, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

**High School Mathematics  
Algebra I**

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Linear Equations, Inequalities, and Functions</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p> <p style="text-align: center;"><b>Non-Linear Functions: Quadratic, Exponential, and Absolute Value</b> (2.7, 2.8, 2.9, 2.11, 2.12)</p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How do you relate formulas, tables, graphs, and equations of problems represented by functions to each other?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• connect the skills to solve linear equations to solve linear inequalities.</li> <li>• write and solve linear inequalities.</li> <li>• use the skills learned to solve linear equations and inequalities to solve numerically, graphically, or symbolically nonlinear equations such as quadratic and exponential equations.</li> <li>• extend ideas of transformation of linear equations, such as vertical and horizontal shifts, to transformations of nonlinear equations.</li> </ul> <p style="text-align: right;"><i>(Continued on page 32)</i></p>

# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use computer algebra system as a tool to move among graphical, numerical, and symbolic representations of functions. Transformations can be horizontal or vertical translations, reflection over horizontal or vertical axis, reflection over a diagonal, or a stretch in the vertical or horizontal direction See <i>Algebra in a Technological World NCTM Addenda Series, Grades 9-12</i>, pp. 18-22</li> </ul> <p><i>Technology suggestion: Compare paper and pencil graphs with those constructed by graphing calculators and computers.</i></p> <ul style="list-style-type: none"> <li>• examine families of functions (e.g., lines with same slope, same y-intercept), their graphs and key features, and contexts and problems in which they apply. Extend this analysis to consider the regions above and below lines, examining the regions and their relationship to inequalities.</li> <li>• explore data derived from problems.</li> </ul> <p>Example:</p> <ul style="list-style-type: none"> <li>- A ship at sea is traveling diagonally toward shore to meet an ambulance moving parallel to shore. Determine the shortest possible time for the two to meet. Create tables to organize data and represent the scenario graphically. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #8 Boats and Ambulances, pp. 54-55</li> <li>• construct best-fit lines for data analyzed and plotted from a table of winning times for womens' Olympic 400 meter swim. Explore implications of projecting future developments from given data and linear representations. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #14 Winning Times for the Women's Olympic 400-meter Freestyle Swim, p. 40</li> <li>• analyze trends in future earnings and their relationships with grades, ACT scores and SAT scores. Create graphs and charts to represent data, relating grades, ACT scores and SAT scores. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #7 Representing Data: Grades, ACTs and SATs, p. 22</li> <li>• explore transforming graphs of parabolas by vertical shifts and horizontal shifts, and vertical stretches. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #6 Transforming Graphs, pp. 34-38</li> </ul>	<p>Will, Janelle, Brandon, and Lauren are part of an advanced seventh grade Algebra I class. The class has been investigating graphs of linear equations and their transformations using paper and pencil to do charts and graphs and then comparing them to graphs made both with lists and the <math>Y =</math> function on a graphing calculator. They have made and verified several conjectures about effects of translations and reflections and are currently working on ways to write equations that will rotate graphs of linear equations in both positive and negative directions on a four-quadrant Cartesian graph. Other groups of students are working on translations of various types of quadratic equations. When the groups have completed their work, they will present their findings using a jigsaw-grouping pattern. Each group is responsible for ensuring that the other students understand types of transformations that they have investigated (<i>Types of extensions: purpose and appropriateness, complexity, time, pace, procedures and routines, demonstration of knowledge, participation, motivation</i>).</p>

# High School Mathematics

## Algebra I

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Linear Equations, Inequalities, and Functions</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p> <p style="text-align: center;"><b>Non-Linear Functions: Quadratic, Exponential, and Absolute Value</b> (2.7, 2.8, 2.9, 2.11, 2.12)</p>	<p><i>(Continued from page 30)</i></p> <p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How do you relate formulas, tables, graphs, and equations of problems represented by functions to each other?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• connect the skills to solve linear equations to solve linear inequalities.</li> <li>• write and solve linear inequalities.</li> <li>• use the skills learned to solve linear equations and inequalities to solve numerically, graphically, or symbolically nonlinear equations such as quadratic and exponential equations.</li> <li>• extend ideas of transformation of linear equations, such as vertical and horizontal shifts, to transformations of nonlinear equations.</li> </ul>

**High School Mathematics**  
**Algebra I**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine linear functions in geometry. Graph ordered pairs consisting of the height and base of objects constructed of pipe cleaners. Generate rules for calculating area from base and height. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #2 Pipe Cleaners and Area, pp. 10-11</li></ul>	

**High School Mathematics**  
**Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Linear Equations, Inequalities, and Functions</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p> <p style="text-align: center;"><b>Non-Linear Functions: Quadratic, Exponential, and Absolute Value</b></p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How do you use different parameters to affect graphs of problems represented by functions?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use characteristics of the graphs of linear functions, such as slope and intercepts, transformations.</li> </ul>



## High School Mathematics Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• find and interpret features of graphs in tables, equations, and problems from models. Develop and show physical connections for slope (e.g., successive heights of objects) and intercepts (e.g., original height) relative to models.</li> <li>• explore parallel lines, lines with common x-intercepts, and lines with common y-intercepts in both graph and equation form.</li> <li>• compare data drawn from various stages in density experiments. Use linear models to relate volume and mass. Compare slopes of graphs and relate objects' density. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity #2 Oil and Water Don't Mix, pp. 30-31</li> <li>• use data from dosage charts to plot lines for usual dosage and for maximum dosage of a drug that combats bacterial infections. Research percentage of drug that remains in the system days and weeks after medication is stopped. Explore meaning of slope and intercepts of lines, and relate transformations to dosage information. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #13 Weights and Drug Doses, p. 39</li> </ul> <p><b>Technology suggestion:</b> Use spreadsheets, graphing calculators, or computers to compare and analyze data.</p>	<p>Both Martie and Cindy benefit from peer interaction when comparing, interpreting, and transforming information. Classroom activities should include individual time, pairing of students, and small group activities (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, pace, environment, order of learning, procedures and routines, resources and materials, level of support, participation, motivation, demonstration of knowledge</i>).</p>

**High School Mathematics**  
**Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Linear Equations, Inequalities, and Functions</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p> <p style="text-align: center;"><b>Non-Linear Functions: Quadratic, Exponential, and Absolute Value</b> (2.7, 2.8, 2.9, 2.11, 2.12)</p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How do you use equations, lines, and curves to model the relationships between two real-world quantities?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write and solve linear sentences, describing real-world situations by using and relating formulas, tables, graphs, and equations.</li> <li>• collect, organize, and display two-variable data, and use a curve of best fit as a model to make predictions.</li> </ul> <p style="text-align: right;"><i>(Continued on page 38)</i></p>

# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use linear relationships as the organizer of classroom aerobic exercises. Use arms to model slope changes, stand taller or shorter to model intercept changes for lines. Vary arm positions to model other graphs, such as both arms upward in parabolic form.</li> <li>• relate data from studies of automobiles' oil changes and engine repair. Plot data, choose and analyze best-fit lines, and develop equations. Explore meaning of negative slope and its relation to the cost of car repairs after several oil changes. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #10 Oil Changes and Engine Repair, p. 36</li> <li>• explore real data, plot on graph paper, and fit a geometric model and straight line to the data. Compare shoe size to height. Find slope and y-intercept of the line and use resulting equation as an algebraic model. Calculate predicted shoe size from height. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #5 Height and Shoe Size, pp. 26-28</li> <li>• plot relationships from sets of data, using tables of information about a professional basketball team. For the sets where the plots appears to form a line, draw the line and find its equation. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity Relations among NBA Statistics, p. 38</li> <li>• find amount of playing time remaining on audiotapes by constructing models. Determine possible data points, construct scatterplots, and develop a function rule. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Audiotape Situation, pp. 43-47</li> <li>• use computer or calculator curve fitter to find a best-fitting quadratic function for the price of a four-game ticket package to professional teams' games as a function of the number of ticket packages sold. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Season - Ticket Sales, p. 3</li> </ul>	<p>Carol is able to apply information to real-world activities when provided with study guides, procedural steps, and formulas. She is motivated by verbal presentations that enable her to retain information. Carol needs help with task completion. She will carry an organizer with a checklist to minimize lapses in focus. The organizer will include separate sections and study guides for each course on her schedule. Frequent checks for understanding by the teacher help keep Carol focused. Self-monitoring allows for goal setting. Carol needs basic skill review before transitioning to next level. Carol will prepare a multimedia presentation, including the explanation of equations, lines, and curves to model relationships between two real-world quantities (<i>Types of extensions: complexity, magnitude, time, pace, order of learning, procedures and routines, resources and materials, level of support, purpose and appropriateness</i>).</p>

**High School Mathematics**  
**Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Linear Equations, Inequalities, and Functions</b> (2.7, 2.8, 2.9, 2.10, 2.11, 2.12)</p> <p style="text-align: center;"><b>Non-Linear Functions: Quadratic, Exponential, and Absolute Value</b> (2.7, 2.8, 2.9, 2.11, 2.12)</p>	<p><i>(Continued from page 36)</i></p> <p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How do you use equations, lines, and curves to model the relationships between two real-world quantities?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write and solve linear sentences, describing real-world situations by using and relating formulas, tables, graphs, and equations.</li> <li>• collect, organize, and display two-variable data, and use a curve of best fit as a model to make predictions.</li> </ul>

**High School Mathematics**  
**Algebra I**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use computer or calculator curve fitter to explore types of functions to fit data students gather to relate the height of a ramp with the time it takes a skateboard to travel the length of the ramp. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i>, pp. 12-14</li></ul> <p><i><b>Technology Suggestions:</b> Use geometric investigation tools to explore relationship between radius and circumference. Pair it with physical experimentation with circular objects to arrive at a linear model for circumference as a function of radius. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i>, pp. 52-55, 59-60, 71-72.</i></p> <ul style="list-style-type: none"><li>• analyze relationship between daily cost of electricity as a function of average monthly temperature. Generate a variety of functions and examine their weaknesses.</li></ul>	

**High School Mathematics  
Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Proportional Reasoning</b> (2.7, 2.8, 2.9, 2.11, 2.12)</p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How can you use ratios and proportions to connect mathematical ideas?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write and solve proportions sentences.</li> <li>• use proportional reasoning (ratios and proportions to solve real-world problems.</li> <li>• solve problems that have direct or inverse relationships for any variable.</li> </ul>

# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• contrast direct and inverse variation through problems in which there is a cost per item with problems involving a fixed total cost.</li> <li>• use tables and graphic representations of projected percent change in population for the 1990 census. Explore increases, decreases, and predictions relative to population. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #3 Understanding Data: Population Shifts, pp. 14-15</li> </ul> <p><i>Technology suggestion: Use graphing calculators and/or computer software to compare population data.</i></p>	<p>Mei-lin is from mainland China. She speaks, reads, and writes Mandarin Chinese below the grade level of her peers. She is a talented musician and strong in math. In addition to receiving ESL services, Mel-lin works with a bilingual community volunteer in her math class who translates oral presentations. The community volunteer translates written text and oral directions and explanations for Mei-lin. She presents her assignments in both Mandarin Chinese and English. The teacher presents concepts using graphic organizers, scaffolding, and manipulatives. She simplifies the language used. Mei-lin is given additional time to complete assignments as needed. (Types of extensions: procedures and routines, complexity, level of support, resources and materials motivation, time).</p>

**High School Mathematics  
Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Probability and Statistics (2.7, 2.8, 2.11, 2.12, 2.13)</b></p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How can you use data gathering, bias issues, analysis and representations to affect interpretations and conclusions about data?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• design and conduct probability simulations, and interpret the results.</li> </ul>



# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare real data from various sources relative to the school community and determine ways to control outcome (e.g. ask only students with ice cream what is their favorite dessert).</li> <li>• analyze data samples of car ratings. Explore features of top-rated cars. Create box-plots to analyze variations in the ratings on each category. Write letters to fourth and fifth graders explaining how current advertising campaigns might contain deceptive statistics and how advertisers can skew results by controlling variables. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i>, pp. 23-24</li> <li>• analyze data and graphs on drinking and driving. Write articles for school newspapers explaining data and describing consequences of driving while drinking (<i>WP-Transactive</i>). See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #6 Representing Data: Drinking and Driving</li> <li>• explore the probability that spaghetti pieces form triangles. Connect ideas of chance and data with triangle inequalities. Construct triangles by breaking pieces of spaghetti at two random points and forming triangles with the three pieces. Use calculator to generate random numbers and chart and graph results. Calculate area of triangles and find probability that three lengths will form a triangle. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #2 What is the Probability that Spaghetti Pieces form a Triangle?, pp. 10-11</li> <li>• conduct experiments to investigate real-life problems. Organize data, make scatterplots, and look for patterns in data. Discuss outliers in data set and make stem-and-leaf plots. See <i>Data Analyze and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #1 Do Tall People Run Faster?, pp. 8-9</li> <li>• represent real-world situations with mathematical models. Model total number of toothpicks needed to construct a square of any size that is subdivided into one x one squares of toothpicks. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #7 Toothpicks and Mathematical Models, pp. 37-39</li> <li>• use videocassette player to record data from real-life events and analyze data with algebraic-computing tools. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Why does one person run faster than another?, pp. 22-23</li> </ul>	<p>Bobby communicates well with adults. Often, he is the center of attention due to his ability to influence others. His knowledge of computer simulations is extensive. His vocabulary use is beyond his grade level, yet his written work does not reflect his knowledge. In this activity, Bobby will conduct two surveys about drinking and driving. With a partner, Bobby will randomly interview students and organize and tabulate data. His partner will compare the data from people under 21 to people over 21. Bobby will create multimedia presentations for local SADD chapters (<i>Types of extensions: purpose and appropriateness, resources and materials, motivation</i>).</p>

**High School Mathematics  
Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Sequences (2.7, 2.8, 2.9, 2.11, 2.12)</b></p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How can you use sequences to connect mathematical ideas?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• see patterns in arithmetic sequences and geometric sequences and geometric sequences using recursion.</li> <li>• see pattern in other sequences.</li> <li>• relate the patterns in arithmetic sequences to linear equations.</li> <li>• relate the patterns in geometric sequence to exponential equations.</li> </ul>

# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>compare sequences formed by money earned over time from a fixed increment vs. money earned over time as a result of the original amount doubling each year. Estimate totals without calculating, then calculate totals. Graph totals from each of the above sequences and generalize with rules using algebraic expressions. Compare effects of the addition at each stage with the effects of the multiplicative increase at each stage. Explore relationships between actual increases and graphic representations.</li> <li>explore problems involving simple and compound interest. Calculate and generalize rules, using algebraic expressions. Compare money earned from both methods and explain in learning logs how amounts differ.</li> </ul> <p><i>Technology suggestion: Use graphing calculator and spreadsheets to compare amount of money earned from both plans.</i></p>	<p>When using combinations and permutations to count discrete quantities, Dante needs a quiet environment to write, type, or process information. He understands basic information that is presented in a simple format; however, he cannot visualize multiple representations. It is hard for him to recognize patterns and strategies. He needs to demonstrate different strategies, using scaled versions of locations. In this activity, Dante will need a checklist of pattern-seeking strategies. Dante will need to see patterns in his daily life, such as sports and outdoor activities, as motivation. He will need to see each strategy as a new activity, breaking tasks into small parts, then interpreting information. He will report information by using visual aids to express patterns (<i>Types of extensions; purpose and appropriateness, motivation, order of learning, environment, procedures and routines, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Mathematics**  
**Algebra I**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Probability and Statistics</b> (2.7, 2.8, 2.11, 2.12, 2.13)</p>	<p><b>How do you take real-world problems and mathematical listings of individual problems and organize them systematically, provide yourself with a mathematical picture or diagram representing the problem and solve it by relating it to equations, functions, graphs, and other algebraic representations?</b></p> <p>How can you count discrete quantities?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use strategies such as combinations and permutations to count discrete quantities (the study of a thematical properties of sets and systems that have a countable number of elements).</li> </ul>

# High School Mathematics

## Algebra I

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• count the number of routes that a school can use for its buses. Find pathways from several bus stops along school route and develop possible routes. Create maps for local school districts. Create multimedia presentations for school boards.</li> <li>• construct function models through deductive counting processes for the number of wall panels a pet-hotel chain uses to construct two-meter-by-two-meter square wards in various arrangements. Use an organized, valid counting approach to count the number of panels needed to construct pens of squares that share one side and develop a rule for the number of panels in any number of squares. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity #4 Pet Wards, p. 70</li> <li>• explore combinations and permutations of countable and then large numbers of objects.</li> <li>• determine the number of handshakes between each student in your class. Compare those rules with the combinations of two students out of <math>n</math> students. Consider simpler cases, look for patterns, construct tables, and produce graphical representations and algebraic rules to represent procedures. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Handshake Problem, pp. 66-68</li> </ul> <p><b>Technology suggestion:</b> Use graphing calculators or computer software to determine combinations.</p>	<p>Jeff and Latoya enjoy connecting new topics they learn in mathematics to other areas of interest. They read voraciously, and have read historical accounts of mathematicians studying the Konigsburg bridges problem as well as more recent descriptions of mathematicians and development of network graph theory. They used this information in the study of the bus route problem and found several routes that would save the school district money and would involve less travel time for many students. They plan to create a multimedia presentation on their findings for next month's school board meeting where their proposed bus routes will be considered (<i>Types of extensions: purpose and appropriateness, complexity, time, environment, procedures and routines, resources and materials, demonstration of knowledge, participation, motivation</i>).</p>

**High School Mathematics**  
**Algebra I**

**NOTES**

# High School Mathematics

## Geometry

### Course Overview:

This course is designed for students who have successfully completed Algebra I. The study of geometry includes experiences and activities that foster a feeling for the value of geometry in life. Emphasis is placed on the use of reasoning skills, and two- and three-dimensional modeling to solve problems, both mathematical and real world.

Reasoning involves the process of thinking about a geometric question, justification involves building an argument for some mathematical proposition, and proof involves justification that is logically valid and is based on assumptions, definitions, and proven results. Reasoning is used to find a justification for a proposition that may or may not then be turned into a proof.

Focus of the course is on student discovery and realistic applications of geometric relationships and principles. Students use manipulatives, scientific calculators, and appropriate computer software to develop conjectures by inductive processes. Visualization, pictorial representations, and applications are used to explore figures and problems from multiple perspectives. Figures may be drawn in unreferenced space or planes, or they may be drawn in a reference system of coordinate graphs and figures and may be moved around following specific rules through transformations in both coordinated and unreferenced systems.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### Guiding Questions:

- How do you relate spatial properties of points, segments, lines, planes, angles, and solids to each other?
- How can you use appropriate tools to describe, sketch, and construct two- and three-dimensional figures?
- How do you relate algebraic procedures and geometric concepts?
- How can you use relationships in triangles to solve problems such as congruency, similarity, right-triangle trigonometry, and the Pythagorean theorem?
- How can you use properties of circles and polygons, including special quadrilaterals, to classify and solve problems?

## Geometry

- How do you relate proportional and transformed figures algebraically or geometrically, including figures in a coordinate plane?
- How do you relate proportional changes in volume or surface area in geometric solids?
- How do you relate proportional and transformed figures algebraically or geometrically, including figures in a coordinate plane?



# Geometry

## NOTES

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>General Relationships</b> (2.7, 2.8, 2.9, 2.10)</p>	<p>How do you relate spatial properties of points, segments, lines, planes, angles, and solids to each other?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• find angle relationships such as vertical angles, linear pairs, complementary angles, and supplementary angles.</li> <li>• identify relationships between and among points, lines and planes, such as betweenness of points, midpoint, distance, collinear, coplanar, parallel, and skew lines.</li> <li>• find the intersection of lines, planes, and solids.</li> <li>• use relationships among one-, two- and three-dimensional measures.</li> <li>• explore concepts of vectors.</li> </ul>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• plot four vertices of a quadrilateral on a coordinate grid system. Find slope of each side to decide what type of quadrilateral was graphed. Use distance formula to explore sides of other quadrilaterals. Compare quadrilaterals, including slope and length of diagonals. <i>See Connecting Mathematics National Council of Teachers of Mathematics (NCTM) Addenda Series, Grades 9-12 activity</i> <i>Quadrilaterals and Coordinates, pp. 57-58</i></li> <li>• locate several cities on a map. Connect specific cities, forming polygons. Use scale and distance to measure lengths and calculate distances between cities. Compare length of diagonal connections to polygon pathways between cities. Explain procedures in learning logs, including illustrations. Describe where such skills could be applied.</li> <li>• use models of Platonic solids to draw two-dimensional representations from various angles. Construct nets of the faces of solids and assemble them into mobiles.</li> <li>• explore chaos games to form fractals. Roll a number cube as a decision-making tool to choose the side of a triangle on which to draw a midpoint, developing new segments and forming a Sierpinski triangle. Vary the original triangle to alter the design. <i>See Geometry From Multiple Perspectives, NCTM Addenda Series, Grades 9-12 activity</i> <i>The Chaos Game, p. 22</i></li> <li>• explore fractals formed by trisecting sides of an equilateral triangle. Advance the fractal construction to four iterations. Analyze sequences of perimeters and areas of shapes. <i>See Geometry From Multiple Perspective, NCTM Addenda Series, Grades, p. 57</i></li> </ul> <p><b>Technology suggestion:</b> <i>Use geometry software to explore relationships among triangles. See Geometry From Multiple Perspective, NCTM Addenda Series, Grades 9-12 activities</i></p> <p>#1 <i>Geometric Supposer (Triangles)</i> <i>Investigation: Midsment of a Triangle, p. 17</i></p> <p>#2 <i>Geometric Supposer (Triangles)</i> <i>Investigation: Line Parallel to a Side of a Triangle, p. 18</i></p> <p>#5 <i>Geometry One Investigation: Midpoints on a Triangle, p. 21</i></p>	<p>Roger is a braille reader. He creates raised line maps using hot glue, yarn, or a tactile image enhancer to connect specific cities to form polygons. He also uses a tactile graphic kit to draw raised line drawings. He works with a peer to draw three-dimensional figures. <i>(Types of extensions: resources and materials, level of support)</i></p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>General Relationships</b> (2.7, 2.8, 2.9, 2.10)</p>	<p>How can you use appropriate tools to describe, sketch, and construct two- and three-dimensional figures?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• integrate constructions such as segments and angles, segment bisectors, perpendiculars, angle bisectors, parallel lines, circles, arcs, and polygons.</li> <li>• describe, draw, and construct two-dimensional and three-dimensional figures.</li> </ul> <p style="text-align: right;"><i>(Continued on page 56)</i></p>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• design fruit drink boxes. Develop flat patterns on grid paper. Repeat but vary dimensions to form other containers. Choose patterns to compare boxes to cylindrical cans. Compare surface area and compare volume of containers. Diagram ways to pack cans into shipping crates and compare to packing boxes in the same crates. Explain advantages and disadvantages of packing arrangements in letters to businesses. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> <li>• construct clay models of solids and slice off sections or create and use models constructed with pipe cleaners. Include measurements and vary the solids, using cubes and then rectangular prisms. Include many different plane figures sliced on solids. Explore plane figures that cannot be formed from solids. Explain procedures in learning logs, including diagrams.</li> <li>• construct a Sierpinski carpet fractal, starting with a square and then taking a square out. Compare length of sides and perimeter of squares taken out in each iteration. Find the area of the figure that remains in the third iteration. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity Fractal Carpet, p. 58</li> <li>• create a Sierpinski triangle fractal, using dilations and isometries. Compare the area and perimeter at each iteration. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #18 The Sierpinski Triangle Revisited, p. 60</li> <li>• create a Peano curve, a fractal design formed using hooks constructed from two sides of a square. Predict the length of segments in iterations. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #17 Fractal Curve, p. 59</li> <li>• connect centers of all polygons in an Archimedean tessellation. Create the dual of the tessellation by connecting centers of all polygons that share common sides. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #12 Archimedean Duals, p. 40</li> </ul>	<p>Regina is fascinated with fractals and has been discussing some of her findings with professors at the Geometry Center at the University of Minnesota via the Internet. The professors have been able to challenge Regina at a level higher than that possible in a typical high school class. She uses a dynamic geometry computer program to deepen her investigations. Students will include their electronic presentations in their mathematics working folders (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, pace, environment, order of learning, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>General Relationships</b> (2.7, 2.8, 2.9, 2.10)</p>	<p><i>(Continued from page 54)</i> How can you use appropriate tools to describe, sketch, and construct two- and three-dimensional figures?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• integrate constructions such as segments and angles, segment bisectors, perpendiculars, angle bisectors, parallel lines, circles, arcs, and polygons.</li> <li>• describe, draw, and construct two-dimensional and three-dimensional figures.</li> </ul>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• construct equilateral, nonregular pentagons representing tiles used to pave streets in Cairo. Investigate tiling patterns in school, malls, and buildings. Create bulletin boards or other visual displays to display tessellations. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #11 The Cairo Tessellation, p. 39</li> <li>• find all two-dimensional patterns for the five sides of a cube (box) without a top. Explore the number of two-dimensional patterns for regular tetrahedrons. For cube with tops, find all six-square patterns. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity Collapsing Cubes, p. 46</li> </ul>	<p>Manuel lived in the Dominican Republic until he was 12 and then moved to the U.S. He is fluent in his native language and continues to speak Spanish at home. Most of his English communication is at home. His conversational English is at an intermediate level while his reading and writing are at a beginning level. Concepts are presented using semantic maps and manipulatives. The teacher provides Manuel with an electronic bilingual dictionary. In addition, Manuel uses computer software that teaches concepts in Spanish (<i>Types of extensions: resources and materials, procedures and routines, level of support</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Coordinate Geometry and Transformations</b> (2.7, 2.8, 2.9, 2.10)</p>	<p>How do you relate algebraic procedures and geometric concepts?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• connect geometric diagrams with algebraic representations.</li> <li>• represent geometric figures and properties using coordinates.</li> <li>• connect the concepts of slope, distance, and midpoint to coordinate geometry.</li> </ul> <p style="text-align: right;"><i>(Continued on page 60)</i></p>



## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use geometric and algebraic approaches to determine whether a comet on a linear path will strike a stationary planet located at a point with given coordinates. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #11 Cosmic Emergency, p. 59</li> <li>• measure both circumference and diameter of a variety of cylinders using string and ruler. Plot each circumference as a function of diameter on graph paper. Analyze slope of line and relate circumference to the diameter. Estimate relationship between circumference and height of each cylinder, then measure to compare circumference length to height of cylinder. Compare area of lid to lateral surface area of cylinder.</li> </ul> <p><i>Technology suggestion: Use graphing calculators or computer software to examine slope of line relative to the value of pi.</i></p> <ul style="list-style-type: none"> <li>• analyze a variety of transformations to develop sequences of transformations to prove triangles congruent.</li> <li>• use doubling of coordinates to explore similarity and size of segments, size of angles, and size of triangles. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i>, pp. 51-53, pp. 55-56</li> <li>• use coordinate representations as mathematical models of geometric ideas to solve problems</li> </ul> <p>Examples:</p> <ul style="list-style-type: none"> <li>- Plant Christmas trees in parallel lines, each tree at least five feet from one another. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i>, p. 48</li> <li>- Locate the origin and reproduce floor plan of a living room. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i>, p. 49</li> <li>- Graph equations to represent mixtures of paint. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i>, p. 49</li> </ul> <ul style="list-style-type: none"> <li>• use geometric models for locating buried treasure. Find distance using Pythagorean theorem, then use coordinate representation to create algebraic models to solve problem. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #9 Buried Treasure, p. 56</li> </ul>	<p>Gerald is taking an earth and space science course during the same block as his year two integrated mathematics class that includes algebra, geometry, probability, statistics, and number theory. When he saw the movie <i>Armageddon</i>, he became fascinated with the possibility of a meteor or comet hitting the earth. He is working on a science fair project designed to predict the probability of such a catastrophe. He has been to the local university several times to meet with two astronomy professors, and he frequently gets advice from NASA scientists by e-mailing his questions to them. Gerald's geometry teacher frequently meets with him during lunch or after school to answer his algebra and geometry modeling questions (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, environment, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Coordinate Geometry and Transformations</b> (2.7, 2.8, 2.9, 2.10)</p>	<p><i>(Continued from page 58)</i></p> <p>How do you relate algebraic procedures and geometric concepts?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• connect geometric diagrams with algebraic representations.</li><li>• represent geometric figures and properties using coordinates.</li><li>• connect the concepts of slope, distance, and midpoint to coordinate geometry.</li></ul>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use algebraic and geometric representations to determine how a computer-game designer can coordinate positions to toss a ball so that it lands as close as possible to the center of a goal line. Communicate with computer-game designers via e-mail to learn how computer games are created. Write articles for school newspapers describing the process (<i>WP-Transactive</i>).</li> </ul>	<p>Lei, Clint, and Will are not efficient in processing the information in a problem to identify the problem type and evaluate the available information. They also have not developed efficient strategies to plan a solution. In the past, they have used the “key word” strategy which has led to superficial understanding of math procedures and produces incorrect answers. They are taught a metacognitive strategy for approaching math problems. The students are given problems and asked to plan the steps to the solution. First the teacher uses Thinking Aloud strategies to model the strategy. They students then read the problem, paraphrase the problem aloud, visualize the problem, identify what information is relevant and not relevant, what is known and not known (e.g., information evaluation), identify the purpose of completing the procedures of the problem (e.g., goal setting). In addition they will use previously taught estimation strategies to predict the answer. They receive repeated support and guided practice in using the strategy until they reach the automatic level in applying the strategy to novel situations (<i>Types of extensions: procedures and routines, order of learning, level of support, pace</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Relationships in Triangles</b> (2.9, 2.10)</p> <p><b>Quadrilateral Relationships</b> (2.9, 2.10)</p> <p><b>Other Polygons and Circles</b> (2.9, 2.10)</p> <p><b>Congruence and Similarity</b> (2.8, 2.9, 2.10, 2.11)</p> <p><b>Coordinate Geometry and Transformations</b> (2.7, 2.8, 2.9, 2.10)</p> <p><b>Measurements</b> (2.9, 2.10, 2.13)</p>	<p>How can you use relationships in triangles to solve problems such as congruency, similarity, right-triangle trigonometry, and the Pythagorean theorem?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use angle and side relationships such as triangle sum theorem, triangle inequalities, isosceles and equilateral triangle properties, altitude, and median.</li> <li>• use Pythagorean theorem and its converse.</li> <li>• use right triangle relationships such as trigonometric ratios (45-45-90 and 30-60-90 triangles).</li> <li>• prove triangles and other polygons congruent and similar, and explore corresponding parts relationships.</li> </ul>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use trigonometry to model how surveyors determine the height of mountains by measuring angle of elevation from the ground at two locations that are a known distance apart. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, pp. 87-90</li> <li>• discover the Pythagorean theorem. Construct similar triangles on the legs and hypotenuse of a right triangle. State and justify conjecture about the areas of the triangles. See <i>Geometry From Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #4 General Pythagorus, p. 20</li> <li>• explore properties of angle bisectors and perpendicular bisectors to locate the site of an emergency heliport equidistant from the centers of three towns. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, p. 74-78</li> </ul>	<p>Jorge is working on a surveying badge. His Scout leader is an engineer and is working with Jorge on basic trigonometric concepts needed to understand surveying. On their last weekend hike, Jorge was able to determine the location of the troop within 50 feet, using the angle of the sun and geological information. He frequently is called upon to explain this information to younger members of the troop and is considering becoming an assistant scout leader for one of the younger groups. When his geometry class began to study basic trigonometry, Jorge scored 100 per cent on the unit pretest and was excused from completing many of the exercises in the mathematics book. He also earned respect from many class members who had not previously realized how much mathematics Jorge knew since much of his knowledge had a practical basis and was not always related to the exercises in the book (<i>Types of extensions: purpose and appropriateness, complexity, pace, environment, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Relationships in Triangles</b> (2.9, 2.10)</p> <p><b>Quadrilateral Relationships</b> (2.9, 2.10)</p> <p><b>Other Polygons and Circles</b> (2.9, 2.10)</p> <p><b>Congruence and Similarity</b> (2.8, 2.9, 2.10, 2.11)</p> <p><b>Coordinate Geometry and Transformations</b> (2.7, 2.8, 2.9, 2.10)</p> <p><b>Measurements</b> (2.9, 2.10, 2.13)</p>	<p>How can you use properties of circles and polygons, including special quadrilaterals, to classify figures and solve problems?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use properties of quadrilaterals such as classification.</li> <li>• use properties of other polygons.</li> <li>• use properties of circles, arcs, chords, central angles, inscribed angles, and concentric circles.</li> <li>• use inscribed and circumscribed polygons.</li> </ul>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• design classification systems for their own geometric figures. Explain principles of systems in learning logs.</li> <li>• connect midpoints of sides of quadrilaterals and determine the nature of the newly joined quadrilateral. Vary the quadrilateral. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #7 Geometric Supposer (Quadrilaterals) Investigation: Midpoints of Sides of Quadrilaterals, p. 28</li> </ul> <p><i>Technology suggestion: Use computer software to explore relationships between original figures and segments formed by connecting midpoints.</i></p> <ul style="list-style-type: none"> <li>• find areas of parallelograms on geoboards. Record base, height, and area. Form, test, and justify a formula for area. Use a similar approach for trapezoids. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #8 Areas of Parallelograms, p. 29</li> <li>• investigate bisectors of angles of quadrilaterals. Use compass, reflector, or paper folding. Vary the quadrilateral, list properties, and identify common properties. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #10 Quadrilateral Investigation, p. 31</li> <li>• construct quadrilateral with a pair of congruent opposite sides, which, if extended, form a 60 degree angle. Draw in diagonals and explore sides, angles, and parallel or nonparallel sides. Describe figures in learning logs so classmates could draw them. See <i>Geometry From Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity Equilic Quadrilaterals, p. 30</li> </ul> <p><i>Technology suggestion: Test conjectures with geometry software.</i></p> <ul style="list-style-type: none"> <li>• compose fraction guidebooks for primary level students. Relate halves, thirds, fourths, and fifths as parts of similar planar figures. Include diagrams in your explanation (<i>WP-Transactive</i>).</li> </ul>	<p>Tamil and Jenna do not automatically retrieve word meanings, formulas, or create visual images to help them remember the words. They develop reference cards with diagrams matched with terms (e.g., O circle) and formula cards (<i>Types of extensions: procedures and routines, resources and materials</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Relationships in Triangles</b> (2.9, 2.10)</p> <p><b>Quadrilateral Relationships</b> (2.9, 2.10)</p> <p><b>Other Polygons and Circles</b> (2.9, 2.10)</p> <p><b>Congruence and Similarity</b> (2.8, 2.9, 2.10, 2.11)</p> <p><b>Coordinate Geometry and Transformations</b> (2.7, 2.8, 2.9, 2.10)</p> <p><b>Measurements</b> (2.9, 2.10, 2.13)</p>	<p>How do you relate proportional and transformed figures algebraically or geometrically, including figures in a coordinate plane?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use proportional reasoning to solve real-world problems, to do indirect measurements, and to make scale drawings.</li> <li>• use reflections, translations, rotations, and dilations.</li> <li>• use relationships between a figure and its image under a transformation (congruence, similarity, size, and scale changes).</li> </ul>



## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• describe in learning logs translations that can be combined to show symmetry of geometrical figures.</li> <li>• enlarge and reduce drawings on coordinate graphs. Change one dimension and compare and record changes in learning logs.</li> <li>• develop coding systems for frieze patterns (the decorative horizontal bands sometimes found on the upper part of a wall). Design freeze patterns for classroom walls. Find and code frieze patterns in their communities. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #13 Frieze Patterns, pp. 41-42</li> <li>• use transformation techniques to explore bilateral or rotational symmetry. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i>, pp. 49-50</li> <li>• set up a coordinate system for figures on graph paper and reflect the figure over the line <math>y=x</math>. Compare coordinates of vertices of images and pre-images to discover relationships. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #3 Reflections Over the Line <math>y=x</math> on the Coordinate Plane</li> <li>• relate congruence and reflections and congruence to transformations. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i>, pp. 51-54</li> <li>• scale and use driving distances between selected cities to find shortest route. Use time for driving between selected cities to find fastest route. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, pp. 18-19</li> </ul>	<p>Sarah is a very talented mathematician and artist who likes to combine these two areas of interest whenever possible. She is especially interested in geometry and architecture and took a course in Computer-Assisted Drawing (CAD) last summer at the local community college. She is currently writing CAD programs to make geometric designs in the style of those in the Alhambra. She is working with a local interior designer who plans to use her designs for the kitchen floor in a model home she is working on. (<i>Types of extensions: purpose and appropriateness, complexity, environment, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

## Geometry

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Relationships in Triangles</b> (2.9, 2.10)</p> <p><b>Quadrilateral Relationships</b> (2.9, 2.10)</p> <p><b>Other Polygons and Circles</b> (2.9, 2.10)</p> <p><b>Congruence and Similarity</b> (2.8, 2.9, 2.10, 2.11)</p> <p><b>Coordinate Geometry and Transformations</b> (2.7, 2.8, 2.9, 2.10)</p> <p><b>Measurements</b> (2.9, 2.10, 2.13)</p>	<p>How do you relate proportional changes in volume or surface area in geometric solids?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use perimeter, circumference, and area of planar regions to determine volume and surface area of solids.</li> <li>• convert from one measure to another within the same system.</li> </ul>

## Geometry

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• rotate plane figures around a line. Identify and describe solids formed and the perpendicular cross section.</li><li>• examine sections and quarter sections of land divisions in plots of farms or cities.</li><li>• visualize solids and then construct a three- dimensional model of a tetrahedron using straws held together with string. Build cubes, and octahedrons, experimenting with one solid inside another. See <i>Geometry from Multiple Perspectives, NCTM Addenda Series, Grades 9-12</i> activity #14 Visualizing Solids, p. 45</li><li>• explore scaling. Examples:<ul style="list-style-type: none"><li>- Stand nine feet from a friend and hold a one-foot ruler vertically. Line up the top of the ruler with the top of your friend and the bottom of the ruler with the feet of your friend. If the ruler is two feet from your eyes, determine how tall your friend is? Measure the actual distance from your eyes to the top of the ruler. According to the relationships of your similar triangles, how tall is your friend? Measure your friends height. Was your calculation accurate?</li><li>- Construct enlargements of simple geometric shapes by a scale factor, utilizing grid paper and measuring from a projection point.</li><li>- Explore edges, sides, and pieces of Mobius strips, using one cut down middle, a second middle cut, or cut one third of the width.</li><li>- Find the perimeter, area, and geographic center of Kentucky, using map mounted on poster board, string, and weighted string.</li><li>- If Godzilla could be tall enough to look into the windows of a skyscraper, determine his height, width, depth, weight, and volume. Find the weight of a Lilliputian in Gulliver’s Travels who is 1/12th the height of Gulliver who weighs 185 pounds.</li></ul></li></ul>	

**Geometry**

**NOTES**

## High School Mathematics Sample Third Course

### Course Overview:

Students enrolled in this sample third course should demonstrate a mastery of Algebra I topics. Advanced algebraic topics and their application to career and real-life situations are incorporated into this course. This sample third course, along with Algebra I and geometry, cover all topics outlined in *Core Content for Assessments* and academic expectations. In addition, this sequence of courses fulfills the graduation requirements for mathematics. Content includes algebraic functions, number systems, data analysis, probability and statistics, systems of equations, sequences and series, exponential and logarithmic functions, polynomials, matrices, inequalities, factoring, quadratic formula, and graphing. Manipulatives and technology are used throughout the course.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### Guiding Questions:

- How do you use functions to model and describe real-world phenomena?
- How do you use basic skills and operands to create, solve, compare, and analyze a variety of functions?
- How do you relate subsets of the complex number system?
- How can you design and conduct experiments, draw conclusions, and make inferences, using curve fitting to model, analyze, and interpret collected data?
- How can you use measures of central tendency and standard deviation to analyze data?
- How can you use statistical graphs to display data in an appropriate manner?
- How can you use experimental and theoretical probabilities to solve real-world problems?
- How do you use characteristics and patterns evident in arithmetic and geometric sequences and series to solve real-life problems?
- How do you solve linear and nonlinear systems of equations numerically, algebraically, and graphically with and without appropriate technology?

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Functions</b> (2.8, 2.10, 2.11, 2.12)</p>	<p>How do you use functions to model and describe real-world phenomena?</p> <p>How do you use basic skills and operands to create, solve, compare, and analyze a variety of functions?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use periodic functions to describe real-world phenomena.</li> <li>• simplify expressions and perform operations with polynomials.</li> <li>• use skills learned in nonlinear equations to solve, graph, or transform absolute value, quadratic, cubic, and exponential functions.</li> <li>• explore how a function and its inverse function are related.</li> </ul>

## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Student will</b></p> <ul style="list-style-type: none"> <li>• explore sin and cosine functions through applications. Model, graph, and explore periodic phenomena (e.g., fixed points going around a circle, sea objects going in and out with the tides, monitoring temperature or smog components changing on a 24-hour cycle, the cycling of predator-prey populations).</li> </ul> <p><i>Technology suggestion: Use calculator-based laboratory equipment and graphing calculators to explore sin and cosine.</i></p> <ul style="list-style-type: none"> <li>• graph multiple functions with same real solution set on graph paper, then graph others, using graphing calculators or computer software as appropriate.</li> <li>• explore relationship between circumference and area.</li> <li>• design a figure eight railroad track to display in a hobby store. Maximize the area within the perimeter of the track using a linear and a nonlinear relationship. See <i>Algebra in a Technological World, National Council of Teachers Mathematics (NCTM) Addenda Series, Grades 9-12, pp. 78-79</i></li> </ul> <p><i>Technology suggestion: Use computer software to draw figures.</i></p> <ul style="list-style-type: none"> <li>• graph test functions that are linear, exponential, quadratic, higher degree polynomial, and rational. Summarize observations on rate of change, symmetry, number of maximum or minimum values, and special features. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12 activity #10 Similarities and Differences in Properties of Different Families of Functions, pp. 80-81</i></li> <li>• apply polynomial functions to help a Park Commission improve daily profits at their sports facility. Graph demand, revenue, cost, and profit functions. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12 activity #11 Applications of Polynomial Functions, pp. 82-83, 85-87</i></li> </ul>	<p>Clarice and Glenn as partners for this activity. Clarice has low vision and cannot discriminate details within images. Glen describes the movement of a spot on the rotation device. Clarice uses a talking graphing calculator to complete the activity (<i>Types of extensions: level of support, resources and materials, participation</i>).</p> <p>Svetlana moved from Romania to the United States three years ago. She has intermediate English skills. She still needs support to understand to comprehend verbal and written English and to determine appropriate mathematical operations. In content classes, her teacher uses scaffolding strategies. For example the language demands are reduced by providing her with an outline of problems she completes using numbers and objects she has been provided. She works with a peer to review her work and then conferences with the teacher (<i>Types of extensions: procedures and routines level of support, resources and materials</i>).</p>

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Number Systems (2.7, 2.12)</b></p>	<p>How do you relate subsets of the complex number system?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• explore structure of complex number system.</li><li>• explore imaginary numbers through solving quadratics with no real roots.</li></ul>



**High School Mathematics  
Sample Third Course**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Student will</b></p> <ul style="list-style-type: none"><li>• explore uses of imaginary numbers, for example the polar form of a complex number.</li><li>• use mappings and other conceptual organizers to delineate subsets (e.g., real, rational, irrational, integers, natural numbers). Design real-life problems that require a solution to be in one or more subset.</li><li>• explore Internet and reference books to compile historical background on significant discoveries about number sets and their impact on scientific, economic, architectural, and artistic works. Write letters to younger students explaining mathematically significant discoveries and how these discoveries enabled people to move ahead in science, economics, architecture, or artistic works. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li></ul>	

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Data Analysis (2.13)</b>	How can you design and conduct experiments, draw conclusions, and make inferences, using curve fitting to model, analyze and interpret collected data?	<b>Students will</b> <ul style="list-style-type: none"><li>• determine goodness of fit of lines and curves.</li><li>• design and conduct experiments.</li><li>• describe how sampling techniques influence results.</li></ul>

## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Student will</b></p> <ul style="list-style-type: none"> <li>• explore linear data. Draw best fit-lines for data on bike weights and jump heights. Analyze graphs to describe slope and make predictions. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity #11 Bike Weights and Jump Heights, p. 37</li> <li>• use graphs, scatterplots, graphic displays, and numerical summaries of data to determine which car is best. Recommend data set for car dealers to use to advertise cars. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity The Rating Game: Which car is the “Best”?, pp. 30-31</li> </ul> <p><i>Technology suggestion: Use graphing calculators or computer software to make comparisons.</i></p> <ul style="list-style-type: none"> <li>• explore nonlinear data. Find transformations to straighten data and find median-fit line for qualifying times. See <i>Data and Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity Qualifying Times, p. 54</li> </ul> <p><i>Technology suggestion: Use graphing calculators to explore linear, logarithmic, exponential, or power transformations.</i></p>	<p>Charlie sustained a brain injury in a car accident. Prior to his accident he was in advanced levels of math courses. Since his injury he is experiencing difficulty with fine motor activities, visual tracking, short-term memory and following directions. When graphing, he uses punch pins to represent points on the graph. He also consistently uses computer software to display his data. Directions are written explicitly and in concise language showing step-by-step procedures for Charlie to follow. The teacher conferences with Charlie daily to check his understanding and review concepts for reteaching. He needs assignments shortened and adjustments in pace to allow for additional reteaching and guided practice (<i>Types of extensions: resources and materials, procedures and routines, pace, time</i>).</p>

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Data Analysis (2.13)</b></p>	<p>How can you use measures of central tendency and standard deviation to analyze data?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• analyze and interpret data.</li><li>• use measures of central tendency and standard deviation to influence conclusions drawn from one-variable data.</li></ul>

## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Student will</b></p> <ul style="list-style-type: none"> <li>compare fast-food restaurants' financial profiles. Use databases, statistical calculators, or computers with spreadsheets or statistical software. Examine how a 3.8% raise affects the mean and standard deviation of salaries. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, pp. 91-92</li> <li>design and conduct class experiments to determine which cola students prefer. Analyze results. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity A Taste Test: Which cola do you prefer?, pp. 58-60</li> </ul> <p><i>Technology suggestion: Use computer program to analyze data.</i></p> <ul style="list-style-type: none"> <li>analyze pyramid graphs for data about population shifts. Analyze graphic display of the probabilities of dying before the age of five. Analyze maps graphically displaying data on the number of foreign born persons living in various countries of the world. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity Understanding Data: Population Characteristics, pp. 17-19</li> <li>analyze car price data. Use correlation coefficient to find association between price and age of car. Determine how much you would pay to buy an older car or what price to set for an older car in order to sell it. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity Mustang Prices, p. 53</li> <li>use a median-fit line to relate diameter of trees with the trees' age. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i>, pp. 50-52</li> </ul> <p><i>Technology suggestion: Use calculators to interpret numbers and find root mean squared error and correlation coefficients.</i></p>	<p>Sam is enrolled in Algebra II and simultaneously studying to take the AP Statistics exam on his own since the course is not offered at his high school. He takes the Algebra II exams with the rest of his class at the end of each chapter, but it is up to him to decide if he needs to do the same homework as the rest of the class. When others in the class are working on assignments or listening to lectures, Sam works on related, but more complex, algebra problems or studies one of his statistics books. Since the class is working on standard deviation, Sam is preparing a presentation for the class on applications of the normal curve. He has discussed his presentation with some of the mathematics faculty on the list serve for AP Statistics that he monitors for tips on studying statistics. His Algebra II teacher is willing to answer any statistics questions that Sam has, but he generally works and verifies problems on his own or discusses deeper issues with professors on the list serve (<i>Types of extensions: purpose and appropriateness, complexity, pace, environment, order of learning, procedures and routines, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Probability and Statistics (2.13)</b></p>	<p>How can you use statistical graphs to display data in an appropriate manner?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• analyze and interpret statistical graphs.</li><li>• develop strategies for displaying data appropriately.</li></ul>

## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• interpret data on possible success factors. Construct histograms to analyze data on the top 25 male money winners in professional golf. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity     Understanding Data: Measures of Success, p. 20</li> <li>• use data from magazines and newspapers to draw graphs (e.g., histograms, box-and-whisker plots) before using graphing calculators.</li> <li>• interpret double histogram on drunk driving rates. See <i>Data Analysis and Statistics, NCTM Addenda Series, Grades 9-12</i> activity     #6 Representing Data: Drinking and Driving, p. 21</li> </ul>	<p>Isla has been in an English speaking school for two years. She has intermediate English skills in reading, writing, speaking, listening. She converses with friends in English, however, is not fluent in using English in content areas. The teacher uses semantic maps to introduce the words necessary to understand the activity. He also uses the Clarifying Routine (University of Kansas, Center for Research on Learning) to further understanding of the concepts (<i>Types of extensions: procedures and routines, resources and materials, motivation, order of learning, purpose and appropriateness, level of support</i>).</p>

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Probability and Statistics (2.13)</b></p>	<p>How can you use experimental and theoretical probabilities to solve real-world problems?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare experimental and theoretical probability.</li> <li>• use geometric probability to design, conduct, or simulate experiments to solve problems.</li> </ul>



## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use area models (e.g., circles within squares) to explore varying probability relative to different models for dart throwing with multiple targets. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i> activity Dart Throwing, pp. 13-16</li><li>• determine how to find the number of possible different sequences in a 52-card deck of cards. If you could list one sequence a second, how long would it take to list all possible sequences? Determine the number of possible 13-card bridge hands. Then find the odds for special hands, such as a 13-card suit, the thirteen top honors cards, or four aces.</li></ul> <p><i>Technology suggestion: Use a computer to calculate the arrangements.</i></p> <ul style="list-style-type: none"><li>• explore the chances that two or more persons in a group share a birthday. Graph the curve. Among 10 people the probability is near <math>1/10</math>, among 25 it is near <math>1/2</math>. Research to determine which of the United States Presidents share birthdays and which died on the same date.</li><li>• compare samples spaces and probability of different sums, using a variety of polyhedral dice.</li></ul> <p><i>Technology suggestion: Use graphing calculator or computer as a random number generator. Generate binomial distribution.</i></p>	

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Sequences and Series</b> (2.7, 2.8, 2.9, 2.11, 2.12)</p>	<p>How do you use the characteristics and patterns evident in arithmetic and geometric sequences and series to solve real-life problems?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use arithmetic and geometric means to solve problems.</li> <li>• explore characteristics of finite and infinite series such as convergence, divergence, and limits.</li> <li>• use patterns developed for arithmetic sequences to develop patterns for arithmetic series.</li> <li>• use patterns developed for geometric sequences to develop patterns for geometric series.</li> </ul>

## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use sequences to find number of diagonals in a convex polygon. Generalize rules for the number of diagonals of an n-sided convex polygon. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, p. 59</li> <li>• study occurrences of Fibonacci numbers in nature. Study sequences and form a recursive definition for the terms of the sequence. Use calculator to find 30th term of sequence. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, p. 59</li> <li>• use matrices to represent figures drawn on graph paper, then transform figures and compare to matrix multiplication. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #4 Transforming Triangles, pp. 19-20</li> <li>• use matrices to represent different toys manufactured by a company, including labor, orders, cutting time, sewing hours, and finishing hours. Use matrix multiplication to total labor and orders. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i> activity #3 Manufacturing Toys, pp. 16-18</li> <li>• investigate a sequence sample by folding a sheet of paper in half. Compare sizes at each folding to that of the original paper. Compare the thickness of the paper folded at each stage to that of the original. Compare sizes and thicknesses to characteristics of sequences and series.</li> </ul>	<p>Lynn attended the Ross Young Scholars program at Ohio State last summer where she studied number theory and learned to “think deeply about simple things.” She has learned to investigate patterns of all types and is fascinated with Fibonacci numbers. She will read several historical accounts about the development of this pattern and its many applications and prepare a presentation on Fibonacci numbers for the next meeting of the Mathematics Club. Many of the club members are currently sharing some of their latest research in preparation for the American High School Mathematics Exam (AHSME) (<i>Types of extensions: purpose and appropriateness, complexity, environment, resources and materials, application and demonstration of knowledge, level of support, motivation</i>).</p>

**High School Mathematics  
Sample Third Course**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Systems of Equations (2.7, 2.8)</b></p>	<p>How do you solve linear and nonlinear systems of equations numerically, algebraically, and graphically with and without appropriate technology?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• solve systems of equations numerically, graphically, and/or algebraically.</li> <li>• solve systems using matrices with a calculator and/or computer.</li> <li>• extend skills used to solve systems of linear equations to solve nonlinear systems of equations.</li> </ul>

## High School Mathematics Sample Third Course

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use matrices to keep track of rental cars. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Keeping Track of Rental Cars, pp. 107-108</li> <li>• use system of equations to solve real-life problems involving baseball-game promotions. Solve with matrices and graphs. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i> activity Baseball-Game Promotion, pp. 109-110</li> <li>• use graphing utility to solve problems designed around launching two toy rockets, varying speed over time. See <i>A Core Curriculum, NCTM Addenda Series, Grades 9-12</i>, p. 83</li> </ul> <p style="padding-left: 40px;"><b>Technology suggestion:</b> Use graphing calculators or graphing software to solve problems.</p> <ul style="list-style-type: none"> <li>• use matrix squaring and cubing to find the number of paths on a discrete mathematics graph. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i>, pp. 14-15</li> <li>• use matrix multiplication to predict the probability of rain occurring on successive days. See <i>Connecting Mathematics, NCTM Addenda Series, Grades 9-12</i>, p. 15</li> <li>• analyze nutritional content of various snack mixes comprised of chocolate chips and raisins. See <i>Algebra in a Technological World, NCTM Addenda Series, Grades 9-12</i>, pp. 88-92</li> </ul>	<p>A small group of students have formed a model rocket club, and they design and build model rockets to reach ever-increasing heights. They will contact NASA scientists to collect real data from space shuttle launches and organize and graph that data to better compare it to the data collected from the model rockets. They will interview NASA scientists about possible careers in aerospace engineering and related areas and use the Internet to explore colleges that have strong programs as recommended by the scientists. They investigate some problems in <i>Mission: Mathematics</i> from NCTM to expand and deepen their knowledge in this area and will include the best of these in their mathematics working folders (<i>Types of extensions: purpose and appropriateness, complexity, environment, procedures and routines, resources and materials, demonstration of knowledge, level of support, participation, motivation</i>).</p>

**High School Mathematics  
Sample Third Course**

**NOTES**

## High School Mathematics Integrated Math I, II, and III

The guiding and essential questions from Algebra I, geometry, and sample third course are listed in the chart below. The placement of these questions in the appropriate Integrated Math course is indicated along the right side of the chart.

<b>Algebra I: Guiding and Essential Questions</b>	<b>Integrated Math</b>		
	<b>I</b>	<b>II</b>	<b>III</b>
How do you use real numbers to solve one- and two-variable linear equations?	X	X	X
How do you relate formulas, tables, graphs, and equations of problems represented by linear functions to each other?	X		
How do you relate formulas, tables, graphs, and equations of problems represented by non-linear functions relate to each other?		X	X
How do you use different parameters to affect graphs of problems represented by linear functions?	X		
How do you use different parameters to affect graphs of problems represented by non-linear functions and as to compare graphs?		X	X
How do you use equations and lines to model relationships between two real-world quantities?	X		
How do you use curves to model relationships between two real-world quantities?		X	X
How can you use ratios and proportions to connect real-world and mathematical ideas?	X	X	X
How do data gathering, bias issues, analysis and representations affect interpretations and conclusions about problems involving data?			X
How can you use sequences to connect real-world and mathematical ideas?	X		
How can you use combinations and permutations to count discrete quantities?	X	X	

**High School Mathematics  
Integrated Math I, II, and III**

<b>Geometry: Guiding and Essential Questions</b>	<b>Integrated Math</b>		
	<b>I</b>	<b>II</b>	<b>III</b>
How do you relate spatial properties of points, lines, planes, angles, and solids to each other?	X	X	X
How can you use appropriate tools to describe, sketch, and construct two-dimensional figures?	X		
How can you use appropriate tools to describe, sketch, and construct three-dimensional figures?		X	X
How do you relate algebraic procedures and geometric concepts?	X	X	X
How can you use relationships in triangles to solve problems such as congruency, similarity, right-triangle trigonometry, and the Pythagorean theorem?	X	X	
How can you use properties of circles and polygons, including special quadrilaterals, to classify and solve problems?		X	X
How do you relate proportional and transformed figures algebraically or geometrically, including figures in a coordinate plane?		X	X
How do you relate proportional changes in volume or surface area in geometric solids?			X



**High School Mathematics  
Integrated Math I, II, and III**

<b>Sample Third Course: Guiding and Essential Questions</b>	<b>Integrated Math</b>		
	<b>I</b>	<b>II</b>	<b>III</b>
How are functions you use to model and describe real-world phenomena?	X	X	X
How do you use basic skills and operands to create, solve, compare, and analyze a variety of functions?		X	X
How do you relate the subsets of the complex number system?			X
How can you design and conduct experiments, draw conclusions, and make inferences using lines of best fit to model, analyze, and interpret collected data?	X		
How can you design and conduct experiment conclusions and make inferences using curve fitting to model, analyze and interpret collected data?		X	X
How can you use measures of central tendency and standard deviation to analyze data?	X		
How can you use statistical graphs to display data in an appropriate manner?	X		
How can you use experimental and theoretical probabilities to solve real-world problems?	X	X	X
How do you use characteristics and patterns evident in arithmetic and geometric sequences and series used to solve real-life problems?		X	X

## Mathematics Glossary

**Absolute value:** The absolute value of a number is its distance from zero on a number line. If  $x$  is the coordinate of a point on a number line, the distance from that point to the origin is called the absolute value of  $x$ , written  $|x|$ . This distance is always either positive or zero.

**Adjacent vertices:** Two vertices that are joined by an edge.

**Algebra:** The generalization of the ideas of arithmetic. A branch of mathematics where unknown numbers can be represented by letters and their values found to solve numbers.

**Algorithm:** A systematic scheme for carrying out computations, usually consisting of a set of rules or steps, the long division algorithm is an example.

**Area:** The number of square units in a region.

**Arithmetic sequence:** A sequence in which each term is equal to the preceding term plus a constant. This constant is called the common difference.

**Axis of symmetry:** A line over which an image mirrors itself.

**Best-fit line:** The linear equation that meets the agreed-upon criteria for a set of data.

**Binomial:** A polynomial with two terms, for example  $2x + 3$ .

**Box and whisker plot:** A graphic way of showing a summary of data using the median, quartiles, and extremes of the data. A box and whisker plot makes it easy to see where the data are spread out and where they are concentrated. The longer the box the more the data are spread out.

**Coefficient:** In algebra, the numerical factor of a term (e.g., in  $4x^2$ , 4 is the coefficient).

**Coefficient of correlation:** A measure of the strength of the linear dependency of  $y$  on  $x$ . It can be used to decide if a line is a good model of the data or of the accuracy of any prediction based on that linear model.

**Combination:** A selection of objects from a set in which order is not important.

**Complex number:** The sum of a real and an imaginary number written in the form  $a + bi$ .

**Composition of functions:** The process of using the output of one function as the input for another function.

**Compound interest:** Interest paid on earned interest.

**Congruent:** Two geometric figures that are the same shape and size.

**Cosine:** The cosine of an acute angle in a right triangle is the ratio of the length of the adjacent leg to the length of the hypotenuse.

## Mathematics Glossary

Counting principle: If there are  $n_1$  ways to make a first choice,  $n_2$  ways to make a second choice,  $n_3$ , ways to make a third choice, and so on, then the product  $n_1 \cdot n_2 \cdot n_3 \cdot \dots$  represents the total number of different ways (outcomes) in which the entire sequence of choices can be made.

Data: A set of numerical information.

Data analysis: A process of deriving information from data.

Degree: The degree of a polynomial is the highest power of a variable in the expression. If the terms contain more than one variable, the degree is the highest value among the sums of the exponents in the individual terms.

Dependent events: When the occurrence of one event has an effect on the occurrence of a following event, the events are said to be dependent.

Deviation: The directed distance from each data value to the mean. Values below the mean have a negative deviation, and values above the mean have a positive deviation.

Discrete graph: A graph containing unconnected points.

Distance between two points: The distance between any two points located at  $(x_1, y_1)$  and  $(x_2, y_2)$  is the square root of the quantity  $[(x_2 - x_1)^2 + (y_2 - y_1)^2]$

Distance formula: The formula used in coordinate geometry to find the distance between two points.

Domain of function: The set of all first members (elements) of a function.

Equation: A mathematical sentence with an equal sign.

Experimental probability: Probability that is based on trials and observations or simulation of the event.

Explicit formula: A formula for a sequence or the sum of a series that defines a rule for calculating a term or sum based on the term's number.

Factored form: The form of a polynomial equation written as the product of linear factors. In  $y = A(x - R_1)(x - R_2)$  the roots are at  $R_1$  and  $R_2$ .

Fractal: A shape that is self-similar; that is, it contains infinitely many exact replicas of itself on various scales.

Frequency: The number of times an event has occurred.

Function: A set of ordered pairs such no two ordered pairs have the same first member.

## Mathematics Glossary

**Generalization:** A statement that expresses some relationship that is true for all numbers in a specified set.

**Geometric mean:** The geometric mean of two numbers is the square root of their product.

**Geometric progression:** Also called *Geometric sequence*. A sequence of numbers in which each succeeding term is obtained by multiplying the preceding term by the same number.

**Geometric sequence:** A numeric sequence in which each term is equal to the preceding term multiplied by a constant, or  $u_n = r \cdot u_{(n-1)}$ . The constant  $r$  is called the **common ratio**.

**Graph theory:** The use of diagrams involving vertices and edges in finding mathematical solutions to problems.

**Half-life:** The length of time needed for a value to decrease to half of its original amount. This term often refers to the decay of a radioactive material.

**Histogram:** A bar graph in which the length of the bars shows the frequency of data values.

**Imaginary number:** The square root of a negative number.

**Independent variable:** In a function of two variables, one variable is dependent and the other independent.

**Inductive reasoning:** Reaching a conclusion on the basis of patterns found in a number of observations.

**Interquartile range:** The difference between the lower (first) and upper (third) quartiles (the length of the box in a box plot).

**Irrational number:** A number whose decimal expansion is non-repeating and nonterminating, for example, 2 and pi.

**Least-squares line:** A best-fit line determined by calculating the line with the minimum sum of the squares of the residuals.

**Limit:** A central concept of calculus indicating a number that a sequence of numbers approaches. A value a function approaches but never attains.

**Limiting value:** The long-run value of a sequence or a series. The value as  $n$  grows infinitely large.

**Line of symmetry:** A line that divides a graph into two common congruent pieces. If the graph could be folded along this line, the two halves would lie directly on top of each other.

**Linear:** Having to do with a line, a first-degree expression, a first-degree equation, or a first-degree polynomial.

## Mathematics Glossary

**Linear function:** A function that can be expressed in the form of a linear equation (an equation in which a variable is raised to the first power).

**Logarithm:** In the equation  $a = b^x$ , the logarithm base  $b$  of  $a$  provides the value of the exponent,  $\log_b a = x$ . The logarithm is the exponent for  $b$  to give the value  $a$ .

**Mathematical model:** An equation or rule that describes a relationship that closely fits a set of data.

**Matrix:** A rectangular array of numbers. The dimensions of a matrix are specified by the number of rows and columns it contains. A  $2 \times 3$  matrix contains 2 rows and 3 columns.

**Maximum value:** The highest (largest, greatest) value.

**Mean:** The average value calculated as the sum of all the values divided by the number of values in the set.

**Measure of central tendency:** A single value used to characterize or represent an entire set. Examples include the mean, the median, and the mode.

**Median:** The middle number of an ordered set. If the set has an even number of values, then the median is the average of the two middle values.

**Mode:** The value that occurs most frequently in a set.

**Normal distribution:** A symmetric and “bell-shaped” distribution. It is the limiting shape of the binomial distribution as  $n$  grows increasingly large.

**Outlier:** A value in a data set that is uncharacteristic of most of the data.

**Period:** The length of the  $x$ -interval required for the graph of one complete cycle before the graph begins to repeat itself.

**Periodic function:** A function whose graph repeats over and over again.

**Permutation:** An arrangement or selection of objects from a set when order is important.

**Polynomial:** An expression made up of the sum of terms whose variables have only positive whole-number powers.

**Probability:** The chance of an event occurring. The number of favorable outcomes divided by the total number of all possible outcomes. If you toss a coin 100 times and a head lands up 56 times, the experimental probability of heads landing up is  $56/100$  or  $14/25$ . The theoretical probability of heads landing up is 1 out of 2 or  $1/2$ .

## Mathematics Glossary

**Proportion:** A statement of the form  $a/b = c/d$ . Each of  $a$ ,  $b$ ,  $c$ ,  $d$ , is called a term of the proportion. In a proportion,  $a$  and  $b$  (the first and fourth terms) are called the extremes and  $b$  and  $c$  (the second and third terms) are called the means. The product of the means equals the product of the extremes.

**Pythagorean theorem:** A relationship between the lengths of the sides in a right triangle.

**Quadratic equation:** A polynomial equation containing a variable to the second degree.

**Quartile:** Part of a data set that contains 25% of the data. The median of the entire set of data values is called the second quartile. The median of the data values below the median of the set is called the first quartile. The median of the data values above the median is called the third quartile.

**Random:** Happening by chance.

**Random numbers:** Numbers that when generated are equally likely to occur and do not form a pattern in the sequence of numbers.

**Range of a relation:** The set of possible values for the second coordinates in a relation.

**Range of a data set:** The absolute value of the difference between the largest value and the smallest value of a data set.

**Recursive definition:** A set of statements that specifies one or more initial terms and defines the  $n$ th term in relation to one or more of the preceding terms.

**Relation:** A correspondence between an independent variable and a dependent variable.

**Residual:** The difference between the  $y$ -value of a data point and the  $y$ -value of the equation with the same  $x$ -value. Points below the graph of the equation have negative residuals, and points above the graph have positive residuals.

**Root:** The  $x$ -value where the graph of an equation crosses the  $x$ -axis. Same as zeros of an equation.

**Sample space:** In probability, the set of all possible outcomes of an experiment.

**Scattergram:** A graph that shows the relationship between two quantities.

**Scientific notation:** Any number written as a number between 1 and 10, multiplied by a power of 10.

**Sequence:** A set of elements in a specific order determined by a rule or formula.

**Series:** The sum of the terms of a sequence. The  $n$ th partial sum,  $S_n$ , of a series is the sum of the first  $n$  terms of its companion sequence.

**Sine:** The sine of an acute angle in a right triangle is the ratio of the length of the opposite leg to the length of the hypotenuse.

## Mathematics Glossary

**Skewed:** To be distributed, or stretched, in a non-symmetric way.

**Slope:** A ratio of the rate of increase (or decrease) of a line. The slope of a line is  $(\text{change in } y) / (\text{change in } x)$

**Standard deviation:** The square root of the variance. It is a measure of spread used for single-variable data.

**Statistics:** Various methods used to obtain numbers to characterize a data set.

**Stem-and-leaf plots:** A display of a set of data in which each piece of data is grouped together on a specific row and arranged in two columns.

**System of equations:** Two or more equations that are solved or studied simultaneously.

**Tangent:** The tangent of an acute angle in a right triangle is the ratio of the length of the opposite leg to the length of the adjacent leg.

**Theoretical probability:** Probability that is based on calculation or physical properties of the event without actually performing or simulating.

**Variance:** The mean value of the squares of the deviations from the mean of the data.

**X-intercept:** The point where a graph crosses the x-axis.

**Y-intercept:** The point where a graph crosses the y-axis.

**Zero:** The x-values that make an expression have a zero value. Same as roots and x-intercept.

## Mathematics Teacher Resources

### Publications: Books

- Bezuk, N., and M. Bieck. "Current Research in National Numbers and Common Fractions: Summary and Implications for Teachers." In *Research Ideas for the Classroom: Middle Grades Mathematics*, edited by D.T. Owens, 118-136. Reston, VA: National Council of Teachers of Mathematics, 1993.
- Bezuk, N., and K. Cramer. "Teaching about Fractions: What, When, and How?" In *New Directions for Elementary School Mathematics: 1989 Yearbook*, edited by P. R. Trafton, 156-157. Reston, VA: National Council of Teachers of Mathematics, 1989.
- Bright, G., and J. Harvey. "Using Games to Teach Fraction Concepts and Skills." In *Mathematics for the Middle Grades (5-9); 1982 Yearbook*, edited by L. Silvey, 205-216. Reston, VA: National Council of Teachers of Mathematics, 1982.
- Burrill, G., J. Burrill, P. Coffield, D. Gretchen, J. Lange, D. Resnick, and M. Siegel. *Data Analysis and Statistics Across the Curriculum: Addenda Series, Grades 9-12*. Reston VA: National Council of Teachers of Mathematics, 1998.
- Burton, G. *Fifth Grade Book: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Burton, G. *Fourth Grade Book: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Burton, G. *Kindergarten Book: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Burton, G. *Second-Grade Book: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Burton, G. *Sixth-Grade Book: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Burton, J. *Number Sense and Operations: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1993.
- Burton, G. *Third-Grade Book: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Coburn, T. *Patterns: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1993.
- Coxford, A. *Geometry from Multiple Perspectives: Addenda Series, grades 9-12*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Curcio, F., and N. Beznuk. *Understanding Rational Numbers and Properties: Addenda Series, Grades 5-8*. Reston, VA: National Council of Teachers of Mathematics, 1992.
- Del Grande, J. *Geometry and Spatial Sense: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1993.



## Mathematics Teacher Resources

- Edwards, E., ed. *Algebra for Everyone*. Reston, VA: National Council of Teachers of Mathematics, 1990.
- Froelich, G., K. Bartovich, and P. Foerster. *Connecting Mathematics: Addenda Series, Grades 9-12*. Reston, VA: National Council of Teachers of Mathematics, 1998
- Fuys, D., D. Geddes, and Tischler. *The Van Hiele Model of Thinking in Geometry Among Adolescents: Journal for Research in Mathematics Education, Monograph Number 3*. Reston, VA: National Council of Teachers of Mathematics, 1988.
- Geddes, D. *Geometry in the Middle Grades: Addenda Series, Grades 5- 8*. Reston, VA: National Council of Teachers of Mathematics, 1992.
- House, P. *Connecting Mathematics across the Curriculum (1995 Yearbook)*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- House, P. *Mission Mathematics: Linking Aerospace and the NCTM Standards. Mission Mathematics: 9-12*. Reston, VA: National Council of Teachers Mathematics, 1997.
- Hynes, M. *Ideas: NCTM Standards-Based Instruction, Grades K-4*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Hynes, M. *Ideas: NCTM Standards-Based Instruction, Grades 5-8*. Reston, VA: National Council of Teachers of Mathematics, 1998.
- Kieran, C. and L. Chalouh. "Pre-algebra: The Transition from Arithmetic to Algebra." In *Research Ideas for the Classroom: Middle Grades*, edited by D. T. Owens, 179-198. Reston, VA: National Council of Teachers of Mathematics, 1993.
- Kiren, T. "Personal Knowledge of Rational Numbers: Its Intuitive and Formal Development." In *J. Number Concepts and Operations in the Middle Grades*, edited by J. Hiebert and M. Behr, 162-181. Reston, VA: National Council of Teachers of Mathematics, 1988.
- Lindquist, M., ed. *Learning and Teaching Geometry K-12: 1987 Yearbook*. Reston, VA: National Council of Teachers of Mathematics, 1987.
- Lindquist, M. *Making Sense of Data: Addenda Series, Grades K-6*. Reston, VA: National Council of Teachers of Mathematics, 1987.
- Meiring, S., R. Rubinstein, J. Schultz, J. Lange, and D. Chambers. *A Core Curriculum: Making Mathematics Count for Everyone*. Reston, VA: National Council of Teachers of Mathematics, 1992.
- National Council of Teachers of Mathematics. *Assessment Standards for School Mathematics*. Reston, VA: National Council of Teachers of Mathematics, 1995.
- National Council of Teachers of Mathematics. *Curriculum and Evaluation Standards for School Mathematics*. Reston, VA: National Council of Teachers of Mathematics, 1989.
- National Council of Teachers of Mathematics. *A Framework for Constructing a Vision of Algebra*, Reston, VA: National Council of Teachers of Mathematics, 1994.
- National Council of Teachers of Mathematics. *Professional Standards for Teaching Mathematics*. Reston, VA: National Council of Teachers of Mathematics, 1991.

## Mathematics Teacher Resources

National Council of Teachers of Mathematics. *Multicultural and Gender Equity in the Mathematics Classroom: The Gift of Diversity*. Reston, VA: National Council of teachers of Mathematics, 1997.

National Research Council. *Everybody Counts*. Washington, DC: National Academy Press, 1989.

National Research Council. *Reshaping School Mathematics*. Washington, DC: National Academy Press, 1990.

Phillips, E. *Patterns and Functions: Addenda Series, Grades 5-8*, Reston, VA: National Council of Teachers of Mathematics, 1991.

Reys, B. *Developing Number Sense in the Middle Grades: Addenda Series, Grades 5-8*, Reston, VA: National Council of Teachers of Mathematics, 1991.

Schoenfeld, A. 1992. "Learning to think mathematically: Problem solving, metacognition, and sense-making in mathematics." In D. Grouw (ED.), *Handbook of Research on Mathematics Teaching and Learning*. (pp. 334-370). New York: Macmillan

Schoenfeld, A. (Ed.) 1994. *Mathematical Thinking and Problem Solving*. Hillsdale, NJ: Lawrenceburg Erlbaum Associates

Schaughnessy, M. & Bergman, B. 1993. "Thinking about uncertainty: Probability and statistics." In Wilson, P. (Ed.), *Research Ideas for the Classroom: High School Mathematics* (pp. 177-197). New York: Macmillan Publishing Company.

Shulte, A., ed. *Teaching Statistics and Probability. 1981 Yearbook*. Reston, VA: National Council of Teachers of Mathematics, 1981.

Shulte, A. and J. Smart, eds. *Teaching Statistics and Probability*. Reston, VA: National Council of Teachers of Mathematics, 1992.

Silver, Edward A. "Algebra for All." *Mathematics Teaching in the Middle School*. 2(4) February 1997: 204-207

Usiskin, Z. "Conceptions of School Algebra and Uses of Variables." In *The Ideas of Algebra, K-12*, edited by A. Coxford and A. Schult. Reston, VA: National Council of Teachers of Mathematics, 1988.

Wagner, S. *Research Issues for the Classroom*. Reston, VA: National Council of Teachers of Mathematics, 1998.

Wagner, S. and C. Kieran, eds. *Research Issues on the Learning and Teaching of Algebra*. Reston, VA: National Council of Teachers of Mathematics, 1989.

Zawojewski, J. *Dealing with Data and Chance: Addenda Series, Grades 5-8*. Reston, VA: National Council of Teachers of Mathematics, 1998.

## Publications: Periodicals

National Council of Teachers of Mathematics. *Mathematics Teacher* (Secondary Journal 9, issues per year). Reston, VA: National Council of Teachers of Mathematics.

## Mathematics Teacher Resources

National Council of Teachers of Mathematics. *Mathematics Teaching in the Middle School* (Middle Grades Journal, 8 issues per year). Reston, VA: National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. *Teaching Children Mathematics* (Pre-K and Elementary Grades Journal, 9 issues per year). Reston, VA: national Council of Teachers of Mathematics.

### Internet Resources

National Science Education Standards

<http://www.nap.edu/readingroom/books/nse/html/>

National Council of Teachers of Mathematics. Curriculum and Evaluation Standards for School Mathematics

<http://www.enc.org/reform/index.htm>

National Council of Teachers of Mathematics. Standards 2000

<http://www.nctm.org/standards2000/index.html>

Developing Education Standards - includes Links to National Standards and State Standards.

<http://ccsso.org/edres.html>

<http://putwest.boces.org/standards.html>

NASA

<http://www.nasa.gov>

JASON Project

<http://www.jason.org>

University of Kentucky

<http://www.uky.edu/Libraries>

The Annenberg/CPB Projects Learner Online

<http://www.learner.org/channel>

Mid-Continent Regional Education Laboratory

<http://www.mcrel.org>

Kentucky Educational Television

<http://www.ket.org>

A Teacher's Guide to the U.S. Department of Education

<http://www.ed.gov/pubs/TeachersGuide/>

ASCD, Association for Supervision and Curriculum Development

<http://www.ascd.org>

Federal Resources for Educational Excellence, (FREE)

<http://www.ed.gov/free>

## Mathematics Teacher Resources

Public Broadcasting System  
<http://www.pbs.org>

Tapped In  
<http://www.tappedin.org>

The Math Forum  
<http://forum.swarthmore.edu>

### Videos

Burlington, S. *About Teaching Math: A Video Library, K-4. The Annenberg/CPB Math and Science Collection.* VT: WGBH (24 tapes). 1995

### Professional Organizations

Appalacian Rural Systemic Initiative Resource Collaborative  
University of Kentucky, Breckinridge Hall Room 413, Lexington, KY 40506-0056

National Council of Teachers of Mathematics  
1906 Association Drive, Reston, VA 22091 (703) 620-9840 [www.nctm.org](http://www.nctm.org)

National Research Council  
2101 Constitution Avenue, NW, Washington, DC 20055 (800) 624-6242

National Science Foundation  
Directorate for Education and Human Resources, 4201 Arlington Boulevard, Arlington, VA 22230

National Science Teachers Association  
1840 Wilson Blvd., Arlington, VA 22201-3000 (800) 722-6782

Oak Ridge National Laboratory  
Office of Science Education and External Relations, P. O., Box 2008, 105 Mitchell Road, MS 6496 Oak Ridge, TN 37831 (423) 576-3886

NASA  
Education Division, Washington, DC 20546-000 (202) 358-1531

Challenger Learning Center of Kentucky  
C/O Hazard Community College, 601 Main Street, Hazard, KY 41701

For additional resources, see the Kentucky Department of Education's Web Site at [www.kde.state.ky.us](http://www.kde.state.ky.us) and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12.*

## **Mathematics Teacher Resources**

### **Additional Resources in Mathematics and Science Education**

U.S. Department of Education funded resources

Appalachia Educational Laboratory (KY, TN, VA, WV)  
P. O. Box 1348  
Charleston, WV 25325-1348  
(800) 624-9120  
<http://www.ael.org>

Eisenhower National Clearinghouse for Mathematics and Science Education (All States)

1929 Kenny Road  
Columbus, OH 43210  
(614) 292-7784  
<http://www.enc.org>

Eisenhower Regional Math and Science Consortium at AEL (KY, TN, VA, WV)

1700 North Moore Street, Suite 1275  
Arlington, VA 22209  
(800) 624-9120  
<http://www.ael.org/eisen>

Western Kentucky University

Department of Physics and Astronomy  
Bowling Green, KY 42101  
Coordinator: Sandra Clements or Karen Hackney  
(502) 745-5003  
FAX (502) 745-2014  
E-mail: [clemes@pulsar.wku.edu](mailto:clemes@pulsar.wku.edu) (Karen's E-mail: [ksgc@wkuvxl.wku.edu](mailto:ksgc@wkuvxl.wku.edu))  
Web URL: <http://www.wku.edu/Dept/Academic/Ogden/Phyast/>

Montgomery County Math/Science Center

3570 Indian Mound Drive  
Mt. Sterling, KY 40353  
Coordinator: Tom Hunt or Sherri Lynn Spencer  
(606) 497-8701  
FAX (606)497-8719  
E-mail: [thunt@montgomery.K12.ky.us](mailto:thunt@montgomery.K12.ky.us) (Sherri's E-mail: [sspencer@montgomery.k12.ky.us](mailto:sspencer@montgomery.k12.ky.us))  
Web URL: <http://www.montgomery.K12.ky.us>

East Kentucky Center for Science, Mathematics, and Technology

100 Resource Drive  
Prestonburg, KY 41653  
Coordinator: Duane Sanders or Pauletta Burke  
(606)886-0205  
FAX (606) 886-1509  
E-mail: [ddsanders@eastky.net](mailto:ddsanders@eastky.net) (Pauletta's E-mail: [pburke@rsc8.kde.state.ky.us](mailto:pburke@rsc8.kde.state.ky.us))

# **Physical Education**



# **Required Credits**





## **High School Physical Education Traditional Model**

### **Course Overview:**

This 1/2-credit high school physical education course is designed to provide students with opportunities to participate in various individual, dual, and team sports and activities. Emphasis is placed on refining skills and establishing activity regimes that will continue throughout life. Through regular physical activity, students have opportunities to improve techniques and increase knowledge of rules needed for participation. They also have chances to maintain or improve individual fitness.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How do health-maintenance strategies improve my physical health?
  
- How can I improve my motor skills?
  
- How will participation in long-term fitness activities benefit me?

**High School Physical Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Physical Wellness (2.31)</b></p>	<p>How do health-maintenance strategies improve my physical health?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• describe how the benefits of exercise are interrelated.</li> <li>• apply principles of exercise,</li> <li>• develop health-related fitness.</li> <li>• apply nutritional concepts in meal planning.</li> <li>• establish, develop, and implement a lifetime personal fitness and activity plan.</li> </ul>

## High School Physical Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• assess personal fitness levels (e.g., endurance, flexibility, cardiovascular, weight). Describe in journals their personal-wellness goals. Design and implement fitness plans (e.g., exercise, diet) to reach personal goals. Evaluate progress at end of course. Compare in journals physical fitness before and after implementation of fitness plans. Use short-term plans to devise programs designed for lifetime fitness.</li> <li>• examine human growth and development to identify fitness needs of people from different age groups (e.g., child, teenager, adult, retiree). Design fitness plans targeting each age group. Write scripts and create video tapes demonstrating exercise techniques and suggested meal plans for each group.</li> <li>• investigate benefits of exercise (e.g., fitness, disease prevention, stress relief). Design newsletters for teens describing recommended exercises and specific benefits. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> <li>• interview coaches of sports teams (e.g., football, track) about suggested diets for athletes. Develop meal plans designed to meet needs of each sports' athletes. Create brochures for each coach and athlete explaining meal plans. <i>(WP-Transactive).</i></li> </ul>	<p>Tim enjoys physical activity. He excels when he is able to verbalize his expectations. His writing skills are below average. Tim will be paired with a student who has strengths in writing skills. Together they will record goals on spreadsheets and enter baseline data and daily results of fitness activity. Using their results the partners will design a lifetime fitness program <i>(Types of extensions: purpose and appropriateness, complexity).</i></p> <p>Sara excels in the area of reading and writing. Her speech is laborious due to loss of hearing and she communicates through sign language. Working as a group, students will design meal plans for each age group. Sara's goal is to design subtitles using sign language <i>(Types of extensions: purpose and appropriateness, complexity, level of support, demonstration of knowledge).</i></p>

**High School Physical Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Psychomotor Development (2.34)</b></p>	<p>How can I improve my motor skills?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• apply movement concepts in various games, sports, and rhythmic activities.</li> <li>• demonstrate principles of motor skill refinement.</li> <li>• analyze specialized movement sequences and patterns to make recommendations for improvement.</li> <li>• develop specialized motor skills for participation in rhythmic movement; individual, dual, and team games; and activities.</li> <li>• refine techniques to achieve consistency in performance of fundamental skills in games and activities.</li> <li>• analyze object manipulation to make recommendations for improvements.</li> </ul>

## High School Physical Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>participate in team and individual sports and activities (e.g., volleyball, softball, basketball, throwing, catching, tennis, badminton, golf) demonstrating correct movement techniques and adherence to rules of play. Analyze movement via videotapes to help improve performance. Work with partners to perfect techniques (e.g., golf swing, catching, throwing).</li> <li>use elements of dance (e.g., space, time, force, levels, pathways) to develop creative movement sequences. Participate in rhythmic activities and dances demonstrating movement concepts, sequences, and patterns.</li> </ul> <p><i>Technology suggestion: Use videotapes to critique peer movement.</i></p> <ul style="list-style-type: none"> <li>use Internet to research biomechanics of movement. Identify major muscle groups used. Record use of muscles through classroom movements and activities. Illustrate use of one muscle group in posters.</li> <li>use culturally different types of music to develop dance sequences. Demonstrate for class.</li> </ul>	<p>Peter follows simple directions with verbal cues. He is well below his same-age peers physically and cognitively. Peter is slightly overweight and has low muscle tone but can perform basic sport skills and competes in community sports programs. As part of his vocational goal, Peter operates the VCR to review proper techniques for specific sports and will be cued by peers for its proper operation (<i>Types of extensions: complexity, magnitude, resources and materials</i>).</p> <p>Jan is above average academically but she has a congenital heart defect, which combined with her mobility difficulties, sometimes requires her to use a wheelchair. Jan is able to maneuver her chair independently but tires easily when walking long distances. Jan uses her chair when performing certain dance sequences, (e.g., standing, walking around her chair, sitting down, wheeling) (<i>Types of extensions: complexity, environment of learning, level of support</i>).</p>

**High School Physical Education  
Traditional Model**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Lifetime Activity (2.35)</b></p>	<p>How will participation in lifetime fitness activities benefit me?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• describe benefits of regular participation in physical activities.</li> <li>• apply strategies for successful participation in lifetime activities and sports.</li> <li>• refine techniques in lifetime activities and sports to enhance performance.</li> <li>• demonstrate sportsmanship applicable to participants and spectators.</li> </ul>

## High School Physical Education Traditional Model

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate what is meant by good sportsmanship. Use graphic organizers to compare sports heroes' actions. Include those that are considered to be examples of good and poor sportsmanship. Create posters on the do's and don'ts of good sportsmanship. Write sports opinion columns for school newspapers (<i>WP-Transactive</i>). Role-play acceptable sportsmanship behaviors of different sports.</li> <li>• plan and implement activity day on which teachers and students compete.</li> <li>• examine community activity centers (e.g., YMCA). Prepare consumer guides explaining benefits of these centers and resources they provide. Write letters to community leaders persuading them to fund more centers (<i>WP-Transactive</i>).</li> <li>• develop and plan community activities (e.g., bowl-a-thon, marathon). Research location, cost, volunteer resources, and safety. Plan for involvement of all age groups. Produce written proposals containing all pertinent information and present to local government for approval.</li> </ul> <p><i>Technology suggestion: Use multimedia resources to make presentations.</i></p>	<p>Sue Ann, although academically on level with her peers, is visually and auditorily impaired. She does have some speech; however, it takes time to understand her. Through the use of her lead dog and an assistant, she is able to visit various community recreation centers to determine their facilities and accessibility. Sue Ann can transcribe her findings and letter by way of her braille that can then be decoded into print (<i>Types of extensions: complexity, resources and materials, level of support</i>).</p> <p>Teresa is academically above her peers; however, she does not view the ability to perform regular physical activity as important. She has the ability to go beyond expected tasks and/or class assignments. The outcome of this activity is to get Teresa to see the correlation and benefit of physical activity through community participation. Teresa is capable of research, planning, writing proposals, and presenting to the local government (<i>Types of extensions: purpose and appropriateness, complexity, procedures and routines</i>).</p>



## **High School Health/Physical Education Wellness Interdisciplinary Model**

### **Course Overview:**

This one-credit course is designed as an interdisciplinary approach to health education. All content from the high school health and physical education *Program of Studies* is included along with content from vocational education. The main focus of this course is the promotion of a healthy lifestyle through proper nutrition, physical activities, and lifestyle choices. The course model for health education includes core content from practical living and vocational studies content chart. Activities and extensions for diverse learners are designed to enhance the understanding of all students about holistic health and the healthcare industry. Upon completion of this course, students will be able to answer the question, “How does my physical, mental, and social well-being influence the lifestyle choices I make each day?”

Models are organized around guiding questions. Guiding questions direct teachers’ choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies* and the wellness content chart. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content or content from elective areas, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

The academic expectations, guiding questions, correlations to the *Program of Studies*, sample activities, and sample extensions for diverse learners for this model are found on pages H 19 - 41.

## Physical Education Glossary

**Anaerobic exercise:** Intense physical activity lasting only a few seconds to a few minutes.

**Isokinetic exercise:** Exercise that makes use of weight-training machines to move muscles at a constant rate of speed throughout their full range of movement.

**Isometric exercise:** Exercise in which a muscle contracts but does not shorten. This type of exercise increases strength but only at the joint angle at which the exercise is performed.

**Isotonic exercise:** The contraction and relaxation of muscles through their full range of motion. This type of exercise develops muscle strength.

**Muscular endurance:** The ability of a muscle or a group of muscles to apply force over a period of time.

**Muscular strength:** The ability of a muscle to exert or to resist a force.

**Physical fitness:** The ability of the heart, blood vessels, lungs, and muscles to work together to meet the body's needs.

**Plyometric:** Those activities that produce an overload of isometric type of muscle action which invokes the stretch reflex in muscles.

**Warm-up:** A 5-to-10 minute period during which you prepare your body for vigorous exercise.

## Physical Education Teacher Resources

### Publications: Books

- Allsen, P., and P. Witbeck. *Racquetball*. 6th ed. Dubuque, IA: Brown and Benchmark Publishers, 1996.
- Alter, M. *The Science of Stretching*. 2d ed. Champaign, IL: Human Kinetics Publishers, 1996.
- American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription*, 5th ed. Baltimore, MD: Williams and Wilkins, 1995.
- Avis, H. *Drugs and Life*. 2d ed. Dubuque, IA: Wm. C. Brown Publishers, 1993.
- Bouchard, C. *Physical Activity, Fitness, and Health*. Champaign, IL: Human Kinetics Publishers, 1994.
- Brownell, K., J. Rodin, and J. Wilmore. eds. *Eating, Body Weight, and Performance in Athletes: Disorders of Modern Society*. Philadelphia: Lea and Febiger, 1992.
- Bruess, C., and Q. Richardson. *Decisions for Health*. 4th ed. Dubuque, IA: Wm C. Brown Publishers, 1995.
- Gallahue, D., and J. Ozmum. *Understanding Motor Development*. 3rd ed. Madison, WI: Brown and Benchmark, 1995.
- Harrison, J., and C. Blakemore, *Instructional Strategies for Secondary School Physical Education*. 3rd ed. Dubuque, IA: Wm. C. Brown Publishers, 1992.
- Kirchner, G., and G. Fishburn. *Physical Education for Elementary School Children*. Dubuque, IA: Brown and Benchmark, 1995.
- Mood, D., F. Musker, , and J. Rink. *Sports and Recreational Activities*. 10th ed. St. Louis, MO: Mosby, 1991.
- Pagrazi, R., and P. Darst. *Dynamic Physical Education for Secondary School Students*. 3rd ed. Boston: Allyn and Bacon, 1997.
- Pagrazi, R., and V. Dauer. *Dynamic Physical Education for Elementary Children*. 11th ed. Boston: Allyn and Bacon, 1995.
- Rink, J. *Teaching Physical Education for Learning*. St Louis: Times Mirror/Mosby, 1985.
- Schmidt, R. *Motor Control and Learning*. Champaign, IL: Human Kinetics Publishers, 1982.
- Seaton, D., N. Schmottlach, J. McManama, I. Clayton, H. Leibee, and L. Messersmith. *Physical Education Handbook*. 11th ed. Englewood Cliffs, NJ: Prentice-Hall, 1992.
- Siedentop, D. *Introduction To Physical Education , Fitness and Sport*. Mountain View, CA: Mayfield, 1990.
- Thomas, J., K. Thomas, and J.Gallagher. *Handbook of Research on Sport Psychology: Developmental Considerations in Skill Acquisition*, NY: Macmillan, 1993.

## Physical Education Teacher Resources

### Publications: Periodicals

*Adapted Physical Activity Quarterly*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Athletic Therapy Today*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Canadian Journal of Applied Physiology*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Coach and Athletic Director*

Scholastic, Inc., 555 Broadway, New York, NY 10012-3999

*Exercise Immunology Review*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*International Journal of Sport Nutrition*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Aging and Physical Activity*

Human Kinetics Publishers, Inc., Box 5076, Champaign IL 61825-5076

*Journal of Applied Biomechanic*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Health, Physical Education, Recreation and Dance*

1900 Association Drive, Reston, VA 22091

*Journal of Sport and Exercise Psychology*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Sport Management*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Sport Rehabilitation*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Strength and Conditioning Research*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Journal of Teaching in Physical Education*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

*Medicine and Science in Sports and Exercise*

American College of Sports Medicine, Box 1440, Indianapolis, IN 46206-1440

## **Physical Education Teacher Resources**

### *Motor Control Journal*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

### *Pediatric Exercise Science*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

### *Teaching Secondary Physical Education*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

### *The Sport Psychologist*

Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825-5076

For additional resources, see the Kentucky Department of Education's Web Site at <[www.kde.state.ky.us](http://www.kde.state.ky.us)> and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12*.

**NOTES**

# Science





# **Required Credits**



## High School Science Models

### Overview of Models:

Three models that fulfill the high school science graduation requirements are suggested. Model I is a traditional approach that includes physical, Earth/space, and life sciences. Two variations to Model I are presented. These variations include vocational education courses. In one variation, Agri-biology may be substituted to satisfy the life science credit for high school graduation. In another variation, Medical Science satisfies the life science credit for the high school graduation requirement.

In Model II, Earth/Space Science concepts are integrated with appropriate physics, chemistry, and biology concepts. One variation is presented: Principles of Technology with Earth/Space Science may be substituted for Introductory Physics with Earth/Space Science to complete the high school graduation requirement.

Model III integrates physical, Earth/space, and life science concepts into each of three courses: Integrated Science I, Integrated Science II, and Integrated Science III. This model reflects the multi-disciplinary nature of science.

Nutritional and Food science is presented as an elective class. It can not be substituted for the life science graduation credit because it does not contain all the life science conceptual understandings outlined in the *Program of Studies*.

### Models that Meet High School Science Graduation Requirements:

#### Model I

- Physical Science
- Earth/Space Science
- Life Science

#### Vocational Education Model I with Agri-Biology

- Physical Science
- Earth/Space Science
- Agri-Biology

#### Vocational Education Model I with Medical Science

- Physical Science
- Earth/Space Science
- Medical Science

#### Model II

- Introductory Physics with Earth/Space Science
- Introductory Chemistry with Earth/Space Science
- Introductory Biology with Earth/Space Science

## **High School Science Models**

### Vocational Education Model II with Principles of Technology

- Principles of Technology with Earth/Space Science
- Introductory Chemistry with Earth/Space Science
- Introductory Biology with Earth/Space Science

### Model III

- Integrated Science I
- Integrated Science II
- Integrated Science III

### **Elective Models:**

#### Vocational Education Model

- Nutritional and Food Science

## **High School Science**

### **Model I: Physical Science**

#### **Course Overview:**

Students develop a conceptual understanding of physical science through the use of scientific inquiry. They experience physical science concepts such as structure of atoms, structure and properties of matter, chemical reaction, motions and forces, conservation of energy and increase in disorder, and interactions of energy and matter. A scientific inquiry approach uses concrete, hands-on experiences that requires students to apply critical-thinking skills. For each guiding question, students apply and connect scientific concepts to real life. It is suggested that the physical science course be taken before either Earth/space science or life science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How do observable properties of matter enable us to determine the structure of atoms?
- How are chemical and physical properties of matter related to the structure of matter?
- What causes chemical reactions that affect our daily lives?
- How can we use forces and the laws of motion to understand the motion of objects?
- How is the transfer of energy controlled by the conservation of energy and by the tendency toward disorder?
- What happens when energy interacts with matter?

**High School Science**  
**Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do observable properties of matter enable us to determine the structure of atoms?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Structure of Atoms</b></p> <ul style="list-style-type: none"> <li>• analyze atomic structure and electric forces.</li> <li>• examine nuclear structure, nuclear forces, and nuclear reactions.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model I: Physical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate atomic structure. Analyze visible spectrum emitted from heated elements (e.g., metallic salts suspended in flame, neon lights, fluorescent bulbs) using spectrosopes, prisms, or diffraction gratings. Produce pictorial model that relates wavelength and energy of light emitted to Bohr model of atom. Observe fireworks either directly or on videotape and use colors of displays to identify elements used in fireworks.</li> <li>• simulate radioactive decay. Examine radioactive half-life by placing 100 pennies (atomic nuclei) in closed container (sample of radioactive isotope), shaking it (nuclear reactions), then counting and removing pennies that are heads up. Repeat until all pennies have been removed. Graph number of pennies removed versus trial number. Determine from graph the number of trials it would take to completely remove 200 pennies. Produce investigative reports on radon in homes across Kentucky that show connections between radon occurrence and geological regions in Kentucky. Explain why the radioactive decay of radon is a dangerous nuclear reaction. Extend this report by describing how nuclear structure and nuclear forces cause radon to be radioactive. Present the investigative reports to local health departments. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> </ul>	<p>Randy understands concepts at the same level as his peers. He has difficulty manipulating small objects. For this activity, either pair Randy with a peer who can remove pennies or provide him with larger objects to manipulate (<i>Types of extensions: resources and materials, level of support</i>).</p>

**High School Science  
Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are chemical and physical properties of matter related to the structure of matter?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Structure and Properties of Matter</b></p> <ul style="list-style-type: none"> <li>• investigate structure and chemical properties of matter.</li> <li>• investigate structure and physical properties of matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science**  
**Model I: Physical Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>analyze ways chemical properties are related to the structure of matter. Investigate simple chemical reactions between common household substances (e.g., charcoal burning, mixing baking soda with vinegar). Observe reactions and produce structural models (e.g., pictorial, physical). Explain observed chemical properties in brochures containing consumer safety information to be distributed by local home extension agent (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use publishing software to create brochures.</i></p> <ul style="list-style-type: none"> <li>analyze ways physical properties are related to the structure of matter. Investigate physical properties such as the viscosities of 10W motor oil and 40W motor oil. Produce structural models (e.g., pictorial, physical) that explain observed physical properties. Use structural models to create videos to use in vocational school auto mechanic classes explaining viscosities.</li> </ul> <p><i>Technology Suggestion: Use camcorder to make videos.</i></p>	<p>Suzanne understands information presented in simple language. She can demonstrate knowledge by drawing or building models. When working on physical models, she works at a pace typically slower than her same-age peers. When making structural models for these activities, allow Suzanne to develop one model instead of multiple models (<i>Types of extensions: magnitude, pace, complexity</i>).</p> <p>Tim, Brianna, and Cory participated in a Saturday scholars chemistry class in which they investigated physical changes. They measured ice-melting and water-boiling temperatures. They will expand upon the class activity by adding salt and sugar (1g/10mL water) into water and remeasuring ice-melting and water-boiling temperatures. They will record and discuss results and observations and report to the class (<i>Types of extensions: purpose and appropriateness, order of learning, complexity, pace, resources and materials, level of support</i>).</p>

**High School Science**  
**Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What causes chemical reactions that affect our daily lives?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Chemical Reactions</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> <li>• investigate factors affecting reaction rates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model I: Physical Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate heat energy released when hydrocarbons (e.g., lamp oil, paraffin, alcohol) react with oxygen. Use oil lamp, candle, or alcohol lamp to heat beaker of water. Produce investigative reports that quantitatively compare the heat energy released from a variety of hydrocarbons (e.g., fuel oil, coal, wood, food). Distribute reports to local environmental groups concerned about proper use of natural resources (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use probes and graphing calculators to collect and graph data.</i></p> <ul style="list-style-type: none"> <li>• examine transfer of electrons during chemical reactions (e.g., zinc and dilute hydrochloric acid). Observe reactions and construct structural models (e.g., physical, pictorial) to explain observations. Write encyclopedia entries that use the models to show how transfer of electrons produces electricity in batteries (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use publishing software to create brochures.</i></p> <ul style="list-style-type: none"> <li>• investigate one factor affecting reaction rates. Observe smoldering splint of wood in air and when splint is placed into bottle of pure oxygen. Produce essays with student created drawings to explain how concentration of reactants increase reaction rate. Extend activity by investigating other factors (e.g., temperature, surface area).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use digital camera to create photo essays.</i></p>	<p>Chancy understands concepts when they are presented using verbal descriptions or pictures along with hands-on activities. He can demonstrate his knowledge by explaining what he knows verbally or using drawings. For this activity, provide Chancy with an audiotape of the experiment and expectations prior to class. Allow Chancy to audio tape his prediction of which variables would need to be measured to determine the amount of heat transferred (<i>Types of extensions: procedures and routines, materials, order of learning, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How can we use forces and the laws of motion to understand the motion of objects?</p>	<p><b>Students will</b>  <b>Physical Science</b>  <b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul> <p style="text-align: right;"><i>(Continued on page 16)</i></p>

**High School Science**  
**Model I: Physical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate effects of forces on the motion of objects. Attach strings to carts and then attach each string to one standard mass of 100 grams. Place carts on tables and suspend standard masses over edge of tables. Use suspended masses to pull carts length of tables. Measure time with photogates. Repeat multiple trials with different masses loaded on carts. Use same 100 gram standard mass suspended over table edge for each trial. Produce graphs of distance versus time for different masses loaded on cart. Analyze slope of curves and predict relationships between mass and acceleration while using a constant force. Extend activity by comparing the force used to throw baseballs and golf balls with their mass and acceleration.</li> </ul> <p><i><b>Technology suggestion:</b> Use photogates and graphing calculators to measure time and graph data.</i></p>	<p>Khoa has been in the country for two and one-half years. He grasps academic vocabulary quickly, has excellent listening skills, but needs help with written expression. Khoa will be paired with two English-speaking lab partners. The teacher will provide him with a list of essential physics vocabulary specific to this experiment (e.g., mass, length, distance, time, carts, photogate, slope, curves, relationship, acceleration). In his initial role as observer, he will write definitions of the vocabulary in Vietnamese to assist in writing the final lab report. During group activity his role will be to record data as dictated by his lab partners. The English-speaking lab partners' role will be to verify use of comparative language in expressing the relationship between force, mass, and acceleration (e.g., a Limited English Proficiency student might say "the more weight, the slower the cart moves." English-speaking students will provide more appropriate scientific description, such as "as mass increases, acceleration decreases") (<i>Types of extensions: procedures and routines, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Science  
Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 14)</i> How can we use forces and the laws of motion to understand the motion of objects?</p>	<p><b>Students will</b> <b>Physical Science</b> <b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
Model I: Physical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate electromagnetic forces. Produce electricity by thrusting one end of strong bar magnet through wire coils that have different numbers of turns. Measure electricity produced. Produce lab reports identifying variables that affect amount of electricity created. Compare this production of electricity to the electricity produced when you speak into a dynamic microphone (the diaphragm thrusts a coil through a magnetic field and produces bursts of electricity in response to sounds). Produce consumer information pamphlets for local retail stores explaining the operation of microphones and speakers and the proper way to install them (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use milliammeters, galvanometers, or probes and graphing calculators to measure electricity.</i></p>	<p>Jessica is able to learn at the same rate as her peers when information is presented orally or in written form. She has difficulty translating thoughts to print. She is able to complete lab in same manner as other students. However, both lab reports and consumer brochures will be difficult for her. There are several students who have difficulty with writing and the teacher pairs them with students for whom writing is not a problem. One lab report per team is turned in for a grade. Jessica is able to identify variables that affect amounts of electricity and her partner records their answers. For brochures, she is able to orally contribute information. She is also able to produce accompanying diagrams. (<i>Types of extensions: level of support, procedures and routines, level of participation</i>).</p>

**High School Science  
Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How is the transfer of energy controlled by the conservation of energy and by the tendency toward disorder?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• recognize that the total energy of the universe is constant.</li> <li>• distinguish between types of energy.</li> <li>• examine how everything tends to become less organized.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>



**High School Science**  
**Model I: Physical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine energy transfer. Explain how thermal energy is produced in toasters by tracing energy back to its source. List forms of energy during different stages of transfer. Produce brochures to be distributed by local electric cooperatives containing consumer information about efficient energy use by home appliances (<i>WP-Transactive</i>).</li> <li>• investigate types of energy. Use photogate timer, meter stick, and balance to collect data and calculate change in potential energy and kinetic energy during swing of simple pendulum. Develop reports for customers in local stores that sell grandfather clocks explaining the construction features of clocks that efficiently use kinetic and potential energy. Write encyclopedia entries explaining the interaction between kinetic and potential energy in grandfather clocks (<i>WP-Transactive</i>).</li> <li>• examine the tendency to become less organized. Design and conduct experiments to determine the rate of dispersion of food coloring dropped into water of different temperatures. Produce reports describing the inquiry approach, observations, and explanations of effects of temperature on rates of dispersion.</li> </ul> <p><i>Technology Suggestion: Use photogates and graphing calculators to collect and graph data.</i></p>	<p>Seth learns information at the same rate and level as his peers. He uses hearing aides and requires audio trainers or interpreters (sign language) to understand information presented verbally or participate in conversations. He reads information on the same grade level as his peers. For these activities, the teacher will use an audio trainer or interpreter during instruction and discussion. Provide written directions for activities or description of concepts (<i>Types of extensions: resources and materials, level of support</i>).</p> <p>Darlene is visually impaired. She is able to design and conduct experiments (e.g., dropping food coloring into different beakers of varying temperatures). Her partner verbally describes results. Darlene records her partner's descriptions and completes her lab report with a Braille writer. (<i>Types of extensions: level of support, resources and materials</i>).</p>

**High School Science  
Model I: Physical Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What happens when energy interacts with matter?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Interactions of Energy and Matter</b></p> <ul style="list-style-type: none"> <li>• investigate energy transfer caused when waves and matter interact.</li> <li>• investigate electrical energy and conductivity through matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science  
Model I: Physical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate energy transfer between waves and matter. Collect data to produce colored charts of visible bright line spectra of various elements (e.g., metallic salts suspended in flame, neon lights, fluorescent bulbs) using spectrosopes, prisms, or diffraction gratings. Use these charts to identify elements in “unknown” samples supplied by teacher. Use the charts to produce consumer information articles with photos or color drawings to explain why each element absorbs and emits a specific packet of energy. Distribute articles to local hardware stores that sell light bulbs. Write encyclopedia entries explaining the interaction of light waves and various elements (<i>WP-Transactive</i>).</li> <li>investigate the interaction of electrical energy and matter. Design and conduct experiments to identify variables that affect the amount of conductivity and resistance in metal wires. Produce articles that explain how these variables impact wiring for new speakers (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use probes and graphing calculators to collect and graph data.</i></p>	<p>Steve works at the same level as his peers and is able to complete any assignment when in the same time frame. However, he has difficulty interacting with peers and adults. The teacher assigns groups of four to complete the lab. Because Steve is unable to work in groups of that size, the teacher assigns him to work with one other student to complete assignments. Prior to beginning labs, the teacher reviews lab rules, Steve’s behavior plan, and point sheet. Following lab, the teacher gives positive or corrective feedback as necessary (<i>Types of extensions: procedures and routines, level of support, motivation, participation, resources and materials</i>).</p> <p>Ermin is a Limited English Proficiency student who has been in the country for 14 months, has strong verbal skills due to his outgoing nature, but limited academic vocabulary, especially in reading and writing. Assuming that concepts and vocabulary required for lab report have been demonstrated prior to the experiment, physical and visual elements will facilitate him to apply newly acquired knowledge. To assist him in identifying variables, the teacher will provide stereo speakers and metal wires that vary in composition, thickness, length, and insulation. Ermin then will experiment physically with various types of wire to determine interactions of electrical energy and matter. English-speaking students can assist him in putting his ideas into writing (<i>Types of extensions: procedures and routines, level of support, participation, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Physical Science**

**NOTES**

## **High School Science**

### **Model I: Earth/Space Science**

#### **Course Overview:**

Students develop a conceptual understanding of Earth/space science through the use of scientific inquiry. They experience Earth/space concepts such as energy in the Earth system, geochemical cycles, formation and ongoing changes of the Earth system, and formation and ongoing changes of the universe. A scientific inquiry approach uses concrete, hands-on experiences that requires students to apply critical thinking skills. For each guiding question, students apply and connect scientific concepts to real life. It is suggested that the physical science course be taken before either Earth/space science or life science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How do observable structures on Earth's surface enable us to determine the internal energy sources of the earth?
- How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere?
- How are Earth's chemical reservoirs affected by the internal and external sources of energy?
- What evidence can be found that the Earth and solar system have changed over time?
- What evidence can we find that the universe is in the process of continuous change?

**High School Science  
Model I: Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do observable structures on Earth’s surface enable us to determine the internal energy sources of the Earth?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p style="text-align: right;"><i>(Continued on page 26)</i></p>

**High School Science**  
**Model I: Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>design investigations to examine the Sun as a source of external energy. Allow the Sun to heat water inside a soft drink can that has been painted black. Measure the temperature increase after 20 minutes and calculate the amount of heat energy reaching the water per minute. Prepare cost analyses and write articles to be distributed by local home builders associations comparing the cost of operating solar houses to conventional houses in Kentucky (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use probes and graphing calculators to collect and graph data.</i></p>	<p>Zhi-Jian has been in this country for two months and his oral/aural skills are extremely limited. His reading and writing abilities are somewhat better in spite of serious vocabulary gaps. Having had physics in China, he understands concepts but lacks technical vocabulary and basic language structure to express that understanding. He will use thermometer to determine temperature changes and will perform mathematical calculations required to complete lab report. His English-speaking lab partner will write the actual report. Zhi-Jian will copy technical vocabulary he is still learning and write definitions in Chinese (<i>Types of extensions: level of support, purpose and appropriateness, demonstration of knowledge</i>).</p> <p>Stella, Claudia, and Rob have demonstrated mastery of science concepts, providing them time to do additional investigations. They will vary the placement of cans, altering the amount of surface area exposed to the Sun's rays. They will also place the cans in different positions on aluminum to investigate the effects of reflection, and carry out experiments on cloudy days and sunny days to estimate the reduction of heat energy due to the presence of clouds. They will record their observations, draw conclusions, and share them with the class (<i>Types of extensions: purpose and appropriateness, time, complexity, order of learning, environment, participation, demonstration of knowledge, resources and materials, level of support</i>).</p>

**High School Science**  
**Model I: Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 24)</i> How do observable structures on Earth’s surface enable us to determine the internal energy sources of the Earth?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science**  
**Model I: Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>model the convection circulation in the mantle. Investigate how these convection currents propel crustal plates. Float small flat sections of styrofoam on the surface of water in a large beaker that is being heated by a hot plate. Compare the motion and causes of motion of the styrofoam to that of tectonic plates. Create investigative reports on movement of crustal plates and the New Madrid fault system. Share reports with local insurance companies for distribution to home owners that buy earthquake insurance (<i>WP-Transactive</i>).</li> </ul>	<p>Jenny understands information when presented verbally. She uses special binocular glass lens to see large items. For this activity, Jenny will have trouble seeing subtle movements of the styrofoam. Provide her opportunities to hear descriptions of what is happening as the water heats up, get close to the styrofoam, or feel movement by having strings attached to the foam (<i>Types of extensions: resources and materials, level of support</i>).</p> <p>Montez needs individual attention and frequent redirection. He understands concepts two years above his peers, but demonstrates patterns of no eye contact or communication with others. He excels in technology. Because of use of hot plates, Montez will need close adult supervision to complete lab and for prompting. Montez is given the assignment to complete the comparison on his computer. He also completes his map using computers. He is given an extra day to complete these assignments (<i>Types of extensions: procedures and routines, complexity, time, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

**High School Science  
Model I: Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How can we observe the effect of the Sun’s energy on the Earth’s surface and atmosphere?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine how external sources of energy produce winds and ocean currents.</li> <li>• examine how external sources of energy determine global climate.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model I: Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model convection in the atmosphere and ocean. Place a large beaker of water on a hot plate and drop food coloring into the water. Explain how this models wind and ocean currents. Create maps of global wind patterns and ocean current patterns. Display maps in history classes and explain how these patterns influenced historical shipping trade routes.</li> <li>• model the water cycle. Boil water and allow steam to contact the bottom of pans of ice. Explain how this models components of the water cycle. Access New Jersey Networking Infrastructure in Education Project (NJ NIE) Ask an Expert <a href="http://njnie.dl.stevens-tech.edu/curriculum/aska.html">http://njnie.dl.stevens-tech.edu/curriculum/aska.html</a> and research the water cycle.</li> </ul> <p><i><b>Technology suggestion:</b> Use Internet to communicate with meteorologists about how energy transferred by water cycle affects global climate.</i></p>	<p>Uyen has been in the country for 24 months and still communicates in sentence fragments. Teacher provides vocabulary list of terms (e.g., liquid, gas, solid, evaporation, condensation, precipitation, heat, energy, state). Uyen will have an English speaker show her what each term means and she will write definitions or examples in Vietnamese. After demonstration of water cycle, she will generate cyclical picture that illustrates three phases, labeling parts in sentence fragments with vocabulary from her list (<i>Types of extensions: level of support, resources and materials, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are Earth’s chemical reservoirs affected by the internal and external sources of energy?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Geochemical Cycles</b></p> <ul style="list-style-type: none"> <li>• recognize that the Earth contains a fixed amount of elements.</li> <li>• analyze Earth’s chemical reservoirs.</li> <li>• investigate how Earth’s sources of energy drive geochemical cycles.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model I: Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine the fixed amount of each stable chemical atom or element in the Earth system. Produce articles explaining how Earth’s resources are being depleted while Earth’s amount of atoms or elements essentially stays the same.</li> <li>• research Earth’s chemical reservoirs. Produce articles explaining how plate tectonics affect ways geologists explore for economically important ore deposits (<i>WP-Transactive</i>).</li> <li>• investigate how Earth’s energy drives geochemical cycles. Make a hot concentrated solution of water and sugar. Allow the solution to cool and evaporate undisturbed for one week. Observe the formation of crystals. Explain how energy drives the water cycle and how the water cycle aids the formation of Earth’s minerals. Document observations and explanations in learning logs.</li> </ul>	<p>Brad works well with other students. He can demonstrate what he knows using picture cards and a talking computer. For this activity, Brad will work in a small group. As data is collected on the formation of crystals, Brad will choose correct picture representations for the degree of crystal formation and paste pictures in his journal. The pictures and the written description will be programmed into his computer so he can answer questions in class and can demonstrate his knowledge (<i>Types of extensions: demonstration of knowledge, participation, level of support, procedures and routines, resources and materials, magnitude</i>).</p>

**High School Science**  
**Model I: Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence can be found that the Earth and solar system have changed over time?</p>	<p><b>Students will</b> <b>Earth/Space Science</b> <b>The Formation and Ongoing Changes of the Earth System</b></p> <ul style="list-style-type: none"> <li>• describe the formation of the solar system.</li> <li>• investigate how to estimate geologic time.</li> <li>• examine ongoing changes of the Earth system.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model I: Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model possible mechanisms for the formation of the solar system. Sprinkle lycopodium powder on top of water in beakers and stir (the swirling lycopodium powder represents mass particles coalescing under the influence of gravity). Produce articles describing other possible mechanisms for the formation of the solar system and describing current changes that are occurring in the solar system (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use Internet to observe latest photographs of astronomical objects and events.</i></p> <ul style="list-style-type: none"> <li>• investigate geologic time. Construct physical or pictorial models that show subdivisions of geologic time on time lines. Include descriptions of fossils found from each time period. Examine and map coal deposits and other rock sequences across the state. Create educational brochures describing rock formations that contain fossils and distribute at visitor centers (<i>WP - Transactive</i>).</li> <li>• explore how movement of continental plates affected distribution of species. Investigate matching fossils and rock formations across plate boundaries, the unique collection of species on some continents (e.g., marsupials in Australia), and distribution of biogeographical realms.</li> <li>• examine interactions that cause ongoing changes in the Earth system. Model chemical weathering by placing piece of chalk (limestone) in water and another piece in vinegar (acid). Produce articles to predict long term effects of acid rain on erosion of Earth’s surface, limestone cave formation, monuments, and buildings (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i><b>Technology suggestions:</b> Use digital cameras to create photo essays. Create multimedia presentations for city council or county fiscal courts documenting effects of weathering or acid rain on communities.</i></p> <ul style="list-style-type: none"> <li>• investigate significant geologic events (e.g., mountain building, formation of volcanoes) and their impact on speciation. Research adaptive radiation on Hawaiian and Galapagos Islands. Create maps of islands showing locations of different species. Use graphic organizers to compare features of species. Develop models to explain how adaptive radiation occurs on island chains.</li> </ul>	<p>Josh is deaf. He is able to complete tasks similar to grade-level peers. He is provided with a written set of directions for this assignment. During the field trip to investigate coal deposits and other rock sequences, an interpreter signs the speaker’s explanations (<i>Types of extensions: procedures and routines, resources and materials, level of support</i>).</p> <p>Stanley understands information well beyond the level of his peers. He is highly motivated when he is given independence in his study of new concepts. For this activity, Stanley already knows basic concepts of chemical weathering. Contract with Stanley to conduct a research project on the effects of chemical weathering on the local landscape. As part of the research, Stanley will develop a specific set of strategies to decrease the amount of weathering in his community. He will also present strategies to city council members (<i>Types of extensions: motivation, purpose and appropriateness, complexity, time, pace, environment, order of learning, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence can we find that the universe is in the process of continuous change?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>The Formation and Ongoing Changes of the Universe</b></p> <ul style="list-style-type: none"> <li>• describe theories of the formation of the universe.</li> <li>• describe the formation of the stars.</li> <li>• examine stars.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science**  
**Model I: Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine components and structure of the universe. Construct physical or pictorial models of the universe that show the position of our solar system and accurately represent size and distance. Display models in school cafeteria. Write reviews for the movie <i>Armageddon</i> commenting on scientific accuracy (<i>WP-Transactive</i>).</li><li>• investigate factors that contribute to the formation of stars. Write articles explaining the use of stellar parallax to measure distances to stars. Distribute articles to local astronomy clubs (<i>WP-Transactive</i>).</li><li>• investigate components of stars. Observe photographs of spectra from stars. Produce written comparisons to Sun's spectrum and explain similarities and differences. Create colored charts, posters, or multimedia presentations comparing spectra from stars to Sun's spectrum. Share multimedia presentations with school-based council.</li></ul> <p><i>Technology suggestion: Use multimedia software to develop presentation.</i></p>	

**High School Science  
Model I: Earth/Space Science**

**NOTES**

## High School Science Model I: Life Science

### Course Overview:

Students develop a conceptual understanding of life science through the use of scientific inquiry. They experience life science concepts such as the cellular organization; molecular basis of heredity; biological change; interdependence of organisms; matter, energy and organization in living systems; and behavior of organisms. A scientific inquiry approach uses concrete, hands-on experiences that requires students to apply critical-thinking skills. For each guiding question, students apply and connect scientific concepts to real life. It is suggested that the physical science course be taken before either Earth/space science or life science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### Guiding Questions:

- How do cell structures, functions, and processes affect living things?
- How does DNA transfer genetic information of organisms to the next generation?
- What evidence suggests that species change over time and how is biological classification used to explain relationships between diverse organisms?
- How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem?
- What processes are involved in the flow of matter and energy through and between living systems and the physical environment?
- How do behavioral responses to stimuli ensure individual survival and reproductive success for the species?

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do cell structures, functions, and processes affect living things?</p>	<p><b>Students will</b> <b>Life Science</b> <b>The Cell</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p align="right"><i>(Continued on page 40)</i></p>

**High School Science  
Model I: Life Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine cell structures with light microscope. Produce photo essay or essay with student created drawings of basic cell structure (e.g., cell wall, cell membrane, nucleus, cytoplasm, chloroplast, vacuoles). Describe functions of cell structures on mechanical rather than biochemical level (e.g., nucleus and control of cell function, chloroplast and photosynthesis, mitochondria and respiration, cell membrane and transport). Include ways to test the assertion that chicken eggs are cells by comparing functions of different structures in eggs and in cells.</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestion:</b> Use light microscopes or flex cams to examine cell structures.</i></p> <ul style="list-style-type: none"> <li>• investigate reactants and products of the photosynthetic chemical reaction. Use light screens on Geranium leaves. Conduct iodine tests after a few days to determine effects of light and absence of light on production of carbohydrates in leaves. Place <i>Elodea</i> plants into carbonate solutions under bright light. Count oxygen bubbles as they emerge from cut ends of <i>Elodea</i> plants. Analyze these activities and produce an empirical word equation for the photosynthetic chemical reaction. Investigate ways to increase or decrease rate of oxygen production. Compare photosynthesis in plants adapted to life in arid conditions to plants living in Kentucky.</li> <li>• investigate the evolution of eukaryotic cells. Trace the origin of cell organelles. Use graphic organizers to compare characteristics of oldest known cells to modern cells. Create illustrated time lines documenting milestones in the development of the cell theory.</li> <li>• compare functions of cell organelles to school or city structures that have similar functions. Create multimedia presentations showing comparisons.</li> <li>• investigate how and when cells differentiate. Read “<i>How Does A Single Cell Become a Whole Body.</i>” Trace formation of germ layers and identify organ systems that develop from each layer. Create informational bulletin boards, collages, or posters. Examine drugs (e.g., thalidomide, alcohol) and diseases (e.g., rubella) that interfere with differentiation and organogenesis. Write articles to encourage pregnant women to refrain from drinking alcohol. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> </ul>	<p>Carl is able to learn concepts and vocabulary presented in a very concrete manner. He has difficulty with new language and vocabulary and needs visual devices to remind him of the meaning of vocabulary (e.g., photosynthesis), adding one new term and reviewing old ones each day. Also, on the day of the activity, the teacher reviews techniques for using microscopes and parts of the microscope. She also presents a diagram of a cell and its structures. Carl copies it into his notebook. With a partner, Carl examines cell structures with the microscope and compares it to his diagram. Then Carl draws a diagram from the real cell and compares it to his notes, labeling all parts. Carl will answer simple questions to describe functions of cell structures. He does not complete the chicken egg section of the lab (<i>Types of extensions: order of learning, procedures and routines, complexity, magnitude, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 38)</i> How do cell structures, functions, and processes affect living things?</p>	<p><b>Students will</b> <b>Life Science</b> <b>The Cell</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science  
Model I: Life Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• investigate the changes that occur during metamorphosis of animals (e.g., salamanders, insects, frogs). Create illustrated flow charts explaining the process. Create physical models of young and adult. Identify natural or human-induced hazards (e.g., acid rain) that affect development. Interview biologists about changes in local populations of aquatic organisms. Write letters to legislators regarding effects of acid rain or other pollutants on aquatic organisms (<i>WP-Transactive</i>). See <i>Project Wet Curriculum and Activity Guide</i> activity <i>Where are the Frogs?</i></li><li>• investigate embryonic development. Examine pictures of different species of embryos at different stages of development. Use graphic organizers to compare features. Research variables that affect embryonic development (e.g., thalidomide, alcohol, diseases). Develop informational brochures for expectant mothers explaining health hazards and distribute through local health care facilities (<i>WP-Transactive</i>).</li><li>• trace what happens to food produced by rain forest trees when its leaves and fruit are eaten by other animals. Create bulletin boards illustrating flow of energy and explaining the photosynthetic process.</li><li>• create illustrated time lines showing major discoveries in studies of photosynthesis. Include works of major researchers (e.g., Van Helmont, Priestley, Ingenhouz, Sachs, Engelmanson).</li></ul> <p><b><i>Technology suggestion:</i></b> Use software to create time lines.</p>	

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How does DNA transfer genetic information of organisms to the next generation?</p>	<p><b>Students will</b>  <b>Life Science</b>  <b>The Molecular Basis of Heredity</b></p> <ul style="list-style-type: none"> <li>• investigate DNA.</li> <li>• investigate encoding and replication.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• investigate advances that have effects on science and society.</li> </ul>



## High School Science Model I: Life Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine DNA structure. Construct models of DNA molecules and show locations of genes. Display models in science labs. Write articles for the local school newspaper concerning future applications of Human Genome Project (<i>WP-Transactive</i>).</li> <li>• examine replication. Create articles showing how one DNA molecule can form exact duplicate of itself (replication). Use photographs of DNA models in essays (<i>WP-Transactive</i>).</li> <li>• investigate life cycles of cells. Examine videos, slides, or photographs of various stages of mitosis and interphase. Recreate stages using students to represent chromosomes.</li> <li>• investigate loss of control over cell division exhibited by cancer cells. Identify chemical substances used in chemotherapy and their purposes. Interview community members who have had chemotherapy, examine the process and how it affected their lives. Write articles for science sections of newspapers and explain the idea that cancer is a normal developmental process gone wrong or write editorials to explain why money should be spent on basic research regarding normal cell cycle (<i>WP-Transactive</i>).</li> <li>• read Watson’s account of the discovery of DNA structure. Summarize methods used and evidence gathered. Investigate lives of other researchers who were involved in the discovery (e.g., Rosalind Franklin, Maurice Wilkins, Francis Crick). Write resumes for each researcher.</li> <li>• investigate protein synthesis including transcription and translation. Create models to demonstrate process. Identify types of RNA present, their function, and locations. Use graphic organizers to compare protein synthesis in eukaryotes and prokaryotes. Explore evolutionary significance of common genetic language.</li> <li>• investigate how some antibiotics work to interrupt protein synthesis of bacteria. Create informational brochures explaining how antibiotics work and distribute at drugstores (<i>WP-Transactive</i>).</li> <li>• investigate how mutations in DNA affects protein synthesis. Identify mutagens (e.g., ultraviolet lights, ionizing radiation). Write articles explaining how mutations may be harmful, neutral, or beneficial, depending on how the proteins they specify interact with other genes and the environment (<i>WP-Transactive</i>).</li> </ul>	<p>Angelica sustained a spinal cord injury in an auto accident. She has limited use of her arms. She received instruction on use of assistive technology and computers. She uses technology with assistive devices to access the key board. To complete this assignment, she is given instruction in use of a graphics program that can help her construct models. She constructs her models using her computer and displays them on a class computer monitor or TV screen. She completes the editorial using her computer (<i>Types of extensions: order of learning, purpose and appropriateness, procedures and routines, resources and materials, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Biological Change</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
Model I: Life Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate defense mechanisms (e.g., camouflage, mimicry, toxicity, aggressive behaviors, warning coloration) in plants and animals. Select a defense mechanism and identify organisms that exhibit that trait. Identify patterns among groups of organisms. Create graphic representations (e.g., circle graphs, histograms) to display data. Read articles describing industrial melanism (e.g., “Further Selection Experiments on Industrial Melanism in the Lepidoptera.”). Explain in learning logs how process of natural selection altered populations of peppered moths (<i>Biston betularia</i>).</li> <li>• investigate evolution of various species (e.g., horses). Create murals depicting phylogenetic trees. Discuss how adaptations are advantageous to the survival of species.</li> <li>• examine diversity and unity of organisms. Observe organisms in areas close to school. Sort organisms by structure and develop classification system. Produce essays with photographs to be distributed during parents’ night.</li> <li>• investigate biodiversity. Take field trips to riparian ecosystems. Map physical and biological features. List organisms living in each area and describe their roles. Explore how changes in environments might increase or decrease diversity. Write articles explaining why ecosystems with high biodiversity should be protected (<i>WP-Transactive</i>).</li> <li>• investigate impacts of introduced species (e.g., lamprey eel, rainbow trout, pheasant, purple loosestrife, water hyacinth, Japanese beetle, zebra mussel) on native species. Identify both benefits and liabilities of introduced species. Research ways introductions occur and develop plans to prevent them. Share plans with environmental clubs.</li> <li>• investigate diversity of fish species in Kentucky’s lakes and streams. Invite fish biologist to discuss fish and fish habitats. Interview fishermen and compare with biologists’ information. Use graphic organizers to compare characteristics of fish (e.g., habitats, food sources, mating and breeding patterns). Design dichotomous keys to identify species.</li> </ul>	

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Biological Change</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science  
Model I: Life Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• explore methods of classifying organisms based on structure, function, biochemistry, behavior, nutrition, embryonic development, genetic systems, evolutionary histories, and ecological interactions. Classify various organisms based on pictures and measurements of features (e.g., body form, teeth, skull, feet, skeletal features, body temperature, heart, embryonic development).</li><li>• examine diversity among plants. Identify major highlights of plant evolution (e.g., vascular tissue) and their impact on plant diversification. Identify divisions within plant kingdom and describe their characteristics and significant adaptations. Use graphic organizers to compare characteristics. Create bulletin boards, collages, or multimedia presentations on the economic or medical importance of plants from each division, including local agricultural products.</li><li>• explore loss of biodiversity worldwide. Investigate why tropical rain forests are being destroyed at alarming rates. Debate whether or not developed nations have the right to ask developing nations to slow or stop destruction of their forests.</li><li>• explore diversity among microorganisms. Research types of aerobic and anaerobic bacteria (e.g., <i>Staphylococcus aureus</i>, <i>Clostridium botulinum</i>). Discuss potential impacts on human health (e.g., botulism, vitamin K production). Research and categorize antimicrobial drugs. Investigate how antimicrobial drugs disrupt cell processes or structures or both. Create informational brochures explaining how antimicrobial drugs work and distribute at drugstores.</li><li>• explore beneficial roles of microorganisms (e.g., food production). Organize food fairs for parents' night that highlight the role of microorganisms in food production.</li></ul>	

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Interdependence of Organisms</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• analyze energy flow through ecosystems.</li> <li>• examine the factors that influence the interactions between organisms.</li> <li>• explore how human activities alter ecosystems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
Model I: Life Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate the relative abundance of carbon, hydrogen, nitrogen, and oxygen in living things. Identify major compounds found in living things (e.g., CO<sub>2</sub>, H<sub>2</sub>O, proteins, carbohydrates). Trace the movement of these elements between the living and nonliving world. Identify processes (e.g., respiration, photosynthesis, bacterial role in nitrogen cycle) critical to each cycle. Write short stories assuming role of elements or molecules as they cycle through the biosphere. (The element or molecule must pass through at least two organisms.) Share stories with other biology classes.</li> <li>• investigate the nitrogen cycle. Examine nodules from legumes' roots under microscopes after staining with methylene blue. Sketch nitrogen-fixing bacteria. Produce brochures to be distributed to farmers by agricultural field agents about importance of bacteria (<i>WP-Transactive</i>).</li> <li>• design food chains showing humans' position as primary and secondary consumers. Use food chains to construct food webs. Analyze humans' position in energy transfer. Compare vegetarian and non-vegetarian diets to determine effects of each on the environment. Use this information to argue that we should or should not become vegetarians (<i>WP-Transactive</i>). Determine ingredients needed to produce cows, including land, forage, fuel, fertilizers, corn, soybeans, insecticides, herbicides, antibiotics, hormones, and water. Examine distribution and use of resources among nations of the world.</li> <li>• examine how humans alter ecosystems. Explore effects of fertilizer runoff on water resources. Compare observations (e.g., nitrate level, phosphate level, level of dissolved oxygen) of water sources that are near agricultural land to sources that are not and prepare investigative reports. Participate in Kentucky's Water Watch Program (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use e-mail to compare findings with students across the state.</i></p>	<p>Mandy needs opportunities to participate in activities to support and encourage her intense interest in scientific research. She will survey garden supply stores to find compounds in commonly used pesticides and other lawn and garden products. The gifted-talented specialist will assist in arranging for her to work with an environmental researcher either through mentorship projects at a university or government environmental agency or via e-mail. Mandy and her mentor will design and perform investigations or experiments related to effects of selected compounds in lawn and garden care products on water resources or on food chains. She will present her findings to local garden clubs or other appropriate audience (<i>Types of extensions: purpose and appropriateness, complexity, level of support, environment, time, order of learning, demonstration of knowledge, resources and materials, procedures and routines, magnitude</i>).</p>

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What processes are involved in the flow of matter and energy through and between living systems and the physical environment?</p>	<p><b>Students will</b>  <b>Life Science</b>  <b>Matter, Energy, and Organization in Living Systems</b></p> <ul style="list-style-type: none"> <li>• recognize that living systems require energy.</li> <li>• investigate photosynthesis, cellular respiration and energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>



**High School Science  
Model I: Life Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine energy sources for living systems. Construct models of energy containing food molecules (e.g., sugars, proteins). Construct models of simple molecules (e.g., CO<sub>2</sub>, H<sub>2</sub>O) from which food molecules are formed. Display models in classroom.</li> <li>• research methods used to determine the number of calories in foods. Determine number of calories in walnuts by burning walnuts beneath small beakers filled with water. Compare water temperature before and after burning. Compare number of calories released by lipids, proteins, and carbohydrates. Write informational guides for dieters explaining which type of food provides the most calories and why (<i>WP-Transactive</i>).</li> <li>• investigate energy relationships between photosynthesis and respiration. Use models to illustrate the chemistry of photosynthesis and cellular respiration. Write children's stories about the life of plants describing when and where photosynthesis and respiration take place (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use desktop publishing software to create books.</i></p> <ul style="list-style-type: none"> <li>• write articles explaining why rain forests make little or no net contribution to global oxygen production or reduction of global warming (<i>WP-Transactive</i>).</li> <li>• analyze energy flow through ecosystems. Read feature articles from fishing, hunting, or nature magazines and use the information to create food webs. Display food webs on bulletin boards. Examine diagrams of energy pyramids for typical ecosystems. Develop diagrams and memos to be used by wildlife biologists for workshops explaining why energy pyramids are broad at bottom and narrow at top.</li> </ul>	<p>Mia has limited fine motor abilities, but her cognitive skills are commensurate with same-age peers. She will need therapeutty rather than modeling clay, stiffer paper, larger objects, and peer or adult assistance constructing her models, but she should be allowed to perform construction of models herself. An occupational therapist will consult regarding appropriate types of materials (<i>Types of extensions: time, procedures and routines, resources and materials, level of support</i>).</p>

**High School Science  
Model I: Life Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do behavioral responses to stimuli ensure individual survival and reproductive success for species?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Behavior of Organisms</b></p> <ul style="list-style-type: none"> <li>• investigate behavioral responses.</li> <li>• analyze patterns of behavior.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
Model I: Life Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate and compare innate and learned behaviors (e.g., habituation, imprinting, classical and operant conditioning) in graphic organizers. Create multimedia presentations illustrating examples of each.</li> <li>• investigate the evolutionary and genetic basis of behavior. Compare advantages and disadvantages of sexual reproduction and asexual reproduction. Explain the adaptive advantages of hermaphroditism, altruistic behavior, and mating systems (e.g., polygamy, polyandry, monogamy). Analyze how animal behaviors (e.g., feeding, mating, social behaviors, communication, territoriality, dominance hierarchies) maximize reproductive success. Explore successful reproductive behaviors of aquatic organisms (e.g., reproductive dormancy). Create posters, bulletin boards, or multimedia presentations giving examples and explaining behaviors.</li> <li>• explore circadian rhythms (e.g., metabolic role, body temperature, feeding times) and cirannual behaviors (e.g., breeding, hibernation). Investigate behavioral responses of organisms in tidal regions. Identify internal or external cues that regulate these behaviors and explore their adaptive nature. See <i>WOW! The Wonders of Wetlands</i> activity Salt Marsh Players</li> <li>• research seasonal affective disorder. Create informational brochures describing what can be done to alleviate or eliminate symptoms. Distribute through healthcare facilities (<i>WP-Transactive</i>).</li> <li>• investigate migration in animals (e.g., whales, butterflies, birds). Explore methods (e.g., piloting, orientation, navigation) and cues (e.g., Sun, magnetic fields, star patterns, chemical concentration gradients) used to find their destinations. Create multimedia presentations for other schools demonstrating how animals migrate.</li> </ul>	

**High School Science  
Model I: Life Science**

**NOTES**

## **High School Science Model I: Agri-biology**

### **Course Overview:**

This one-credit course uses agricultural contexts to present the life science content outlined in the *Program of Studies*. As students study practical agricultural concepts, they apply scientific ways of thinking and working to real-life problems. During their study of agri-biology, students perform many practical tasks. They create models, extract DNA, analyze DNA fingerprints, construct tables and graphs to classify and analyze data, and test soils. Students also participate in cooperative and collaborative groups, use technology to solve problems, and participate in field trips to apply scientific concepts to agricultural and environmental problems. Students develop an understanding of many concepts such as cell structure and function, morphology and physiology of agriculturally significant animals, heredity principles and inheritance patterns, genetic engineering, animal behavior, biological change, interdependence of plants and animals, and the flow of matter and energy through ecosystems.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions may be included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding (in bold print) and essential questions along with related academic expectations and correlations to the *Program of Studies* and agri-biology content chart. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content or content from agri-biology content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding and Essential Questions:**

**How do cell structure, function, and processes affect living things?**

**What is the molecular basis of heredity?**

- How does DNA affect organisms' morphology and physiology?

**How do behavioral patterns ensure reproductive process?**

- How do agriculturalists manipulate reproductive success?

**What are the processes of biological change?**

- How do agricultural crops and animals reflect diversity in nature?

**How are organisms within ecosystems interdependent?**

- How do agricultural processes alter ecosystems?
- How are croplands different from natural ecosystems?

**How do organ systems work together to keep animals healthy?**

**What skills and knowledge must I have to be successful in an agricultural career in Kentucky?**

**High School Science  
Model I: Agri-biology**

<b>Academic Expectations</b>	<b>Content/Process</b>
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify functions of plant structures.</li> <li>• identify environmental factors that affect crop production.</li> <li>• identify physical properties and biological components of soils.</li> <li>• identify structural, physiological, and behavioral characteristics of vertebrates and invertebrates.</li> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> <li>• communicate recurring themes and processes of biology and chemistry common to all organisms.</li> <li>• identify major farm animal species, appropriate livestock enterprises, and their influence on world agriculture trends.</li> <li>• compare appropriate health programs for animal species.</li> <li>• compare anatomy, breeding, and reproduction of animal species.</li> <li>• explore career opportunities and job qualifications in agri-biology.</li> <li>• integrate Future Farmers of America (FFA) leadership activities.</li> </ul>

**High School Science  
Model I: Agri-biology**

**NOTES**

**High School Science  
Model I: Agri-biology**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><b>How do cell structure, function, and processes affect living things?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> <li>• investigate photosynthesis, cellular respiration, and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• communicate recurring themes and processes of biology and chemistry that are common to all organisms.</li> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> </ul> <p style="text-align: right;"><i>(Continued on page 60)</i></p>



**High School Science  
Model I: Agri-biology**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine slides of various cell types from multicellular organisms. Discuss relationships between structure of different cell types and their functions. Determine common structures and functions of all cells. Create models of plant and animal cells, using biodegradable materials. Label and color code each organelle and describe its function. Identify organelles common to both and unique to each.</li> <li>• compare functions of cell organelles to school or city structures that have similar functions. Create multimedia presentations showing comparisons.</li> <li>• investigate use of microbes to produce substances needed by other plants, animals, and humans (e.g., insulin). Create illustrated flow charts, demonstrating processes. Write editorials, explaining need for increased funding for basic research in microbiology. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> <li>• research use of biotechnology and genetic engineering in development of new livestock breeds, plants, and disease control. Evaluate alternatives to genetic engineering methods. Evaluate impact of genetic engineering on their community and predict short- and long-term consequences. Develop policies that regulate use of genetic engineering. Present findings and recommendations to agricultural extension agents.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use CD-ROMs, digital cameras, computers, video, and audio to create multimedia presentations for extension agents.</i></p> <ul style="list-style-type: none"> <li>• investigate how and when cells differentiate. Read “How Does a Single Cell Become a Whole Body.” Trace formation of germ layers and identify organ systems that develop from each layer. Create informational bulletin boards, collages, or posters to display in classrooms.</li> </ul>	

**High School Science  
Model I: Agri-biology**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 58)</i> <b>How do cell structure, function, and processes affect living things?</b></p>	<p><b>Students will</b> <b>Program of Studies</b> <b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures, and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b> <b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• communicate recurring themes and processes of biology and chemistry that are common to all organisms.</li> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> </ul>

**High School Science  
Model I: Agri-biology**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• observe chicken embryos at 24, 48, and 72 hours of development. Record observations throughout incubation period, including humidity, temperature, turning rate, weight, and stage of maturity. Compare in graphic organizers features at different stages. Identify body structures of developing embryos and explain their functions. Investigate factors that interfere with embryonic development. Create multimedia presentations for poultry farmers to explain embryonic development.</li><li>• investigate prenatal and postnatal growth and development. Compare growth rate of organ systems after animals are born. Write summaries in learning logs, describe growth rates of different organ systems and effect growth rate has on animals.</li></ul>	<p>Julie needs to develop confidence in her ability to contribute positively in class. Her family owns and manages a poultry industry. Julie will arrange for her class to visit and observe the chick incubation and hatching process (<i>Types of extensions: motivation, participation</i>).</p>

**High School Science  
Model I: Agri-biology**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><b>What is the molecular basis of heredity?</b></p> <p>How does DNA affect organisms' morphology and physiology?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate DNA.</li> <li>• investigate encoding and replication.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> <li>• compare anatomy, breeding, and reproduction of animal species.</li> </ul> <p style="text-align: right;"><i>(Continued on page 64)</i></p>

**High School Science  
Model I: Agri-biology**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine structure of DNA. Extract DNA from onion cells to observe color, texture, and threadlike structure. Construct models of DNA molecules and show locations of genes. Display models in science labs. Write articles for school newspapers concerning future applications of information derived from the Human Genome Project (<i>WP - Transactive</i>).</li> <li>• research use of DNA fingerprinting in food and animal science. Run DNA fingerprinting through electrophoresis to show how DNA fragmentation analysis can be used for identification. Create multimedia presentations explaining how public health safety workers track spread of bacteria (e.g., <i>Listeria</i>) and other pathogens. Explain procedure and results in learning logs.</li> <li>• read Watson’s account of his discovery of DNA structure. Summarize method used and evidence gathered. Investigate lives of other researchers who were involved in discovery (e.g., Francis Crick, Rosalind Franklin, Maurice Wilkins). Write resumes for each researcher.</li> <li>• examine replication. Use models of DNA molecules to show how one DNA molecule can form exact duplicate of itself.</li> <li>• investigate protein synthesis, including transcription and translation. Explore evolutionary significance of common genetic language. Create models to demonstrate process.</li> <li>• distinguish between simple Mendelian inheritance (e.g., coat color in rabbits), multiple allelic inheritance, and polygenic inheritance (e.g., cob length in corn).</li> <li>• create hypothetical corn plants, using different colored paper clips for traits (e.g., height, leaf color, seed color). Record phenotypes and genotypes in learning logs. Investigate traits controlled by extranuclear DNA (e.g., mitochondrial). Determine inheritance patterns in plants (e.g., variegated leaf trait of <i>Brassica rapa</i>). Write feature articles for agricultural journals explaining differences in inheritance patterns (<i>WP - Transactive</i>).</li> <li>• study family relationships of livestock, using phenotypic records extending over two or more generations. Choose traits (e.g., dwarfism in Hereford cattle) and gather information about traits ancestors exhibited to complete pedigrees. Use Punnett squares to determine apparent inheritance patterns for that trait.</li> </ul>	<p>Betty and Agnes already have an understanding of DNA as it applies to genetics. They will use the Internet and other sources to discover new or potential uses for DNA technologies. They will communicate with forensic medicine specialists about their findings and create presentations to share with their class (<i>Types of extensions: magnitude, motivation, resources and materials, complexity</i>).</p> <p>Bryan and Melissa are able to learn with their peers, but have difficulty following directions. They will pair with classmates to investigate phenotypic and genotypic inheritance patterns (<i>Types of extensions: complexity, resources and materials</i>).</p>

**High School Science  
Model I: Agri-biology**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 62)</i>  <b>What is the molecular basis of heredity?</b>             How does DNA affect organisms' morphology and physiology?</p>	<p><b>Students will</b>  <b>Program of Studies</b>  <b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate DNA.</li> <li>• investigate encoding and replication.</li> </ul> <p><b>Scientific Inquiry</b>  <b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> <li>• compare anatomy, breeding, and reproduction of animal species.</li> </ul>

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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• use sire summaries to distinguish between performance testing and progeny testing. Examine copies of pedigree papers of several animals of same breed. Compare animals based on pedigrees and performance records. Develop reports for agricultural advisory committees on beef breed improvement in their county. Investigate benefits of hybrid vigor.</li><li>• research physical characteristics of economically important agricultural animals (e.g., sheep, cattle, swine). Determine whether traits are influenced more by genetics or environment.</li><li>• obtain copies of dairy cattle sire catalogs and lineage classification data from dairy herds. Using data on females from herd records and data on sires from catalogs, choose most desirable sires for cows in that herd. Write introductions for catalogs describing how the information contained within can be used to improve herd quality (<i>WP - Transactive</i>).</li></ul>	

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How do behavioral patterns ensure reproductive success?</b></p> <p>How do agriculturalists manipulate reproductive success?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> <li>• investigate behavioral responses.</li> <li>• analyze patterns of behavior.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All Program of Studies scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• compare anatomy, breeding, and reproduction of animal species.</li> <li>• identify functions of plant structures.</li> <li>• identify environmental factors that affect crop production.</li> </ul> <p style="text-align: right;"><i>(Continued on page 68)</i></p>



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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate life cycle of flowering plants. Create models, bulletin boards, or collages demonstrating cycles. Label all plant parts and describe function. Summarize in learning logs why knowledge of plant life cycles is important to agriculturalists.</li> <li>• investigate various forms of pollination (e.g., wind, water, insect). Create charts to compare forms of pollination in plant families. Investigate coevolution between plants and pollinators. Design and conduct investigations to determine effects of absence of pollinators on plant reproduction. Research use of bees as pollinators and diseases that have reduced bee populations. Write articles for agricultural journals explaining impact of reduced bee populations on crops (<i>WP - Transactive</i>).</li> <li>• investigate reactants and products of photosynthetic chemical reaction. Use light screens on Geranium leaves. Conduct iodine tests after several days to determine effects of light and absence of light on production of carbohydrates in leaves. Place <i>Elodea</i> plants into carbonate solutions under bright light. Count oxygen bubbles as they emerge from cut ends of <i>Elodea</i> plants. Analyze activities and produce an empirical word equation for photosynthetic chemical reaction. Investigate ways to increase or decrease rate of oxygen production. Compare photosynthesis in plants adapted to life in arid conditions with plants growing in Kentucky.</li> <li>• investigate vegetative propagation (e.g., rhizomes, stolens, tubers, grafting). Compare advantages and disadvantages to plants and humans of vegetative propagation over sexual reproduction. Propagate different species of plants in class and compare results. Distribute plants at parents' night.</li> <li>• research behaviors (e.g., social, reproductive, feeding) of agricultural animals. Determine how livestock producers deal with animal behaviors (e.g., feeding schedules, facility designs). Observe flock or herd animals, listing observed behaviors and determine which behaviors are instinctive and which are learned. Shadow county extension agents or veterinarians to determine how agriculturalists deal with problems related to livestock behaviors.</li> </ul>	

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Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies and Agri-biology Content Chart
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 66)</i>  <b>How do behavioral patterns ensure reproductive success?</b>             How do agriculturalists manipulate reproductive success?</p>	<p><b>Students will</b>  <b>Program of Studies</b>  <b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate behavioral responses.</li> <li>• analyze patterns of behaviors.</li> </ul> <p><b>Scientific Inquiry</b>  <b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• compare anatomy, breeding, and reproduction of animal species.</li> <li>• identify functions of plant structures.</li> <li>• identify environmental factors that affect crop production.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare size and shape of sperm and egg cells of animal species. Check semen samples under microscopes for motility. Determine if any sperm cells are abnormal. Observe color, mobility, progressiveness, and abnormalities (e.g., tailless, two tails, two heads, pear-shaped heads). Examine prepared slides of ovary. Sketch ovary, including mature follicles and eggs. Prepare lab reports comparing features of each reproductive cell and explaining how traits of each help them perform their functions.</li> <li>• investigate codominants in livestock (e.g., shorthorn cattle). Design experiments to determine probability of different phenotypic expressions (e.g., coat color) in first and second generation offspring. Write lab reports detailing procedures and results to share with peers.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use integrated software package to create tables and charts for analysis.</i></p> <ul style="list-style-type: none"> <li>• research use of different breeding procedures in agricultural animals (e.g., horses, turkeys) and crops (e.g., corn). Write to breed associations to request information on disqualification of animals or plants for different breeds. Compare information from various associations. Interview livestock producers to determine traits for which they selectively breed. Investigate preferred plant traits in economically important crops. Research impact of selective breeding on agricultural animals and crops. Debate ethical and environmental implications of selective breeding.</li> <li>• demonstrate insemination process using female reproductive tracts acquired from biological supply houses or local slaughter houses. Identify different parts of female reproductive tracts. Identify appropriate insemination tools needed. Use tools to demonstrate insemination process, by placing dye solution in reproductive tract. Follow accepted procedures to dissect tracts to locate point where dye was deposited. Sketch reproductive tracts, identify parts, and describe steps of insemination process in lab reports.</li> <li>• survey local livestock producers to determine artificial insemination and embryo transfer techniques used. Investigate reasons for employing these techniques. Compare costs of semen and embryos from different breeders and examine reasons for cost differences. Write feature articles for agricultural journals explaining advantages and disadvantages of techniques (<i>WP - Transactive</i>).</li> </ul>	<p>Justin and Juanita have difficulty following directions. They are given instructions one day prior to assignment. They will be paired with peers to complete insemination procedures (<i>Types of extensions: time, motivation, environment, participation, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>What are the processes of biological change?</b></p> <p>How do agricultural crops and animals reflect diversity in nature?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify functions of plant structures.</li> <li>• identify structural, physiological and behavioral characteristics of vertebrates and invertebrates.</li> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate history of domestication of economically important plants (e.g., wheat, corn, sugar cane). Create illustrated time lines to document milestones.</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Use software to create time lines.</i></p> <ul style="list-style-type: none"> <li>• create plant models, labeling, describing, and explaining each structure. Write children’s books describing functions of plant parts (<i>WP - Transactive</i>).</li> <li>• examine plant cell structures with light microscopes. Create cell models, labeling basic cell structure (e.g., cell wall, cell membrane, nucleus, cytoplasm, chloroplast, vacuoles). Describe functions of cell structures on mechanical rather than biochemical level (e.g., nucleus and control of cell function, chloroplast and photosynthesis, mitochondria and respiration, cell membrane and transport).</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Use light microscope or flex cams to examine cell structures.</i></p> <ul style="list-style-type: none"> <li>• investigate plant defenses (e.g., poisons, thorns, hormones) and coevolution between plants and herbivores. Identify selective pressures acting on both herbivores and plants. Write news articles for agricultural journals explaining how plants reduce predation (<i>WP - Transactive</i>).</li> <li>• investigate irradiation on plant seeds to induce mutations and produce new varieties (e.g., peppers, soybeans, cotton, sugar cane, sunflowers, irises, roses, chrysanthemums, azaleas). Write articles about benefits and drawbacks of irradiation (<i>WP - Transactive</i>).</li> </ul>	<p>Willie and Ann understand cell structure and have participated in class discussions. They have difficulty manipulating objects and will work with small groups to produce models of cells (<i>Types of extensions: resources and materials, complexity, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>What are the processes of biological change?</b></p> <p>How do agricultural crops and animals reflect diversity in nature?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify functions of plant structures.</li> <li>• identify structural, physiological and behavioral characteristics of vertebrates and invertebrates.</li> <li>• relate fundamentals of genetics to organisms' morphology, physiology, and inheritance patterns.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore diversity among plants. Identify major highlights of plant evolution (e.g., vascular tissue) and impact on plant diversification. Identify divisions within plant kingdom and describe their characteristics and significant adaptations. Use graphic organizers to compare characteristics. Create bulletin boards, collages, or multimedia presentations on economic or medical importance of plants from each division, including local agricultural products.</li> <li>• compare monocot and dicot seeds. Place corn and bean seeds between wet blotters or paper towels and keep moist. Bisect and compare seeds after one day and after five days. Sketch, identify and label structures, and describe function of seed structures.</li> <li>• investigate evolution of various species (e.g., horses). Create murals depicting phylogenetic trees. Discuss how adaptations are advantageous to increased survival.</li> <li>• investigate early systems of classification (e.g., Aristotle). Compare Aristotle’s system to that of Linnaeus. Create dichotomous keys for domestic plants and animals. Display in science lab.</li> <li>• examine differences between tamed and domesticated animals. Create collages, bulletin boards, or multimedia presentations for class members, explaining differences. Compare traits of wild and domesticated pigs. Identify traits that resulted from natural selection or selective breeding. Explain how wild pigs are adapted to their environment. Research history of breeds of livestock, including origin of animals, traits that were selected for through natural selection, traits that were selected for through selective breeding, and changes of breeds over time. Create illustrated histories of breeds to display at county fairs.</li> </ul> <p><i><b>Technology suggestion:</b> Use CD-ROMs, digital cameras, computers, video, and audio to create multimedia presentations.</i></p>	<p>Bambi and Renee are interested in the domestication of certain animals. They finish their class assignment ahead of other students and develop short skits to share with the class on the domestication of cats and dogs (<i>Types of extensions: motivation, complexity, demonstration of learning</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How are organisms within ecosystems interdependent?</b></p> <p>How do agricultural processes alter ecosystems?</p> <p>How are croplands different from natural ecosystems?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• analyze energy flow through ecosystems.</li> <li>• examine the factors that influence the interactions between organisms.</li> <li>• explore how human activities alter ecosystems.</li> <li>• recognize that living systems require energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All Program of Studies scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify environmental factors that affect crop production.</li> <li>• identify physical properties and biological components of soils.</li> </ul> <p style="text-align: right;"><i>(Continued on page 76)</i></p>



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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explain how stability of biochemical cycles may be disrupted by agricultural behaviors (e.g., cultivation of grasslands, fertilizer run-off). Survey agriculturalists and develop brochures of practices that reduce negative impacts on ecosystems (<i>WP - Transactive</i>). Role-play town councils and agriculturalists as they discuss issues.</li> <li>• investigate relative abundance of carbon, hydrogen, nitrogen, and oxygen in living things. Identify major compounds found in living things (e.g., CO<sub>2</sub>, H<sub>2</sub>O, proteins, carbohydrates). Trace movement of these elements between living and nonliving systems. Identify processes (e.g., respiration, photosynthesis, bacterial role in nitrogen cycle) critical to each cycle. Write short stories assuming roles of elements or molecules as they cycle through biosphere. (Element or molecule must pass through at least two organisms).</li> <li>• design food chains showing humans' position as primary and secondary consumers. Construct food webs and analyze humans' position in energy transfer. Compare vegetarian and non-vegetarian diets to determine effects of each on environment. Analyze advantages and disadvantages. Determine ingredients needed to produce a cow, including land, forage, fuel, fertilizers, corn, soybeans, insecticides, herbicides, antibiotics, hormones, and water. Calculate costs, labor, and profit or loss. Debate economic versus environmental advantages. Write newspaper articles explaining distribution and use of resources among nations of the world (<i>WP - Transactive</i>).</li> <li>• create flow charts illustrating path of energy from Sun to humans and from humans to environment. Label charts, identifying major processes involved in each energy transformation.</li> <li>• investigate energy relationships between photosynthesis and respiration. Use models to illustrate chemistry of photosynthesis and cellular respiration. Write children's stories about life of plants describing when and where photosynthesis and respiration take place (<i>WP - Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use desktop publishing software to create books.</i></p>	

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 74)</i>  <b>How are organisms within ecosystems interdependent?</b>             How do agricultural processes alter ecosystems?             How are croplands different from natural ecosystems?</p>	<p><b>Students will</b>  <b>Program of Studies</b>  <b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• analyze energy flow through ecosystems.</li> <li>• examine the factors that influence the interactions between organisms.</li> <li>• explore how human activities alter ecosystems.</li> <li>• recognize that living systems require energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b>  <b>All Program of Studies scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify environmental factors that affect crop production.</li> <li>• identify physical properties and biological components of soils.</li> </ul>

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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate nitrogen cycle within biosphere. Examine nodules from roots of legumes (e.g., clover, alfalfa) under microscopes after staining with methylene blue. Sketch nitrogen-fixing bacteria. Write summaries in learning logs about importance of bacteria to nitrogen cycle.</li> <li>• investigate ways to change pH of soils. Interview agricultural extension agents to determine methods of changing pH. Analyze cost and efficacy of each method. Create how-to articles for agricultural publications (<i>WP - Transactive</i>).</li> <li>• design experiments to model processes that led to Dust Bowl of 1930s. Research soil conservation practices and techniques to prevent another Dust Bowl. Compare conservation practices and techniques of past with those of present in multimedia presentations.</li> <li>• investigate physical and chemical characteristics of ponds, springs, and rivers near agricultural cropland. Examine dissolved oxygen levels, turbidity, and bacterial growth. Compare data with students in other regions of Kentucky via Kentucky Water Watch Program.</li> <li>• investigate effects of pollutants (e.g., acid rain) on agricultural crops. Design and conduct investigations to measure acidity of rain water. Map Kentucky rain water acidity levels and compare crop loss due to pollutants with other Kentucky students.</li> <li>• investigate early and modern pesticides, comparing benefits of each. Debate effects of pesticides on beneficial organisms (e.g., soil invertebrates, insects, birds, mammals). Research pests (e.g., fungi, grasshoppers, corn borers) that damage major world crops. Research use of biological control of insects (e.g., ladybugs to control aphids). Produce articles for agriculturalists advocating biological control of pests (<i>WP - Transactive</i>).</li> <li>• investigate benefits and losses to crops due to recent weather patterns (e.g., floods, drought, wind, hail). Create collages of current news articles on agricultural impact by environmental forces. Research weather prediction techniques. Research current studies on causes of weather patterns (e.g., Arizona, 1998) and discuss validity of studies. Interview local agriculturalists to determine impact of economic losses due to weather. Write articles on impact weather has on agricultural crops and animals (<i>WP - Transactive</i>).</li> </ul>	

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How do organ systems work together to keep animals healthy?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify structural, physiological, and behavioral characteristics of vertebrates and invertebrates.</li> </ul>

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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• identify and describe organs and organ systems and anatomical structures of important agricultural animals. List organs common to all and those that differ. Explain physiological functions of each structure. Research common diseases that affect each system and methods used to diagnose and treat diseases. Create brochures to be distributed at county extension offices that describe diseases and treatments (<i>WP - Transactive</i>).</li></ul>	

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<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Agri-biology Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>What skills and knowledge must I have to be successful in an agricultural career in Kentucky?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Sciences</b></p> <ul style="list-style-type: none"> <li>• examine the factors that influence the interactions between organisms.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Agri-biology Content Chart</b></p> <ul style="list-style-type: none"> <li>• compare appropriate health programs for animal species.</li> <li>• identify major farm animal species, appropriate livestock enterprises, and their influence on world agriculture trends.</li> <li>• explore career opportunities and job qualifications in agri-biology.</li> <li>• integrate FFA Leadership activities.</li> </ul>

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Model I: Agri-biology**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine contributions of livestock industry to society. Investigate use of animals and animal by-products in medical research and development of food products. Prepare multimedia presentations showing uses of animals and animal by-products.</li> </ul> <p><i>Technology suggestion: Use CD-ROMs, digital cameras, computers, video, and audio to create multimedia presentations.</i></p> <ul style="list-style-type: none"> <li>• investigate other issues of animal welfare (e.g., raising animals in confinement, animal health, management practices, continuous ingestion of antibiotics). Investigate role of food pyramid in determining proper diet selections for animals. Examine laws governing use of agricultural animals. Role-play public hearing between National Cattlemen’s Association, United States Department of Agriculture official, People for the Ethical Treatment of Animals, and different types of vegetarians. Debate animal welfare issues.</li> <li>• search Internet for alternatives to Kentucky’s tobacco crop. Investigate new and nontraditional crops as possible solutions. Research economic and social implications. Write letters to congressmen explaining results of research and recommendations for alternative crops (<i>WP - Transactive</i>).</li> </ul> <p><i>Technology suggestions: Use Internet to conduct research. Use e-mail to communicate with congressmen.</i></p> <ul style="list-style-type: none"> <li>• research scientific technologies (e.g., hydroponics, tissue culturing) that enhance agricultural endeavors. Create models of food supply systems using hydroponics and tissue culturing technology. Compare hydroponic method of growing crops to traditional methods. Debate advantages (e.g., reduction of labor costs) and disadvantages (e.g., disease introduction).</li> </ul>	<p>Teresa and Larry will create brochures to promote the introduction of new economic and agricultural crops for Kentucky. They will collaborate with agriculturalists (e.g., universities, colleges, county extension offices) to discover feasibility of their suggestions (<i>Types of extensions: motivation, complexity, demonstration of learning, resources and materials</i>).</p>

**High School Science  
Model I: Agri-biology**

**NOTES**



## **High School Science**

### **Model I: Medical Science**

#### **Course Overview:**

This one-credit course uses health occupations as a vehicle to present the life science content outlined in the *Program of Studies*. The course is interdisciplinary in nature and integrates academic expectations and activities with the disciplines of life science, mathematics, health, social studies, language arts, arts and humanities, and vocational studies. During their study of medical science, students will gain an understanding of the normal structure and function of the human body through scientific inquiry. Life science conceptual understandings, applications, and connections make this science relevant to students. Anatomy, physiology, physics, and chemistry concepts are reinforced with real-life analogies and health-related examples are used to illustrate potentially difficult scientific concepts.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions may be included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies* and medical science content chart. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content or content from the medical science content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding and Essential Questions:**

##### **How do cell structure, function, and processes affect living things?**

- What disease processes result from changes in my body's cell structure and functions?

##### **What is the molecular basis of heredity?**

- How do errors in decoding and transmission of genetic traits affect my health?

##### **What are the processes of biological change?**

- How does aging affect the functioning of my body systems?
- How does the function of microorganisms in my world affect me?

##### **How are organisms within ecosystems interdependent?**

- What is my role in the cycling of matter and the flow of energy through ecosystems?
- What is my role in an ecosystem?
- How are chemical reactions responsible for the maintenance, growth, and development of my body?

## **High School Science Model I: Medical Science**

### **How do body systems work together to keep me healthy and active?**

- How does my body maintain homeostasis?

### **Why do organisms behave the way they do?**

- How does my environment affect my behavior?
- What factors determine my marital status and the size of my family?

### **Why is a knowledge of chemistry and physics necessary in medical careers?**

- How will participation in student organizations help prepare me for a career in health care?

**High School Science  
Model I: Medical Science**

<b>Academic Expectations</b>	<b>Content/Process</b>
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• relate importance of chemistry and physics to students studying various body processes and the health professions.</li> <li>• investigate radioisotopes used in treatment and diagnosis of disease.</li> <li>• explain how lungs and kidneys help maintain constant and proper blood pH.</li> <li>• identify and analyze human body systems and how their components work together or affect each other.</li> <li>• compare body fluids and their functions.</li> <li>• describe acid/base balance of human body.</li> <li>• classify major disease processes affecting each body system.</li> <li>• relate medical terminology to body organs and systems.</li> <li>• integrate leadership activities of Health Occupations Students of America (HOSA).</li> <li>• apply mathematics, science, and communications skills to technical content.</li> <li>• relate radioisotopes to the treatment and diagnosis of disease.</li> </ul>

**High School Science  
Model I: Medical Science**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Medical Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How do cell structure, function, and processes affect living things?</b></p> <p>What disease processes result from changes in my body’s cell structure and functions?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify and analyze human body systems and the ways their components work together or affect each other.</li> <li>• classify major disease processes affecting each body system.</li> <li>• relate medical terminology to body organs and systems.</li> <li>• investigate radioisotopes in the treatment and diagnosis of disease.</li> </ul>

## High School Science Model I: Medical Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create cell models, using nontoxic, biodegradable materials, to illustrate appearance and position of various organelles within cells. Produce keys that include descriptions of organelle functions.</li> <li>• trace path of molecules (e.g., glucose, water) as they arrive at cell membranes and move through cells. Create bulletin boards demonstrating movement.</li> <li>• examine slides of various cell types from multicellular organisms. Discuss relationships between structure of different cell types and their functions. Determine what structure and functions all cells have in common.</li> <li>• compare functions of cell organelles to school or city structures that have similar functions. Create multimedia presentations showing comparisons.</li> <li>• research common diseases (e.g., cancer, influenza, diabetes, cystic fibrosis). Trace disease processes to changes in organ systems or cells. Develop informational brochures that describe diseases and changes they cause at the cellular and organ levels. Distribute brochures through county health departments.</li> <li>• investigate how and when cells differentiate. Read “How Does a Single Cell Become a Whole Body.” Trace formation of germ layers and identify organ systems that develop from each layer. Create informational bulletin boards, collages or posters. Examine drugs (e.g., thalidomide, alcohol) and diseases (e.g., rubella) that interfere with differentiation and organogenesis. Explain U.S. governments’ recommendation that pregnant women abstain from drinking alcohol. Write articles to encourage pregnant women not to drink. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> <li>• investigate organ systems (e.g., respiratory, digestive). Work in small groups to create physical models of systems. Research major diseases of each body system and methods used to diagnose and treat diseases (e.g., radioisotopes, surgery, drugs). Analyze how breakdown or disease in one system affects others.</li> </ul> <p><b>Technology suggestions:</b> <i>Use Internet to conduct research. Create multimedia presentations for peers describing structure, function, and major diseases of each system.</i></p>	<p>Bill has difficulty expressing concepts in written form, but works well with manipulatives. Provide Bill various materials to create cell models. Models may be patterned on easily recognizable pictures (<i>Types of extensions: resources and materials, demonstration of knowledge</i>).</p> <p>Alicia has difficulty understanding complex words or directions. Provide her with picture cards to introduce new vocabulary and limit directions to three steps at a time. Alicia will need additional time to complete assignment (<i>Types of extensions: resources and materials, complexity</i>).</p> <p>Cameron, Bart, Amanda and Alicia need opportunities to research and apply advanced level findings to real problems (e.g., they need to practice good listening skills). These students will prepare and participate in formal debates on whether the U.S. government should recommend that pregnant women abstain from drinking alcohol (or using other substances which interfere with differentiation and organogenesis). The teacher may stipulate that students will not know whether they represent affirmative or negative sides until day before debate (<i>Types of extensions: purpose and appropriateness, complexity, time, resources and materials, procedures and routines, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Medical Science**

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies and Medical Science Content Chart
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>What is the molecular basis of heredity?</b></p> <p>How do errors in decoding and transmission of genetic traits affect my health?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate DNA.</li> <li>• investigate encoding and replication.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate radioisotopes to the treatment and diagnosis of disease.</li> <li>• apply mathematics, science and communication skills to technical content.</li> </ul>

**High School Science**  
**Model I: Medical Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create and use models to illustrate DNA structure, replication, and protein synthesis. Investigate mutation by substituting DNA bases. Using models, demonstrate how changes in DNA affect structure of proteins and cause genetic disorders. Develop informational brochures on genetic disorders describing diseases, their inheritance patterns, and community resources for interested families. Distribute brochures through Youth Services Centers (<i>WP - Transactive</i>).</li> <li>• compare observed and expected outcomes of genetic crosses using both Punnett squares and basic probability. Create pedigree charts for observable genetic traits (e.g., tongue rolling, widow’s peak, hitchhiker’s thumb) or disorders. Include at least three generations. Use information from families, acquaintances, or history (e.g., hemophilia in descendants of Queen Victoria) to create charts. Role-play genetic counselors. Conduct mock counseling sessions for couples with histories of genetic problems.</li> </ul> <p><i>Technology suggestions: Use Internet to conduct research. As alternative to brochures, students could develop multimedia presentations.</i></p> <ul style="list-style-type: none"> <li>• investigate factors (e.g., radiation) that alter DNA. Research effects of radiation on Japanese after the bombing of Hiroshima and Nagasaki. Read <i>Hiroshima</i> and discuss impacts of bombing on individuals and Japanese society. Correspond with survivors and their families about problems they still face.</li> </ul> <p><i>Technology suggestion: Communicate with survivors via e-mail.</i></p> <ul style="list-style-type: none"> <li>• research ways radiation can be used to diagnose and treat diseases. Shadow radiation technologists at local healthcare facilities. Create brochures on medical uses of radiation for distribution at healthcare facilities (<i>WP-Transactive</i>).</li> </ul>	<p>Moses and Molly are two students in the gifted and talented program. They have demonstrated mastery with many basic biology concepts. They should be provided opportunities to shadow genetic counselors (<i>Types of extensions: purpose and appropriateness, motivation</i>).</p> <p>Lum is an avid reader and history enthusiast. He has extensive knowledge of events surrounding WWII in the South Pacific. Allow him to select projects that will extend his knowledge (<i>Types of extensions: participation, pace</i>).</p>

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Model I: Medical Science**

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies and Medical Science Content Chart
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>What are the processes of biological change?</b></p> <p>How does aging affect the functioning of my body systems?</p> <p>How does the function of microorganisms in my world affect me?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate medical terminology to body organs and systems.</li> </ul>



**High School Science  
Model I: Medical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research and summarize theories about origin of life. Survey community members to determine their beliefs. Read articles and literature (e.g., <i>Summer for the Gods</i>) regarding the teaching of evolution. Collect data and create bar graphs, showing differences among groups (e.g., male, female, African Americans, American Indian). Write personal essay describing their own beliefs. Debate issues related to different theories. Write editorials for school newspapers supporting beliefs on the teaching of evolution (<i>WP - Transactive</i>).</li> <li>• research news and magazine articles that document microorganisms' resistance to drugs (e.g., antibiotics). Investigate difficulties researchers have in developing vaccines for diseases (e.g., HIV, malaria, common cold, influenza). Interview doctors and pharmacists on proper use of antibiotics. Create flyers or posters to display in drugstores.</li> <li>• research frequency of genetic disorders (e.g., sickle-cell anemia in African Americans, cystic fibrosis in Caucasians, methemoglobinemia in Eastern Kentuckians) prevalent in different segments of human population. Create graphs comparing county, state, and national data. Identify factors responsible for prevalence of these disorders within different segments of population. Research cause and inheritance patterns of these disorders and medical tests used to identify genetic disorders in newborns. Create public service announcements for local radio or television stations to increase community knowledge of these disorders. Use Internet to conduct research. See The Nation's Prevention Agency: Centers for Disease Control and Prevention. <a href="http://www.cdc.gov/">http://www.cdc.gov/</a> See Centers for Disease Control and Prevention: Health Information <a href="http://www.cdc.gov/diseases/diseases.html">http://www.cdc.gov/diseases/diseases.html</a></li> <li>• investigate potential causes of changes in human gene pool. Debate how modern technologies (e.g., expensive medical treatments, genetic engineering, genetic testing) and lifestyles affect human gene pool.</li> <li>• observe microorganisms (e.g., bacteria, dinoflagellates, protozoans). Investigate beneficial and detrimental roles microorganisms play in environment (e.g., fermentation, food spoilage, diseases, decay, bioluminescence, food digestive processes, production of vitamins and antibiotics, nitrogen fixation). Create illustrated children's books describing microorganisms and their roles (<i>WP - Transactive</i>).</li> </ul>	<p>Jay and Rhonda enjoy research and are interested in genetics. They work better in small groups and require reinforcement. Rules for group conduct and expectations should be posted and reinforcements provided (<i>Types of extensions: motivation, procedures and routines</i>).</p> <p>Since her accident, Jimmie Dee needs additional time to complete assignments. She will do an in-depth study of one organism, using visual aids and posters with steps outlined (<i>Types of extensions: complexity, time, magnitude, environment</i>).</p>

**High School Science  
Model I: Medical Science**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Medical Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How are organisms within ecosystems interdependent?</b></p> <p>What is my role in the cycling of matter and the flow of energy through ecosystems?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• analyze energy flow through ecosystems.</li> <li>• analyze the flow of matter and energy.</li> <li>• investigate behavioral responses.</li> <li>• explore how human activities alter ecosystems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• investigate advances that have effects on science and society.</li> <li>• use science to analyze the use of natural resources.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate importance of chemistry and physics to students studying the health professions and to various body processes.</li> </ul>

**High School Science**  
**Model I: Medical Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate relative abundance of carbon, hydrogen, nitrogen, and oxygen in living things. Identify major compounds found in living things (e.g., CO<sub>2</sub>, H<sub>2</sub>O, proteins, carbohydrates). Trace movement of these elements between living and nonliving world. Identify critical processes (e.g. respiration, photosynthesis, bacterial role in nitrogen cycle) to each cycle. Assume role of elements or molecules as they cycle through the biosphere. (Element or molecule must pass through at least two organisms.) Develop skits and present to class.</li> </ul> <p><i>Technology suggestion: Use camcorders to videotape skits.</i></p> <ul style="list-style-type: none"> <li>• design food chains showing humans' position as primary and secondary consumers. Use food chains to construct food webs. Analyze humans' position in energy transfer. Compare vegetarian and non-vegetarian diets to determine effects of each on the environment. Determine ingredients needed to produce a cow, including land, forage, fuel, fertilizers, corn, soybeans, insecticides, herbicides, antibiotics, hormones, and water. Write newspaper editorials explaining the distribution and use of resources among nations of the world (<i>WP - Transactive</i>).</li> <li>• research methods used to determine number of calories in foods. Determine number of calories in walnuts by burning the walnuts beneath test tubes filled with water. Compare water temperature before and after burning. Compare number of calories released by lipids, proteins, and carbohydrates. Write informational articles for dieters explaining which type of food provides the most calories and why (<i>WP-Transactive</i>).</li> <li>• investigate mechanisms for heat gain and loss in humans. Research malfunctions in human thermoregulatory system (e.g., heat exhaustion, heat stroke) and use of induced hypothermia during surgery. Design activities to compare effects of physical activity and external environmental stimuli (e.g., temperature, layer of clothing) on regulation of body temperature. Create graphs to illustrate results.</li> </ul> <p><i>Technology suggestions: Use computer-based laboratory equipment to collect data and create graphs.</i></p>	<p>Ann has scored well on a pretest of biology topics. She should be allowed to be a peer tutor for other students in the class and select her own research project. Ann will work with ecologists at the local university research farms to investigate populations of grasses. (<i>Types of extensions: participation, order of learning, level of support</i>).</p>

**High School Science  
Model I: Medical Science**

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies and Medical Science Content Chart
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How are organisms within ecosystems interdependent?</b></p> <p>What is my role in an ecosystem?</p> <p>How are chemical reactions responsible for the maintenance, growth, and development of my body?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• examine the factors that influence the interactions between organisms.</li> <li>• recognize that living systems require energy.</li> <li>• investigate photosynthesis, cellular respiration, and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate importance of chemistry and physics to students studying various body processes and the health professions.</li> <li>• identify and analyze human body systems and how their components work together or affect each other.</li> </ul>

**High School Science**  
**Model I: Medical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• design self-contained ecosystems that support six people. List organisms required to keep ecosystems functioning for three years. Explain role of each organism. Create dioramas of ecosystems. Create and maintain living systems containing at least one producer and one consumer.</li> <li>• compare anaerobic to aerobic respiration. Compare amount of energy produced, chemical reactions, factors affecting rates, location of reactions, and types of cells that carry out each.</li> <li>• explore diversity among microorganisms. Research types of aerobic and anaerobic bacteria (e.g., <i>Staphylococcus aureus</i>, <i>Clostridium botulinum</i>). Discuss potential impacts on human health (e.g., botulism, vitamin K production). Research and categorize antimicrobial drugs. Investigate how antimicrobial drugs disrupt cell processes and/or structures. Create informational brochures explaining how antimicrobial drugs work and distribute at drugstores.</li> <li>• investigate dietary disorders (e.g., anorexia, malnutrition, bulimia) or dietary choices (e.g., vegetarian, diabetic, fad). Identify their effects on cells and organ systems. Write informational brochures for people suffering from these diseases or considering these dietary choices. Interview local healthcare professionals to determine nutritional problems in communities. Create action plans to solve problems and present to health classes.</li> <li>• investigate structure and function of enzymes. Create physical models to illustrate action of enzymes. Investigate how factors, such as temperature, pH, and substrate concentration affect enzyme activity. Use models to illustrate findings.</li> <li>• explore how toxins interfere with chemical reactions in humans. Investigate milk sickness and its historical importance. Read “Land of Milk and Poison” and discuss how medical detectives solved the mystery of milk sickness. Write short stories about how doctors and other healthcare workers solve mysteries of other diseases.</li> <li>• research process of fermentation. Investigate uses and misuses of fermentation products. Make bread and create children’s books explaining the process (<i>WP - Transactive</i>).</li> <li>• create flow charts illustrating path of energy from Sun to humans and from humans to environment. Label charts, identifying major processes involved in each energy transformation.</li> </ul>	<p>Phyllis does not read at the level of her same-age peers. She should be placed in multi-ability groups for activities that require sustained reading (<i>Type of extensions: purpose and appropriateness, complexity, motivation</i>).</p> <p>The teacher is aware that incidences of bulimia and anorexia are significantly higher among intellectually gifted females than among other females. She has assigned clusters of gifted girls to investigate effects of these disorders on cells and organ systems, including their etiologies and treatment. Their activities include meeting with counselors trained in needs of these students for extended discussions related to setting personal goals and dealing with dilemmas of developing talents versus being popular. They will share their presentation with middle school girls selected by gifted and talented specialists (<i>Types of extensions: purpose and appropriateness, motivation, level of support, resources and materials, environment, demonstration of knowledge</i>).</p>

**High School Science  
Model I: Medical Science**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Medical Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How do body systems work together to keep me healthy and active?</b></p> <p>How does my body maintain homeostasis?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate behavioral responses.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• explain how lungs and kidneys help maintain constant and proper blood pH.</li> <li>• describe acid/base balance of the human body.</li> <li>• compare body fluids and their functions.</li> </ul>

**High School Science  
Model I: Medical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate fluid and electrolyte balance. Compare percentages and types of body fluids (e.g., intracellular, extracellular, interstitial, plasma). Identify basic concepts of fluid and electrolyte regulation. Investigate hormonal control. Compare symptoms of water excess and water depletion. Investigate water and salt loss in athletes. Compare sports drinks for important electrolytes. Explain why adequate fluid replacement during exercise is important.</li> <li>• investigate three processes carried out by kidneys (e.g., filtration, reabsorption, secretion). Investigate effects of alcohol and drugs (e.g., diuretics, caffeine) on excretory system. Research how aging affects kidney functions. Create physical models of mammalian kidney to illustrate functions. Interview dialysis patients about the procedure and how it affects their lives.</li> <li>• identify types of acids and bases in the body. Explore buffers and buffer systems (e.g., protein, carbonic acid-bicarbonate, phosphate). Recognize that buffer systems provide only temporary solutions. Investigate how pulmonary mechanisms and renal mechanisms work together to maintain acid-base balance. Investigate disturbances of acid-base balance (e.g., emphysema, renal failure, heart failure, hypotension, neural damage).</li> <li>• research how severe diarrhea can affect blood pH, urine pH, and breathing patterns. Create models of human colon to illustrate importance of its structure to control diarrhea.</li> </ul> <p><i>Technology suggestions: Use software programs that show three-dimensional views of human anatomy.</i></p>	<p>Frank is interested in the effects of exercise on physiological functions, but he understands information presented in concrete manners using simple languages. Frank should receive extra support in strategies to improve his vocabulary development. As motivating tasks, Frank will work with college trainers to observe highly-skilled athletics (<i>Types of extensions: motivation, resources and materials</i>).</p> <p>Carole, Dianna, and Jamahl have expressed desires to become medical doctors. To expose them to fields of medical research and medical practice, these students will be matched with medical researchers under whose supervision they will learn to use state of the art research instruments and procedures to investigate topics agreed upon by researcher, student, and teacher. They will interview and shadow doctors in selected specialty areas. Each student will prepare poster board reports of their activities and career preparation, including options in selected fields (<i>Types of extensions: purpose and appropriateness, environment, level of support, participation, resources and materials, demonstration of knowledge, motivation</i>).</p>

**High School Science  
Model I: Medical Science**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Medical Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>Why do organisms behave the way they do?</b></p> <p>How does my environment affect my behavior?</p> <p>What factors determine my marital status and the size of my family?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate behavioral responses.</li> <li>• analyze patterns of behavior.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• recognize how science influences human population growth.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• identify and analyze human body systems and how their components work together or affect each other.</li> <li>• relate medical terminology to body organs and systems.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>



**High School Science**  
**Model I: Medical Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• research studies done on identical twins separated at birth and raised apart. Compare personalities, mannerisms, habits, and interests of twins. Debate nature-versus-nurture controversy.</li><li>• investigate and compare innate and learned behaviors (e.g., habituation, imprinting, classical and operant conditioning) in graphic organizers. Create multimedia presentations illustrating examples of each.</li></ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use CD-ROMs, digital cameras, computers, video, and audio to create multimedia presentations.</i></p> <ul style="list-style-type: none"><li>• compare advantages and disadvantages of sexual reproduction and asexual reproduction. Explain adaptive advantages of hermaphroditism, altruistic behavior, and mating systems (e.g., polygamy, polyandry, monogamy). Investigate evolution of behavioral patterns that (e.g., breeding seasons, mating behaviors) affect reproductive success of populations.</li><li>• explore how growth of the human population is different from that of other species. Investigate how human activities have affected selected factors (e.g., climate, food shortages, accidental injuries, infectious diseases, predators) that control lives and numbers of other animals. Investigate and graph exponential growth of the human population since 1500s. Investigate warning signals (e.g., ozone depletion, global warming, air and water pollution, loss of biodiversity) that the human population has reached Earth's carrying capacity for the demands of our species. Investigate factors that govern human reproduction (e.g., social mores, traditional beliefs, economics). Debate the question: Have we reached Earth's carrying capacity for the demands of our species?</li></ul>	

**High School Science  
Model I: Medical Science**

<b>Academic Expectations</b>	<b>Guiding and Essential Questions</b>	<b>Correlations to the Program of Studies and Medical Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>Why is a knowledge of chemistry and physics necessary in medical careers?</b></p> <p>How will participation in student organizations help prepare me for a career in health care?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p><b>Medical Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• relate importance of chemistry and physics to students studying the health professions and to various body processes.</li> <li>• utilize activities of the Health Occupation Students of America (HOSA) student organization as an integral component of course content and leadership development.</li> <li>• apply mathematics, science, and communication skills to technical content.</li> </ul>

**High School Science  
Model I: Medical Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop career notebooks describing educational requirements for health related careers, job opportunities, salaries, opportunities for advancement, and job descriptions.</li> </ul> <p><i>Technology suggestion: Use career and desktop publishing software to create notebooks.</i></p> <ul style="list-style-type: none"> <li>• design demonstrations to illustrate chemical basis of clinical procedures and tests (e.g., urinalysis, blood sugar, home pregnancy tests, pH of body fluids).</li> <li>• investigate the relationship between pressure and volume. Demonstrate these relationships using medical equipment (e.g., sphygmomanometer, spirometer). Design models to demonstrate breathing process. Record written explanations of processes in learning logs.</li> <li>• participate in local, regional, state, and national Health Occupations Students of America (HOSA) leadership conferences and competitions.</li> </ul>	<p>Faith learns best when she can discuss ideas with her peers. She will work in cooperative learning groups when participating in state competitions (<i>Types of extensions: level of support</i>).</p>

**High School Science  
Model I: Medical Science**

**NOTES**

## **High School Science**

### **Model II: Introductory Physics with Earth/Space Science**

#### **Course Overview:**

Students develop a conceptual understanding of each guiding question through the use of scientific inquiry. They experience physics and Earth/space science concepts such as motions and forces, conservation of energy and the increase in disorder, interactions of energy and matter, and energy in the Earth system. A scientific inquiry approach uses concrete hands-on experiences that requires students to apply critical thinking skills. For each guiding question, students apply and connect scientific concepts to real life. For this model the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How can we use forces and the laws of motion to understand the motion of objects?
  
- How is the transfer of energy controlled by the conservation of energy and by the tendency toward disorder?
  
- What happens when energy interacts with matter?
  
- How do observable structures on Earth's surface enable us to determine the internal energy sources of the Earth?
  
- How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere?

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How can we use forces and the laws of motion to understand the motion of objects?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul> <p style="text-align: right;"><i>(Continued on page 106)</i></p>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate effects of forces on the motion of objects. Attach strings to carts and then attach each string to one standard mass of 100 grams. Place carts on tables and suspend standard masses over edge of tables. Use suspended masses to pull carts length of tables. Measure time with photogates. Repeat multiple trials with different masses loaded on carts. Use same 100 gram standard mass suspended over table edge for each trial. Produce graphs of distance versus time for different masses loaded on cart. Analyze slope of curves and predict relationships between mass and acceleration while using a constant force. Extend activity by comparing the force used to throw baseballs and golf balls with their mass and acceleration.</li> </ul> <p><i>Technology suggestion: Use photogates and graphing calculators to measure time and graph data.</i></p>	<p>Khoa has been in the country for two and one-half years. He grasps academic vocabulary quickly, has excellent listening skills, but needs help with written expression. Khoa will be paired with two English-speaking lab partners. The teacher will provide him with a list of essential physics vocabulary specific to this experiment (e.g., mass, length, distance, time, carts, photogate, slope, curves, relationship, acceleration). In his initial role as observer, he will write definitions of the vocabulary in Vietnamese to assist in writing the final lab report. During group activity, his role will be to record data as dictated by his lab partners. The English-speaking lab partners' role will be to verify use of comparative language in expressing the relationship between force, mass, and acceleration (e.g., a Limited English Proficiency student might say "the more weight, the slower the cart moves." English-speaking students will provide more appropriate scientific description, such as mass increases, acceleration decreases") (<i>Types of extensions: procedures and routines, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 104)</i>            How can we use forces and the laws of motion to understand the motion of objects?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>



**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate electromagnetic forces. Produce electricity by thrusting one end of strong bar magnet through wire coils that have different numbers of turns. Measure electricity produced. Produce lab reports identifying variables that affect amount of electricity created. Compare this production of electricity to the electricity produced when you speak into a dynamic microphone (the diaphragm thrusts a coil through a magnetic field and produces bursts of electricity in response to sounds). Produce consumer information pamphlets for local retail stores explaining the operation of microphones and speakers and the proper way to install them. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> </ul> <p><b>Technology suggestion:</b> <i>Use milliammeter, galvanometers, or probes and graphing calculators to measure electricity.</i></p>	<p>Jessica is able to learn at the same rate as her peers when information is presented orally or in written form. She has difficulty translating thoughts to print. She is able to complete lab in same manner as other students. However, both lab reports and consumer brochures will be difficult for her. There are several students who have difficulty with writing and the teacher pairs them with students for whom writing is not a problem. One lab report per team is turned in for a grade. Jessica is able to identify variables that affect amounts of electricity and her partner records their answers. For brochures, she is able to orally contribute information. She is also able to produce accompanying diagrams (<i>Types of extensions: level of support, procedures and routines, participation</i>)</p>

## High School Science

### Model II: Introductory Physics with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How is the transfer of energy controlled by the conservation of energy and by the tendency toward disorder?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• recognize that the total energy of the universe is constant.</li> <li>• distinguish between types of energy.</li> <li>• examine how everything tends to become less organized.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine energy transfer. Explain how thermal energy is produced in toasters by tracing energy back to its source. List forms of energy during different stages of transfer. Produce brochures to be distributed by local electric cooperatives containing consumer information about efficient energy use by home appliances (<i>WP-Transactive</i>).</li> <li>• investigate types of energy. Use photogate timer, meter stick, and balance to collect data and calculate change in potential energy and kinetic energy during swing of simple pendulum. Develop reports for customers in local stores that sell grandfather clocks explaining the construction features of clocks that efficiently use kinetic and potential energy. Write encyclopedia entries explaining the interaction between kinetic and potential energy in grandfather clocks (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i><b>Technology Suggestion:</b> Use photogates and graphing calculators to collect and graph data.</i></p> <ul style="list-style-type: none"> <li>• examine the tendency to become less organized. Design and conduct experiments to determine the rate of dispersion of food coloring dropped into water of different temperatures. Produce reports describing the inquiry approach, observations, and explanations of effects of temperature on rates of dispersion.</li> </ul>	<p>Seth learns information at the same rate and level as his peers. He uses hearing aides and requires audio trainers or interpreters (sign language) to understand information presented verbally or participate in conversations. He reads information on the same grade level as his peers. For these activities, the teacher will use an audio trainer or interpreter during instruction and discussion. Provide written directions for activities or description of concepts (<i>Types of extensions: resources and materials, level of support</i>).</p> <p>Darlene is visually impaired. She is able to design and conduct experiments (e.g., dropping food coloring into different beakers of varying temperatures). Her partner verbally describes results. Darlene records her partner's descriptions and completes her lab report with a Braille writer (<i>Types of extensions: level of support, resources and materials</i>).</p>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What happens when energy interacts with matter?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Interactions of Energy and Matter</b></p> <ul style="list-style-type: none"> <li>• investigate energy transfer caused when waves and matter interact.</li> <li>• investigate electrical energy and conductivity through matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate energy transfer between waves and matter. Collect data to produce colored charts of visible bright line spectra of various elements (e.g., metallic salts suspended in flame, neon lights, fluorescent bulbs) using spectrosopes, prisms, or diffraction gratings. Use these charts to identify elements in “unknown” samples supplied by teacher. Use the charts to produce consumer information articles with photos or color drawings to explain why each element absorbs and emits a specific packet of energy. Distribute articles to local hardware stores that sell light bulbs. Write encyclopedia entries explaining the interaction of light waves and various elements (<i>WP-Transactive</i>).</li>   <li>• investigate the interaction of electrical energy and matter. Design and conduct experiments to identify variables that affect the amount of conductivity and resistance in metal wires. Produce articles that explain how these variables impact wiring for new speakers (<i>WP-Transactive</i>).</li> </ul> <p style="margin-left: 40px;"><b>Technology suggestion:</b> Use probes and graphing calculators to collect and graph data.</p>	<p>Steve works at the same level as his peers and is able to complete any assignment when in the same time frame. However, he has difficulty interacting with peers and adults. The teacher assigns groups of four to complete the lab. Because Steve is unable to work in groups of that size, the teacher assigns him to work with one other student to complete assignments. Prior to beginning labs, the teacher reviews lab rules, Steve’s behavior plan, and point sheet. Following lab, the teacher gives positive or corrective feedback as necessary (<i>Types of extensions: procedures and routines, level of support, motivation, participation, resources and materials</i>).</p> <p>Ermin, a Limited English Proficiency student who has been in the country for 14 months, has strong verbal skills due to his outgoing nature, but limited academic vocabulary, especially in reading and writing. Assuming that concepts and vocabulary required for lab report have been demonstrated prior to the experiment, physical and visual elements will facilitate him to apply newly acquired knowledge. To assist him in identifying variables, the teacher will provide stereo speakers and metal wires that vary in composition, thickness, length, and insulation. Ermin then will experiment physically with various types of wire to determine interactions of electrical energy and matter. English-speaking students can assist him in putting his ideas into writing (<i>Types of extensions: procedures and routines, level of support, participation, demonstration of knowledge</i>).</p>

## High School Science

### Model II: Introductory Physics with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do observable structures on Earth’s surface enable us to determine the internal energy sources of the Earth?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p style="text-align: right;"><i>(Continued on page 114)</i></p>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>design investigations to examine the Sun as a source of external energy. Allow the Sun to heat water inside a soft drink can that has been painted black. Measure the temperature increase after 20 minutes and calculate the amount of heat energy reaching the water per minute. Prepare cost analyses and write articles to be distributed by local home builders associations comparing the cost of operating solar houses to conventional houses in Kentucky (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use probes and graphing calculators to collect and graph data.</i></p>	<p>Zhi-Jian has been in this country for two months and his oral/aural skills are extremely limited. His reading and writing abilities are somewhat better in spite of serious vocabulary gaps. Having had physics in China, he understands concepts but lacks technical vocabulary and basic language structure to express that understanding. He will use thermometer to determine temperature changes and will perform mathematical calculations required to complete lab report. His English-speaking lab partner will write the actual report. Zhi-Jian will copy technical vocabulary he is still learning and write definitions in Chinese (<i>Types of extensions: level of support, purpose and appropriateness, demonstration of knowledge</i>).</p> <p>Stella, Claudia, and Rob have demonstrated mastery of concepts in text. This provides time for them to do further investigations while others are discussing concepts. These students will vary placement of can altering amount of surface area exposed to the Sun's rays, place can in different positions on bright aluminum pan to investigate effects of reflection, and carry out experiments on partially overcast days and bright cloudless days to estimate degrees of reduction of heat energy by clouds. They will record their observations and conclusions and share them with the class (<i>Types of extensions: purpose and appropriateness, time, complexity, order of learning, environment, participation, demonstration of knowledge, resources and materials, level of support</i>).</p>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 112)</i>            How do observable structures on Earth’s surface enable us to determine the internal energy sources of the Earth?</p>	<p><b>Students will</b>  <b>Earth/Space Science</b>  <b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model the convection circulation in the mantle. Investigate how these convection currents propel crustal plates. Float small flat sections of styrofoam on the surface of water in a large beaker that is being heated by a hot plate. Compare the motion and causes of motion of the styrofoam to that of tectonic plates. Create investigative reports on movement of crustal plates and the New Madrid fault system. Share reports with local insurance companies for distribution to home owners that buy earthquake insurance (<i>WP-Transactive</i>).</li> </ul>	<p>Jenny understands information when presented verbally. She uses special binocular glass lens to see large items. For this activity, Jenny will have trouble seeing subtle movements of the styrofoam. Provide her opportunities to hear descriptions of what is happening as the water heats up, get close to the styrofoam, or feel movement by having strings attached to the foam (<i>Types of extensions: resources and materials, level of support</i>).</p> <p>Montez needs individual attention and frequent redirection. He understands concepts two years above his peers, but demonstrates patterns of no eye contact or communication with others. He excels in technology. Because of use of hot plates, Montez will need close adult supervision to complete lab and for prompting. Montez is given the assignment to complete the comparison on his computer. He also completes his map using computers. He is given an extra day to complete these assignments (<i>Types of extensions: procedures and routines, complexity, time, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

## High School Science

### Model II: Introductory Physics with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine how external sources of energy produce winds and ocean currents.</li> <li>• examine how external sources of energy determine global climate.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model convection in the atmosphere and ocean. Place a large beaker of water on a hot plate and drop food coloring into the water. Explain how this models wind and ocean currents. Create maps of global wind patterns and ocean current patterns. Display maps in history classes and explain how these patterns influenced historical shipping trade routes.</li> <li>• model the water cycle. Boil water and allow steam to contact the bottom of pans of ice. Explain how this models components of the water cycle. Access New Jersey Networking Infrastructure in Education Project (NJ NIE) Ask an Expert <a href="http://njnie.dl.stevens-tech.edu/curriculum/aska.html">http://njnie.dl.stevens-tech.edu/curriculum/aska.html</a> and research the water cycle.</li> </ul> <p><i><b>Technology suggestion:</b> Use Internet to communicate with meteorologist about how energy transferred by water cycle affects global climate.</i></p>	<p>Uyen has been in the country for 24 months and still communicates in sentence fragments. Teacher provides vocabulary list of terms (e.g., liquid, gas, solid, evaporation, condensation, precipitation, heat, energy, state). Uyen will have an English speaker show her what each term means and she will write definitions or examples in Vietnamese. After demonstration of water cycle, she will generate cyclical picture that illustrates three phases, labeling parts in sentence fragments with vocabulary from her list (<i>Types of extensions: level of support, resources and materials, demonstration of knowledge</i>).</p>

**High School Science**  
**Model II: Introductory Physics with Earth/Space Science**

**NOTES**

## **High School Science**

### **Model II: Introductory Chemistry with Earth/Space Science**

#### **Course Overview:**

Students develop a conceptual understanding of each guiding question through the use of scientific inquiry. They experience chemistry and Earth/space science concepts such as the structure of atoms, structure and properties of matter, chemical reactions, geochemical cycles, and formation and ongoing changes of the universe. A scientific inquiry approach uses concrete hands-on experiences that requires students to apply critical thinking skills. For each guiding question, students apply and connect scientific concepts to real life. For this model the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How do observable properties of matter enable us to determine the structure of atoms?
- What evidence can we find that the universe is in the process of continuous change?
- How are chemical and physical properties of matter related to the structure of matter?
- What causes chemical reactions that affect our daily lives?
- How are Earth's chemical reservoirs affected by the internal and external sources of energy?

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do observable properties of matter enable us to determine the structure of atoms?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Structure of Atoms</b></p> <ul style="list-style-type: none"> <li>• analyze atomic structure and electric forces.</li> <li>• examine nuclear structure, nuclear forces, and nuclear reactions.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate atomic structure. Analyze visible spectrum emitted from heated elements (e.g., metallic salts suspended in flame, neon lights, fluorescent bulbs) using spectrosopes, prisms, or diffraction gratings. Produce pictorial model that relates wavelength and energy of light emitted to Bohr model of atom. Observe fireworks either directly or on videotape and use colors of displays to identify elements used in fireworks.</li> <li>• simulate radioactive decay. Examine radioactive half-life by placing 100 pennies (atomic nuclei) in closed container (sample of radioactive isotope), shaking it (nuclear reactions), then counting and removing pennies that are heads up. Repeat until all pennies have been removed. Graph number of pennies removed versus trial number. Determine from graph the number of trials it would take to completely remove 200 pennies. Produce investigative reports on radon in homes across Kentucky that show connections between radon occurrence and geological regions in homes across Kentucky. Explain why the radioactive decay of radon is a dangerous nuclear reaction. Extend this report by describing how nuclear structure and nuclear forces cause radon to be radioactive. Present the investigative reports to local health departments. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> </ul>	<p>Randy understands concepts at the same level as his peers. He has difficulty manipulating small objects. For this activity, either pair Randy with a peer who can remove pennies or provide him with larger objects to manipulate (<i>Types of extensions: resources and materials, level of support</i>).</p>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time</b></p>	<p>What evidence can we find that the universe is in the process of continuous change?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>The Formation and Ongoing Changes of the Universe</b></p> <ul style="list-style-type: none"> <li>• describe theories of the formation of the universe.</li> <li>• describe the formation of the stars.</li> <li>• examine stars.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine components and structure of the universe. Construct physical or pictorial models of universe that show the position of our solar system and accurately represent size and distance. Display models in school cafeteria. Write reviews for the movie <i>Armageddon</i> commenting on the scientific accuracy (<i>WP-Transactive</i>).</li><li>• investigate factors that contribute to the formation of stars. Write articles explaining the use of stellar parallax to measure distances to stars. Distribute articles to local astronomy clubs (<i>WP-Transactive</i>).</li><li>• investigate components of stars. Observe photographs of spectra from stars. Produce written comparisons to Sun's spectrum and explain the similarities and differences. Create colored charts, posters, or multimedia presentations comparing spectra from stars to Sun's spectrum. Share multimedia presentations with school-based council.</li></ul> <p><i>Technology suggestion: Use multimedia software to develop presentations.</i></p>	

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are chemical and physical properties of matter related to the structure of matter?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Structure and Properties of Matter</b></p> <ul style="list-style-type: none"> <li>• investigate structure and chemical properties of matter.</li> <li>• investigate structure and physical properties of matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>analyze ways chemical properties are related to the structure of matter. Investigate simple chemical reactions between common household substances (e.g., charcoal burning, mixing baking soda with vinegar). Observe reactions and produce structural models (e.g., pictorial, physical). Explain observed chemical properties in brochures containing consumer safety information to be distributed by local home extension agent (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use publishing software to create brochures.</i></p> <ul style="list-style-type: none"> <li>analyze ways physical properties are related to the structure of matter. Investigate physical properties such as the viscosities of 10W motor oil and 40W motor oil. Produce structural models (e.g., pictorial, physical) that explain observed physical properties. Use structural models to create videos that will be used in vocational school auto mechanic classes explaining viscosities.</li> </ul> <p><i>Technology Suggestion: Use camcorder to make videos.</i></p>	<p>Suzanne understands information presented in simple language. She can demonstrate knowledge by drawing or building models. When working on physical models, she works at a pace typically slower than her same-age peers. When making structural models for these activities, allow Suzanne to develop one model instead of multiple models (<i>Types of extensions: magnitude, pace, complexity</i>).</p> <p>Tim, Brianna, and Cory participated in a Saturday scholars chemistry class in which they investigated physical changes. They measured ice-melting and water-boiling temperatures. They will expand upon the class activity by adding salt and sugar (1g/10mL water) into water and remeasuring ice-melting and water-boiling temperatures. They will record and discuss results and observations and report to the class (<i>Types of extensions: purpose and appropriateness, order of learning, complexity, pace, resources and materials, level of support</i>).</p>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What causes chemical reactions that affect our daily lives?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Chemical Reactions</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> <li>• investigate factors affecting reaction rates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate heat energy released when hydrocarbons (e.g., lamp oil, paraffin, alcohol) react with oxygen. Use oil lamp, candle, or alcohol lamp to heat beaker of water. Produce investigative reports that quantitatively compare the heat energy released from a variety of hydrocarbons (e.g., fuel oil, coal, wood, food). Distribute reports to local environmental groups concerned about proper use of natural resources (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use probes and graphing calculators to collect and graph data.</i></p> <ul style="list-style-type: none"> <li>• examine transfer of electrons during chemical reactions (e.g., zinc and dilute hydrochloric acid). Observe reactions and construct structural models (e.g., physical, pictorial) to explain observations. Write encyclopedia entries that use the models to show how transfer of electrons produces electricity in batteries (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use publishing software to create brochures.</i></p> <ul style="list-style-type: none"> <li>• investigate one factor affecting reaction rates. Observe smoldering splint of wood in air and when splint is placed into bottle of pure oxygen. Produce essays with student created drawings to explain how concentration of reactants increase reaction rate. Extend activity by investigating other factors (e.g., temperature, surface area).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use digital camera to create photo essays.</i></p>	<p>Chancy understands concepts when they are presented using verbal descriptions or pictures along with hands-on activities. He can demonstrate his knowledge by explaining what he knows verbally or using drawings. For this activity, provide Chancy with an audio tape of the experiment and expectations prior to class. Allow Chancy to audio tape his prediction of which variables would need to be measured to determine the amount of heat transferred (<i>Types of extensions: procedures and routines, materials and resources, order of learning, demonstration of knowledge</i>).</p>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are Earth's chemical reservoirs affected by the internal and external sources of energy?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Geochemical Cycles</b></p> <ul style="list-style-type: none"> <li>• recognize that the Earth contains a fixed amount of elements.</li> <li>• analyze Earth's chemical reservoirs.</li> <li>• investigate how Earth's sources of energy drive geochemical cycles.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine the fixed amount of each stable chemical atom or element in the Earth system. Produce articles explaining how Earth's resources are being depleted while Earth's amount of atoms or elements essentially stays the same.</li> <li>• research Earth's chemical reservoirs. Produce articles explaining how plate tectonics affect ways geologists explore for economically important ore deposits (<i>WP-Transactive</i>).</li> <li>• investigate how Earth's energy drives geochemical cycles. Make a hot concentrated solution of water and sugar. Allow the solution to cool and evaporate undisturbed for one week. Observe the formation of crystals. Explain how energy drives the water cycle and how the water cycle aids the formation of Earth's minerals. Document observations and explanations in learning logs.</li> </ul>	<p>Brad works well with other students. He can demonstrate what he knows using picture cards and a talking computer. For this activity, Brad will work in a small group. As data is collected on the formation of crystals, Brad will choose correct picture representations for the degree of crystal formation and paste pictures in his journal. The pictures and the written description will be programmed into his computer so he can answer questions in class and can demonstrate his knowledge (<i>Types of extensions: demonstration of knowledge, participation, level of support, procedures and routines, resources and materials, magnitude</i>).</p>

**High School Science**  
**Model II: Introductory Chemistry with Earth/Space Science**

**NOTES**



## **High School Science**

### **Model II: Introductory Biology with Earth/Space Science**

#### **Course Overview:**

Students develop a conceptual understanding of each guiding question through the use of scientific inquiry. They experience biology and Earth/space science concepts such as structure and function of cells; molecular basis of heredity; biological change; changes in the Earth system; interdependence of organisms; matter, energy and organization in living systems; and the behavior of organisms. A scientific inquiry approach uses concrete hands-on experiences that requires students to apply critical thinking skills. For each guiding question, students apply and connect scientific concepts to real life. For this model the suggested sequence is Introductory Physics with Earth/Space Science, Introductory Chemistry with Earth/Space Science, and Introductory Biology with Earth/Space Science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How do cell structures, functions, and processes affect living things?
- How does DNA transfer genetic information of organisms to the next generation?
- What evidence can be found that the Earth and solar system have changed over time?
- What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?
- How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem?
- What processes are involved in the flow of matter and energy through and between living systems and the physical environment?
- How do behavioral responses to stimuli ensure individual survival and reproductive success for the species?

**High School Science**  
**Model II: Introductory Biology with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do cell structures, functions, and processes affect living things?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Cell</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p style="text-align: right;"><i>(Continued on page 134)</i></p>

**High School Science**  
**Model II: Introductory Biology with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine cell structures with light microscope. Produce photo essay or essay with student created drawings of basic cell structure (e.g., cell wall, cell membrane, nucleus, cytoplasm, chloroplast, vacuoles). Describe functions of cell structures on mechanical rather than biochemical level (e.g., nucleus and control of cell function, chloroplast and photosynthesis, mitochondria and respiration, cell membrane and transport). Include ways to test the assertion that chicken eggs are cells by comparing functions of different structures in eggs and in cells.</li> </ul> <p style="margin-left: 40px;"><i>Technology suggestion: Use light microscopes or flex cams to examine cell structures.</i></p> <ul style="list-style-type: none"> <li>• investigate reactants and products of the photosynthetic chemical reaction. Use light screens on Geranium leaves. Conduct iodine tests after a few days to determine effects of light and absence of light on production of carbohydrates in leaves. Place <i>Elodea</i> plants into carbonate solutions under bright light. Count oxygen bubbles as they emerge from cut ends of <i>Elodea</i> plants. Analyze these activities and produce an empirical word equation for the photosynthetic chemical reaction. Investigate ways to increase or decrease rate of oxygen production. Compare photosynthesis in plants adapted to life in arid conditions to plants living in Kentucky.</li> <li>• investigate the evolution of eukaryotic cells. Trace the origin of cell organelles. Use graphic organizers to compare characteristics of oldest known cells to modern cells. Create illustrated time lines documenting milestones in the development of the cell theory.</li> <li>• compare functions of cell organelles to school or city structures that have similar functions. Create multimedia presentations showing comparisons.</li> <li>• investigate how and when cells differentiate. Read “<i>How Does a Single Cell Become a Whole Body.</i>” Trace formation of germ layers and identify organ systems that develop from each layer. Create informational bulletin boards, collages, or posters. Examine drugs (e.g., thalidomide, alcohol) and diseases (e.g., rubella) that interfere with differentiation and organogenesis. Write articles to encourage pregnant women to refrain from drinking alcohol. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> </ul>	<p>Carl is able to learn concepts and vocabulary presented in a very concrete manner. He has difficulty with new language and vocabulary and needs visual devices to remind him of the meaning of vocabulary (e.g., photosynthesis), adding one new term and reviewing old ones each day. Also, on the day of the activity, the teacher reviews techniques for using microscopes and parts of the microscope. She also presents a diagram of a cell and its structures. Carl copies it into his notebook. With a partner, Carl examines cell structures with the microscope and compares it to his diagram. Then Carl draws a diagram from the real cell and compares it to his notes, labeling all parts. Carl will answer simple questions to describe functions of cell structures. He does not complete the chicken egg section of the lab (<i>Types of extensions: order of learning, procedures and routines, complexity, magnitude, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Science**  
**Model II: Introductory Biology with Earth/Space Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 132)</i>            How do cell structures, functions, and processes affect living things?</p>	<p><b>Students will</b>  <b>Life Science</b>  <b>The Cell</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science**  
**Model II: Introductory Biology with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate the changes that occur during metamorphosis of animals (e.g., salamanders, insects, frogs). Create illustrated flow charts explaining the process. Create physical models of young and adult. Identify natural or human-induced hazards (e.g., acid rain) that affect development. Interview biologists about changes in local populations of aquatic organisms. Write letters to legislators regarding effects of acid rain or other pollutants on aquatic organisms (<i>WP-Transactive</i>). See <i>Project Wet Curriculum and Activity Guide</i> activity <i>Where are the Frogs?</i></li> <li>• investigate embryonic development. Examine pictures of different species of embryos at different stages of development. Use graphic organizers to compare features. Research variables that affect embryonic development (e.g., thalidomide, alcohol, diseases). Develop informational brochures for expectant mothers explaining health hazards and distribute through local health care facilities (<i>WP-Transactive</i>).</li> <li>• trace what happens to food produced by rain forest trees when its leaves and fruit are eaten by other animals. Create bulletin boards illustrating flow of energy and explaining the photosynthetic process.</li> <li>• create illustrated time lines showing major discoveries in studies of photosynthesis. Include works of major researchers (e.g., Van Helmont, Priestley, Ingenhouz, Sachs, Engelmanson).</li> </ul> <p><b><i>Technology suggestion:</i></b> Use software to create time lines.</p>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How does DNA transfer genetic information of organisms to the next generation?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Molecular Basis of Heredity</b></p> <ul style="list-style-type: none"> <li>• investigate DNA.</li> <li>• investigate encoding and replication.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

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**Model II: Introductory Biology with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine DNA structure. Construct models of DNA molecules and show locations of genes. Display models in science labs. Write articles for the local school newspaper concerning future applications of Human Genome Project (<i>WP-Transactive</i>).</li> <li>• examine replication. Create articles showing how one DNA molecule can form exact duplicate of itself (replication). Use photographs of DNA models in essays (<i>WP-Transactive</i>).</li> <li>• investigate life cycles of cells. Examine videos, slides, or photographs of various stages of mitosis and interphase. Recreate stages using students to represent chromosomes.</li> <li>• investigate loss of control over cell division exhibited by cancer cells. Identify chemical substances used in chemotherapy and their purposes. Interview community members who have had chemotherapy, examine the process and how it affected their lives. Write articles for science sections of newspapers and explain the idea that cancer is a normal developmental process gone wrong or write editorials to explain why money should be spent on basic research regarding normal cell cycle (<i>WP-Transactive</i>).</li> <li>• read Watson’s account of the discovery of DNA structure. Summarize methods used and evidence gathered. Investigate lives of other researchers who were involved in the discovery (e.g., Rosalind Franklin, Maurice Wilkins, Francis Crick). Write resumes for each researcher.</li> <li>• investigate protein synthesis including transcription and translation. Create models to demonstrate process. Identify types of RNA present, their function, and locations. Use graphic organizers to compare protein synthesis in eukaryotes and prokaryotes. Explore evolutionary significance of common genetic language.</li> <li>• investigate how some antibiotics work to interrupt protein synthesis of bacteria. Create informational brochures explaining how antibiotics work and distribute at drugstores (<i>WP-Transactive</i>).</li> <li>• investigate how mutations in DNA affects protein synthesis. Identify mutagens (e.g., ultraviolet lights, ionizing radiation). Write articles explaining how mutations may be harmful, neutral, or beneficial, depending on how the proteins they specify interact with other genes and the environment (<i>WP-Transactive</i>).</li> </ul>	<p>Angelica sustained a spinal cord injury in an auto accident. She has limited use of her arms. She received instruction on use of assistive technology and computers. She uses technology with assistive devices to access the key board. To complete this assignment, she is given instruction in use of a graphics program that can help her construct models. She constructs her models using her computer and displays them on a class computer monitor or TV screen. She completes the editorial using her computer. (<i>Types of extensions: order of learning, purpose and appropriateness, procedures and routines, resources and materials, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence can be found that the Earth and solar system have changed over time?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>The Formation and Ongoing Changes of the Earth System</b></p> <ul style="list-style-type: none"> <li>• describe the formation of the solar system.</li> <li>• investigate how to estimate geologic time.</li> <li>• examine ongoing changes of the Earth system.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model possible mechanisms for the formation of the solar system. Sprinkle lycopodium powder on top of water in beakers and stir (the swirling lycopodium powder represents mass particles coalescing under the influence of gravity). Produce articles describing other possible mechanisms for the formation of the solar system and describing current changes that are occurring in the solar system (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use Internet to observe latest photographs of astronomical objects and events.</i></p> <ul style="list-style-type: none"> <li>• investigate geologic time. Construct physical or pictorial models that show subdivisions of geologic time on time lines. Include descriptions of fossils found from each time period. Examine and map coal deposits and other rock sequences across the state. Create educational brochures describing rock formations that contain fossils and distribute at visitor centers (<i>WP - Transactive</i>).</li> <li>• explore how movement of continental plates affected distribution of species. Investigate matching fossils and rock formations across plate boundaries, the unique collection of species on some continents (e.g., marsupials in Australia), and distribution of biogeographical realms.</li> <li>• examine interactions that cause ongoing changes in the Earth system. Model chemical weathering by placing piece of chalk (limestone) in water and another piece in vinegar (acid). Produce articles to predict long term effects of acid rain on erosion of Earth’s surface, limestone cave formation, monuments, and buildings (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestions: Use digital cameras to create photo essays. Create multimedia presentations for city council or county fiscal courts documenting effects of weathering or acid rain on communities.</i></p> <ul style="list-style-type: none"> <li>• investigate significant geologic events (e.g., mountain building, formation of volcanoes) and their impact on speciation. Research adaptive radiation on Hawaiian and Galapagos Islands. Create maps of islands showing locations of different species. Use graphic organizers to compare features of species. Develop models to explain how adaptive radiation occurs on island chains.</li> </ul>	<p>Josh is deaf. He is able to complete tasks similar to grade-level peers. He is provided with a written set of directions for this assignment. During the field trip to investigate coal deposits and other rock sequences, an interpreter signs the speaker’s explanations (<i>Types of extensions: procedures and routines, resources and materials, level of support</i>).</p> <p>Stanley understands information well beyond the level of his peers. He is highly motivated when he is given independence in his study of new concepts. For this activity, Stanley already knows basic concepts of chemical weathering. Contract with Stanley to conduct a research project on the effects of chemical weathering on the local landscape. As part of the research, Stanley will develop a specific set of strategies to decrease the amount of weathering in his community. He will also present strategies to city council members (<i>Types of extensions: motivation, purpose and appropriateness, complexity, time, pace, environment, order of learning, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlation to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Biological Change</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul> <p style="text-align: right;"><i>(Continued on page 142)</i></p>

**High School Science**  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate defense mechanisms (e.g., camouflage, mimicry, toxicity, aggressive behaviors, warning coloration) in plants and animals. Select a defense mechanism and identify organisms that exhibit that trait. Identify patterns among groups of organisms. Create graphic representations (e.g., circle graphs, histograms) to display data. Read articles describing industrial melanism (e.g., “<i>Further Selection Experiments on Industrial Melanism in the Lepidoptera.</i>”). Explain in learning logs how process of natural selection altered populations of peppered moths (<i>Biston betularia</i>).</li> <li>• investigate evolution of various species (e.g., horses). Create murals depicting phylogenetic trees. Discuss how adaptations are advantageous to the survival of species.</li> <li>• examine diversity and unity of organisms. Observe organisms in areas close to school. Sort organisms by structure and develop classification system. Produce essays with photographs to be distributed during parents’ night.</li> <li>• investigate biodiversity. Take field trips to riparian ecosystems. Map physical and biological features. List organisms living in each area and describe their roles. Explore how changes in environments might increase or decrease diversity. Write articles explaining why ecosystems with high biodiversity should be protected (<i>WP-Transactive</i>).</li> <li>• investigate impacts of introduced species (e.g., lamprey eel, rainbow trout, pheasant, purple loosestrife, water hyacinth, Japanese beetle, zebra mussel) on native species. Identify both benefits and liabilities of introduced species. Research ways introductions occur and develop plans to prevent them. Share plans with environmental clubs.</li> <li>• investigate diversity of fish species in Kentucky’s lakes and streams. Invite fish biologist to discuss fish and fish habitats. Interview fishermen and compare with biologists’ information. Use graphic organizers to compare characteristics of fish (e.g., habitats, food sources, mating and breeding patterns). Design dichotomous keys to identify species.</li> </ul>	

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Academic Expectations	Guiding Questions	Correlation to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 140)</i>            What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Biological Change</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science**  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore methods of classifying organisms based on structure, function, biochemistry, behavior, nutrition, embryonic development, genetic systems, evolutionary histories, and ecological interactions. Classify various organisms based on pictures and measurements of features (e.g., body form, teeth, skull, feet, skeletal features, body temperature, heart, embryonic development).</li> <li>• examine diversity among plants. Identify major highlights of plant evolution (e.g., vascular tissue) and their impact on plant diversification. Identify divisions within plant kingdom and describe their characteristics and significant adaptations. Use graphic organizers to compare characteristics. Create bulletin boards, collages, or multimedia presentations on the economic or medical importance of plants from each division, including local agricultural products.</li> <li>• explore loss of biodiversity worldwide. Investigate why tropical rain forests are being destroyed at alarming rates. Debate whether or not developed nations have the right to ask developing nations to slow or stop destruction of their forests.</li> <li>• explore diversity among microorganisms. Research types of aerobic and anaerobic bacteria (e.g., <i>Staphylococcus aureus</i>, <i>Clostridium botulinum</i>). Discuss potential impacts on human health (e.g., botulism, vitamin K production). Research and categorize antimicrobial drugs. Investigate how antimicrobial drugs disrupt cell processes or structures or both. Create informational brochures explaining how antimicrobial drugs work and distribute at drugstores.</li> <li>• explore beneficial roles of microorganisms (e.g., food production). Organize food fairs for parents' night that highlight the role of microorganisms in food production.</li> </ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlation to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Interdependence of Organisms</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• analyze energy flow through ecosystems.</li> <li>• examine the factors that influence the interactions between organisms.</li> <li>• explore how human activities alter ecosystems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate the relative abundance of carbon, hydrogen, nitrogen, and oxygen in living things. Identify major compounds found in living things (e.g., CO<sub>2</sub>, H<sub>2</sub>O, proteins, carbohydrates). Trace the movement of these elements between the living and nonliving world. Identify processes (e.g., respiration, photosynthesis, bacterial role in nitrogen cycle) critical to each cycle. Write short stories assuming role of elements or molecules as they cycle through the biosphere. (The element or molecule must pass through at least two organisms.) Share stories with other biology classes.</li> <li>• investigate the nitrogen cycle. Examine nodules from legumes' roots under microscopes after staining with methylene blue. Sketch nitrogen-fixing bacteria. Produce brochures to be distributed to farmers by agricultural field agents about importance of bacteria (<i>WP-Transactive</i>).</li> <li>• design food chains showing humans' position as primary and secondary consumers. Use food chains to construct food webs. Analyze humans' position in energy transfer. Compare vegetarian and non-vegetarian diets to determine effects of each on the environment. Use this information to argue that we should or should not become vegetarians (<i>WP-Transactive</i>). Determine ingredients needed to produce cows, including land, forage, fuel, fertilizers, corn, soybeans, insecticides, herbicides, antibiotics, hormones, and water. Examine distribution and use of resources among nations of the world.</li> <li>• examine how humans alter ecosystems. Explore effects of fertilizer run-off on water resources. Compare observations (e.g., nitrate level, phosphate level, level of dissolved oxygen) of water sources that are near agricultural land to sources that are not and prepare investigative reports. Participate in Kentucky's Water Watch Program.</li> </ul> <p><i>Technology suggestion: Use e-mail to compare findings with students across the state.</i></p>	<p>Mandy needs opportunities to participate in activities to support and encourage her intense interest in scientific research. She will survey garden supply stores to find compounds in commonly used pesticides and other lawn and garden products. The gifted-talented specialist will assist in arranging for her to work with an environmental researcher either through mentorship projects at a university or government environmental agency or via e-mail. Mandy and her mentor will design and perform investigations or experiments related to effects of selected compounds in lawn and garden care products on water resources or on food chains. She will present her findings to local garden clubs or other appropriate audience (<i>Types of extensions: purpose and appropriateness, complexity, level of support, environment, time, order of learning, level of support, demonstration of knowledge, resources and materials, procedures and routines, magnitude</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What processes are involved in the flow of matter and energy through and between living systems and the physical environment?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Matter, Energy, and Organization in Living Systems</b></p> <ul style="list-style-type: none"> <li>• recognize that living systems require energy.</li> <li>• investigate photosynthesis, cellular respiration and energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>



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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine energy sources for living systems. Construct models of energy containing food molecules (e.g., sugars, proteins). Construct models of simple molecules (e.g., CO<sub>2</sub>, H<sub>2</sub>O) from which food molecules are formed. Display models in classroom.</li> <li>• research methods used to determine the number of calories in foods. Determine number of calories in walnuts by burning walnuts beneath small beakers filled with water. Compare water temperature before and after burning. Compare number of calories released by lipids, proteins, and carbohydrates. Write informational guides for dieters explaining which type of food provides the most calories and why (<i>WP-Transactive</i>).</li> <li>• investigate energy relationships between photosynthesis and respiration. Use models to illustrate the chemistry of photosynthesis and cellular respiration. Write children's stories about the life of plants describing when and where photosynthesis and respiration take place (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use desktop publishing software to create books.</i></p> <ul style="list-style-type: none"> <li>• write articles explaining why rain forests make little or no net contribution to global oxygen production or reduction of global warming (<i>WP-Transactive</i>).</li> <li>• analyze energy flow through ecosystems. Read feature articles from fishing, hunting, or nature magazines to create food webs. Display food webs on bulletin boards. Examine diagrams of energy pyramids for typical ecosystems. Develop diagrams and memos to be used by wildlife biologists for workshops explaining why energy pyramids are broad at bottom and narrow at top.</li> </ul>	<p>Mia has limited fine motor abilities, but her cognitive skills are commensurate with same-age peers. She will need therapeutty rather than modeling clay, stiffer paper, larger objects, and peer or adult assistance constructing her models, but she should be allowed to perform construction of models herself. An occupational therapist will consult regarding appropriate types of materials (<i>Types of extensions: time, procedures and routines, resources and materials, level of support</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do behavioral responses to stimuli ensure individual survival and reproductive success for species?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Behavior of Organisms</b></p> <ul style="list-style-type: none"> <li>• investigate behavioral responses.</li> <li>• analyze patterns of behavior.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science**  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate and compare innate and learned behaviors (e.g., habituation, imprinting, classical and operant conditioning) in graphic organizers. Create multimedia presentations illustrating examples of each.</li> <li>• investigate the evolutionary and genetic basis of behavior. Compare advantages and disadvantages of sexual reproduction and asexual reproduction. Explain the adaptive advantages of hermaphroditism, altruistic behavior, and mating systems (e.g., polygamy, polyandry, monogamy). Analyze how animal behaviors (e.g., feeding, mating, social behaviors, communication, territoriality, dominance hierarchies) maximize reproductive success. Explore successful reproductive behaviors of aquatic organisms (e.g., reproductive dormancy). Create posters, bulletin boards, or multimedia presentations giving examples and explaining behaviors.</li> <li>• explore circadian rhythms (e.g., metabolic role, body temperature, feeding times) and cirannual behaviors (e.g., breeding, hibernation). Investigate behavioral responses of organisms in tidal regions. Identify internal or external cues that regulate these behaviors and explore their adaptive nature. See <i>WOW! The Wonders of Wetlands</i> activity  Salt Marsh Players</li> <li>• research seasonal affective disorder. Create informational brochures describing what can be done to alleviate or eliminate symptoms. Distribute through healthcare facilities (<i>WP-Transactive</i>).</li> <li>• investigate migration in animals (e.g., whales, butterflies, birds). Explore methods (e.g., piloting, orientation, navigation) and cues (e.g., Sun, magnetic fields, star patterns, chemical concentration gradients) used to find their destinations. Create multimedia presentations for other schools demonstrating how animals migrate.</li> </ul>	

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**NOTES**

## High School Science

### Model II: Principles of Technology with Earth/Space Science

#### **Course Overview:**

Students develop understandings of traditional physics and Earth/space science concepts through the use of scientific inquiry. Students investigate concepts of force, work, efficiency, rate, and energy. Hands-on inquiry experiences develop problem-solving and critical-thinking skills. Students apply conceptual understandings to industrial, technological, and personal situations. It is suggested that Principles of Technology with Earth/Space Science be taken before either Introductory Chemistry with Earth/Space Science or Introductory Biology with Earth/Space Science.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How can forces and laws of motion be used to explain movement in operating systems?
- How is energy used to produce work and alter efficiencies in operating systems? (e.g., electrical energy, thermal energy)
- How does energy conservation and the tendency toward disorder influence energy transfers in operating systems?
- How do interactions of energy and matter affect operating systems?
- What are Earth's internal and external energy sources and how are they used to generate power for operating systems?

## High School Science

### Model II: Principles of Technology with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How can forces and laws of motion be used to explain movement in operating systems?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science**  
**Model II: Principles of Technology with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine forces and motion of objects. Measure speed of objects (e.g., washer, screws moving on conveyors). Measure production rates of multiple objects coming off conveyors. Determine angular speed (RPMs) of conveyor belts. Predict time changes due to speed changes. Compare objects of varying weights and effects on speed. Produce interoffice memos for production managers relating production rate to product weight.</li><li>• explore effects of gravitational force on flow rates. Measure volumes of water exiting elevated channels over time. Calculate flow rates of channels. Construct training pamphlets for county extension agents to distribute to local farmers on how to determine flow rates of irrigation ditches, including descriptions of potential problems. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li></ul>	

## High School Science

### Model II: Principles of Technology with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are different types of energy used to produce work and alter efficiencies in operating systems?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• recognize that the total energy of the universe is constant.</li> <li>• distinguish between types of energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• recognize how science influences human population growth.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>



**High School Science**  
**Model II: Principles of Technology with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• apply law of conservation of energy to operating systems. Measure and calculate energy supplied to air motors and output energy from attached generators. Compare energy entering systems with output energy. Identify where energy changes to other forms. Write essays about illustrated systems. Identify ways to monitor or utilize wasted energy. Write articles to help local industrial managers monitor and utilize wasted energy (<i>WP-Transactive</i>).</li><li>• compare types of energy. Compress springs using weights. Measure changes in spring length. Determine spring constants to find potential energies. Research and write articles about uses of springs in athletic equipment and submit to local athletic supply stores (<i>WP-Transactive</i>).</li></ul>	

## High School Science

### Model II: Principles of Technology with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How does conservation of energy and the tendency toward disorder influence transfers of energy in operating systems?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• examine how everything tends to become less organized.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Principles of Technology with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine heat flow to determine specific heats of materials. Measure the temperature differences when hot metals are transferred to cold water. Use masses and temperature differences to calculate specific heats. Write articles relating specific heat to tempering. Present articles on applications of tempering to welding instructors for classroom use (<i>WP-Transactive</i>).</li></ul>	

## High School Science

### Model II: Principles of Technology with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do interactions of energy and matter affect operating systems?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Interactions of Energy and Matter</b></p> <ul style="list-style-type: none"> <li>• investigate energy transfer caused when waves and matter interact.</li> <li>• investigate electrical energy and conductivity through matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science**  
**Model II: Principles of Technology with Earth/Space Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• investigate interaction of waves and matter. Transfer negative charges to rubber rods by rubbing them with fur. Use rubber rods to charge clean shiny small zinc plates. Attach zinc plates to electroscopes after visible light has shined on the plate for a few minutes. Start over with neutral zinc plates and charge them negatively. Attach zinc plates to electroscopes before and after ultraviolet has shone on them. Explain any changes in charge on plates. Write articles explaining how these activities relate to use of phototransistors in remote infrared controllers for televisions and videocassette recorders.</li><li>• investigate electrical energy and conductivity through resistors. Construct series and parallel circuits with resistors. Measure voltage across each resistor and total circuit resistance. Calculate resistance from voltage drop and value of current. Draw schematic diagrams of circuits. Research electrical safety related to overloading circuits. Create consumer information brochures on electrical safety for distribution in areas with houses older than thirty years.</li></ul>	

## High School Science

### Model II: Principles of Technology with Earth/Space Science

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What are internal and external energy sources of Earth and how are they used to generate power for operating systems?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth System</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> <li>• examine how external sources of energy produce winds and ocean currents.</li> <li>• examine how external sources of energy determine global climate.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
**Model II: Principles of Technology with Earth/Space Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine internal sources of energy by investigating applications of geothermal energy. Research source, types, and uses of geothermal energy by contacting local electric companies. Compare advantages, disadvantages, proportion of use, and diversity of uses to other energy sources. Write articles for local newspaper explaining how geothermal energy for heating and cooling could be used in homes to save money and energy (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i><b>Technological suggestion:</b> Research source of geothermal energy and its use on the Internet and communicate by e-mail with students that use geothermal energy.</i></p> <ul style="list-style-type: none"> <li>• examine movement of crustal plates and relationship to earthquakes. Research and model plate tectonic movement. Investigate geological activity associated with crustal plate boundaries. Design buildings that are earthquake proof. Investigate local school systems for earthquake plans and compile report to be presented to school-based decision-making councils with recommendations for improvement or recommendations on plans.</li> </ul> <p style="padding-left: 40px;"><i><b>Technological suggestion:</b> E-mail students that live near the North American plate boundary and ask how it affects their lives.</i></p> <ul style="list-style-type: none"> <li>• investigate wind currents. Collect data for one month by measuring atmospheric pressure and wind speed. Graph data and investigate correlation between pressure and speed. Relate wind currents to sources of energy external to the Earth system. Write articles on wind damage in Kentucky and how to minimize future damage (<i>WP-Transactive</i>).</li> <li>• examine global climate. Research causes of El Niño, its effect on Kentucky’s climate, and its economic impact on Kentucky’s industries.</li> </ul> <p style="padding-left: 40px;"><i><b>Technological suggestion:</b> Use Internet to monitor climate throughout the world and explain the relationship to sources of energy external to Earth system.</i></p>	

**High School Science**  
**Model II: Principles of Technology with Earth/Space Science**

**NOTES**



## **High School Science**

### **Model III: Integrated Science I**

#### **Course Overview:**

This inquiry based introductory course is designed around the themes of patterns of change and systems, order, and organization. Students examine the organization of the universe by beginning with the fundamental laws that give order, continue with the way these laws affect the Earth and the organization of life, and conclude with how life responds to these laws.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How can we use forces and the laws of motion to understand the motion of objects?
  
- How do observable structures on Earth's surface enable us to determine the internal energy sources of the Earth?
  
- How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere?
  
- How does Earth's internal and external sources of energy affect Earth's geochemical cycles?
  
- How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem?
  
- How do behavioral responses to stimuli ensure individual survival and reproductive success for species?
  
- When energy is transferred what forms can it assume?

**High School Science  
Model III: Integrated Science I**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How can we use forces and the laws of motion to understand the motion of objects?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul> <p style="text-align: right;"><i>(Continued on page 166)</i></p>

**High School Science  
Model III: Integrated Science I**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate effects of forces on the motion of objects. Attach strings to carts and then attach each string to one standard mass of 100 grams. Place carts on tables and suspend standard masses over edge of tables. Use suspended masses to pull carts length of tables. Measure time with photogates. Repeat multiple trials with different masses loaded on carts. Use same 100 gram standard mass suspended over table edge for each trial. Produce graphs of distance versus time for different masses loaded on cart. Analyze slope of curves and predict relationships between mass and acceleration while using a constant force. Extend activity by comparing the force used to throw baseballs and golf balls with their mass and acceleration.</li> </ul> <p><i>Technology suggestion: Use photogates and graphing calculators to measure time and graph data.</i></p>	<p>Khoa has been in the country for two and one-half years. He grasps academic vocabulary quickly, has excellent listening skills, but needs help with written expression. Khoa will be paired with two English-speaking lab partners. The teacher will provide him with a list of essential physics vocabulary specific to this experiment (e.g., mass, length, distance, time, carts, photogate, slope, curves, relationship, acceleration). In his initial role as observer, he will write definitions of the vocabulary in Vietnamese to assist in writing the final lab report. During group activity his role will be to record data as dictated by his lab partners. The English-speaking lab partners' role will be to verify use of comparative language in expressing the relationship between force, mass, and acceleration (e.g., a Limited English Proficiency student might say "the more weight, the slower the cart moves." English-speaking students will provide more appropriate scientific description, such as "as mass increases, acceleration decreases") (<i>Types of extensions: procedures and routines, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Science  
Model III: Integrated Science I**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 164)</i> How can we use forces and the laws of motion to understand the motion of objects?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Motions and Forces</b></p> <ul style="list-style-type: none"> <li>• investigate the effects of forces on the motion of objects.</li> <li>• investigate gravitational and electromagnetic forces.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
Model III: Integrated Science I**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate electromagnetic forces. Produce electricity by thrusting one end of strong bar magnet through wire coils that have different numbers of turns. Measure electricity produced. Produce lab reports identifying variables that affect amount of electricity created. Compare this production of electricity to the electricity produced when you speak into a dynamic microphone (the diaphragm thrusts a coil through a magnetic field and produces bursts of electricity in response to sounds). Produce consumer information pamphlets for local retail stores explaining the operation of microphones and speakers and the proper way to install them. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> </ul> <p><b>Technology suggestion:</b> <i>Use milliammeters, galvanometers, or probes and graphing calculators to measure electricity.</i></p>	<p>Jessica is able to learn at the same rate as her peers when information is presented orally or in written form. She has difficulty translating thoughts to print. She is able to complete lab in same manner as other students. However, both lab reports and consumer brochures will be difficult for her. There are several students who have difficulty with writing and the teacher pairs them with students for whom writing is not a problem. One lab report per team is turned in for a grade. Jessica is able to identify variables that affect amounts of electricity and her partner records their answers. For brochures, she is able to orally contribute information. She is also able to produce accompanying diagrams (<i>Types of extensions: level of support, procedures and routines, level of participation</i>).</p>

**High School Science  
Model III: Integrated Science I**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do observable structures on Earth’s surface enable us to determine the internal energy sources of the Earth?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p style="text-align: right;"><i>(Continued on page 170)</i></p>

**High School Science  
Model III: Integrated Science I**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>design investigations to examine the Sun as a source of external energy. Allow the Sun to heat water inside a soft drink can that has been painted black. Measure the temperature increase after 20 minutes and calculate the amount of heat energy reaching the water per minute. Prepare cost analyses and write articles to be distributed by local home builders associations comparing the cost of operating solar houses to conventional houses in Kentucky (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use probes and graphing calculators to collect and graph data.</i></p>	<p>Zhi-Jian has been in this country for two months and his oral/aural skills are extremely limited. His reading and writing abilities are somewhat better in spite of serious vocabulary gaps. Having had physics in China, he understands concepts but lacks technical vocabulary and basic language structure to express that understanding. He will use thermometer to determine temperature changes and will perform mathematical calculations required to complete lab report. His English-speaking lab partner will write the actual report. Zhi-Jian will copy technical vocabulary he is still learning and write definitions in Chinese (<i>Types of extensions: level of support, purpose and appropriateness, demonstration of knowledge</i>).</p> <p>Stella, Claudia, and Rob have demonstrated mastery of concepts in text. This provides time for them to do further investigations while others are discussing concepts. These students will vary placement of can altering amount of surface area exposed to the Sun's rays, place can in different positions on bright aluminum pan to investigate effects of reflection, and carry out experiments on partially overcast days and bright cloudless days to estimate degrees of reduction of heat energy by clouds. They will record their observations and conclusions and share them with the class (<i>Types of extensions: purpose and appropriateness, time, complexity, order of learning, environment, participation, demonstration of knowledge, resources and materials, level of support</i>).</p>

**High School Science  
Model III: Integrated Science I**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 168)</i> How do observable structures on Earth’s surface enable us to determine the internal energy sources of the Earth?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine internal and external sources of energy.</li> <li>• examine how internal sources of energy propel crustal plates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science  
Model III: Integrated Science I**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model the convection circulation in the mantle. Investigate how these convection currents propel crustal plates. Float small flat sections of styrofoam on the surface of water in a large beaker that is being heated by a hot plate. Compare the motion and causes of motion of the styrofoam to that of tectonic plates. Create investigative reports on movement of crustal plates and the New Madrid fault system. Share reports with local insurance companies for distribution to home owners that buy earthquake insurance (<i>WP-Transactive</i>).</li> </ul>	<p>Jenny understands information when presented verbally. She uses special binocular glass lens to see large items. For this activity, Jenny will have trouble seeing subtle movements of the styrofoam. Provide her opportunities to hear descriptions of what is happening as the water heats up, get close to the styrofoam, or feel movement by having strings attached to the foam (<i>Types of extensions: resources and materials, level of support</i>).</p> <p>Montez needs individual attention and frequent redirection. He understands concepts two years above his peers, but demonstrates patterns of no eye contact or communication with others. He excels in technology. Because of use of hot plates, Montez will need close adult supervision to complete lab and for prompting. Montez is given the assignment to complete the comparison on his computer. He also completes his map using computers. He is given an extra day to complete these assignments (<i>Types of extensions: procedures and routines, complexity, time, resources and materials, demonstration of knowledge, level of support, motivation</i>).</p>

**High School Science  
Model III: Integrated Science I**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 170)</i> How can we observe the effect of the Sun's energy on the Earth's surface and atmosphere?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Energy in the Earth system</b></p> <ul style="list-style-type: none"> <li>• examine how external sources of energy produce winds and ocean currents.</li> <li>• examine how external sources of energy determine global climate.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model convection in the atmosphere and ocean. Place a large beaker of water on a hot plate and drop food coloring into the water. Explain how this models wind and ocean currents. Create maps of global wind patterns and ocean current patterns. Display maps in history classes and explain how these patterns influenced historical shipping trade routes.</li> <li>• model the water cycle. Boil water and allow steam to contact the bottom of pans of ice. Explain how this models components of the water cycle. Access New Jersey Networking Infrastructure in Education Project (NJ NIE) Ask an Expert <a href="http://njnie.dl.stevens-tech.edu/curriculum/aska.html">http://njnie.dl.stevens-tech.edu/curriculum/aska.html</a> and research the water cycle.</li> </ul> <p><i><b>Technology suggestion:</b> Use Internet to communicate with meteorologists about how energy transferred by water cycle affects global climate.</i></p>	<p>Uyen has been in the country for 24 months and still communicates in sentence fragments. Teacher provides vocabulary list of terms (e.g., liquid, gas, solid, evaporation, condensation, precipitation, heat, energy, state). Uyen will have an English speaker show her what each term means and she will write definitions or examples in Vietnamese. After demonstration of water cycle, she will generate cyclical picture that illustrates three phases, labeling parts in sentence fragments with vocabulary from her list (<i>Types of extensions: level of support, resources and materials, demonstration of knowledge</i>).</p>

**High School Science  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How does Earth’s internal and external sources of energy affect Earth’s geochemical cycles?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Geochemical Cycles</b></p> <ul style="list-style-type: none"> <li>• investigate how Earth’s sources of energy drive geochemical cycles.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science  
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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>investigate how Earth's energy drives geochemical cycles. Make a hot concentrated solution of water and sugar. Allow the solution to cool and evaporate undisturbed for one week. Observe the formation of crystals. Explain how energy drives the water cycle and how the water cycle aids the formation of Earth's minerals. Document observations and explanations in learning logs.</li></ul>	<p>Brad works well with other students. He can demonstrate what he knows using picture cards and a talking computer. For this activity, Brad will work in a small group. As data is collected on the formation of crystals, Brad will choose correct picture representations for the degree of crystal formation and paste pictures in his journal. The pictures and the written description will be programmed into his computer so he can answer questions in class and can demonstrate his knowledge (<i>Types of extensions: demonstration of knowledge, participation, level of support, procedures and routines, resources and materials, magnitude</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are organisms dependent on the cycling of atoms and molecules, energy flow, and each other in an ecosystem?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Interdependence of Organisms</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• analyze energy flow through ecosystems.</li> <li>• examine the factors that influence the interactions between organisms.</li> <li>• explore how human activities alter ecosystems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
Model III: Integrated Science I**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate the relative abundance of carbon, hydrogen, nitrogen, and oxygen in living things. Identify major compounds found in living things (e.g., CO<sub>2</sub>, H<sub>2</sub>O, proteins, carbohydrates). Trace the movement of these elements between the living and nonliving world. Identify processes (e.g., respiration, photosynthesis, bacterial role in nitrogen cycle) critical to each cycle. Write short stories assuming role of elements or molecules as they cycle through the biosphere. (The element or molecule must pass through at least two organisms.) Share stories with other biology classes.</li> <li>• investigate the nitrogen cycle. Examine nodules from legumes' roots under microscopes after staining with methylene blue. Sketch nitrogen-fixing bacteria. Produce brochures to be distributed to farmers by agricultural field agents about importance of bacteria (<i>WP-Transactive</i>).</li> <li>• design food chains showing humans' position as primary and secondary consumers. Use food chains to construct food webs. Analyze humans' position in energy transfer. Compare vegetarian and non-vegetarian diets to determine effects of each on the environment. Use this information to argue that we should or should not become vegetarians (<i>WP-Transactive</i>). Determine ingredients needed to produce cows, including land, forage, fuel, fertilizers, corn, soybeans, insecticides, herbicides, antibiotics, hormones, and water. Examine distribution and use of resources among nations of the world.</li> <li>• examine how humans alter ecosystems. Explore effects of fertilizer runoff on water resources. Compare observations (e.g., nitrate level, phosphate level, level of dissolved oxygen) of water sources that are near agricultural land to sources that are not and prepare investigative reports. Participate in Kentucky's Water Watch Program.</li> </ul> <p><i>Technology suggestion: Use e-mail to compare findings with students across the state.</i></p>	<p>Mandy needs opportunities to participate in activities to support and encourage her intense interest in scientific research. She will survey garden supply stores to find compounds in commonly used pesticides and other lawn and garden products. The gifted-talented specialist will assist in arranging for her to work with an environmental researcher either through mentorship projects at a university or government environmental agency or via e-mail. Mandy and her mentor will design and perform investigations or experiments related to effects of selected compounds in lawn and garden care products on water resources or on food chains. She will present her findings to local garden clubs or other appropriate audience (<i>Types of extensions: purpose and appropriateness, complexity, level of support, environment, time, order of learning, demonstration of knowledge, resources and materials, procedures and routines, magnitude</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How do behavioral responses to stimuli ensure individual survival and reproductive success for species?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Behavior of Organisms</b></p> <ul style="list-style-type: none"> <li>• investigate behavioral responses.</li> <li>• analyze patterns of behavior.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>



**High School Science  
Model III: Integrated Science I**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate and compare innate and learned behaviors (e.g., habituation, imprinting, classical and operant conditioning) in graphic organizers. Create multimedia presentations illustrating examples of each.</li> <li>• investigate the evolutionary and genetic basis of behavior. Compare advantages and disadvantages of sexual reproduction and asexual reproduction. Explain the adaptive advantages of hermaphroditism, altruistic behavior, and mating systems (e.g., polygamy, polyandry, monogamy). Analyze how animal behaviors (e.g., feeding, mating, social behaviors, communication, territoriality, dominance hierarchies) maximize reproductive success. Explore successful reproductive behaviors of aquatic organisms (e.g., reproductive dormancy). Create posters, bulletin boards, or multimedia presentations giving examples and explaining behaviors.</li> <li>• explore circadian rhythms (e.g., metabolic role, body temperature, feeding times) and cirannual behaviors (e.g., breeding, hibernation). Investigate behavioral responses of organisms in tidal regions. Identify internal or external cues that regulate these behaviors and explore their adaptive nature. See <i>WOW! The Wonders of Wetlands</i> activity Salt Marsh Players</li> <li>• research seasonal affective disorder. Create informational brochures describing what can be done to alleviate or eliminate symptoms. Distribute through healthcare facilities (<i>WP-Transactive</i>).</li> <li>• investigate migration in animals (e.g., whales, butterflies, birds). Explore methods (e.g., piloting, orientation, navigation) and cues (e.g., Sun, magnetic fields, star patterns, chemical concentration gradients) used to find their destinations. Create multimedia presentations for other schools demonstrating how animals migrate.</li> </ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>When energy is transferred what forms can it assume?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b>  <b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• distinguish between types of energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science  
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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate types of energy. Use photogate timer, meter stick, and balance to collect data and calculate change in potential energy and kinetic energy during swing of simple pendulum. Develop reports for customers in local stores that sell grandfather clocks explaining the construction features of clocks that efficiently use kinetic and potential energy. Write encyclopedia entries explaining the interaction between kinetic and potential energy in grandfather clocks (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology Suggestion: Use photogates and graphing calculators to collect and graph data.</i></p>	<p>Seth learns information at the same rate and level as his peers. He uses hearing aides and requires audio trainers or interpreters (sign language) to understand information presented verbally or participate in conversations. He reads information on the same grade level as his peers. For these activities, the teacher will use an audio trainer or interpreter during instruction and discussion. Provide written directions for activities or description of concepts (<i>Types of extensions: resources and materials, level of support</i>).</p>

**High School Science  
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**NOTES**

## **High School Science**

### **Model III: Integrated Science II**

#### **Course Overview:**

The theme of this inquiry based course is constancy and change over time. Students examine constancy in the natural world as well as changes that continually occur. Students examine the formation of matter and energy, properties and interactions, formation of the solar system, and conclude with the constancy of matter and energy in living systems.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- What are the components and structure of the universe?
  
- How are chemical and physical properties of matter related to the structure of matter?
  
- What happens when energy interacts with matter?
  
- What evidence can be found that the Earth and solar system have changed over time?
  
- What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?
  
- What processes are involved in the flow of matter and energy through and between living systems and the physical environment?
  
- How does the law of conservation of energy help me understand the movement of energy?

**High School Science  
Model III: Integrated Science II**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What are the components and structure of the universe?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b>  <b>The Formation and Ongoing Changes of the Universe</b></p> <ul style="list-style-type: none"> <li>• describe theories of the formation of the universe.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science  
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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine components and structure of the universe. Construct physical or pictorial models of universe that show the position of our solar system and accurately represent size and distance. Display models in school cafeteria. Write reviews for the movie <i>Armageddon</i> commenting on the scientific accuracy (<i>WP-Transactive</i>).</li></ul>	

**High School Science  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How are chemical and physical properties of matter related to the structure of matter?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Structure and Properties of Matter</b></p> <ul style="list-style-type: none"> <li>• investigate structure and chemical properties of matter.</li> <li>• investigate structure and physical properties of matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>analyze ways chemical properties are related to the structure of matter. Investigate simple chemical reactions between common household substances (e.g., charcoal burning, mixing baking soda with vinegar). Observe reactions and produce structural models (e.g., pictorial, physical). Explain observed chemical properties in brochures containing consumer safety information to be distributed by local home extension agent (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use publishing software to create brochures.</i></p> <ul style="list-style-type: none"> <li>analyze ways physical properties are related to the structure of matter. Investigate physical properties such as the viscosities of 10W motor oil and 40W motor oil. Produce structural models (e.g., pictorial, physical) that explain observed physical properties. Use structural models to create videos that will be used in vocational school auto mechanic classes explaining viscosities.</li> </ul> <p><i>Technology Suggestion: Use camcorder to make videos.</i></p>	<p>Suzanne understands information presented in simple language. She can demonstrate knowledge by drawing or building models. When working on physical models, she works at a pace typically slower than her same-age peers. When making structural models for these activities, allow Suzanne to develop one model instead of multiple models (<i>Types of extensions: magnitude, pace, complexity</i>).</p> <p>Tim, Brianna, and Cory participated in a Saturday scholars chemistry class in which they investigated physical changes. They measured ice-melting and water-boiling temperatures. They will expand upon the class activity by adding salt and sugar (1g/10mL water) into water and remeasuring ice-melting and water-boiling temperatures. They will record and discuss results and observations and report to the class (<i>Types of extensions: purpose and appropriateness, order of learning, complexity, pace, resources and materials, level of support</i>).</p>

**High School Science  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What happens when energy interacts with matter?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Interactions of Energy and Matter</b></p> <ul style="list-style-type: none"> <li>• investigate energy transfer caused when waves and matter interact.</li> <li>• investigate electrical energy and conductivity through matter.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science  
Model III: Integrated Science II**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate energy transfer between waves and matter. Collect data to produce colored charts of visible bright line spectra of various elements (e.g., metallic salts suspended in flame, neon lights, fluorescent bulbs) using spectrosopes, prisms, or diffraction gratings. Use these charts to identify elements in “unknown” samples supplied by teacher. Use the charts to produce consumer information articles with photos or color drawings to explain why each element absorbs and emits a specific packet of energy. Distribute articles to local hardware stores that sell light bulbs. Write encyclopedia entries explaining the interaction of light waves and various elements (<i>WP-Transactive</i>).</li> <li>investigate the interaction of electrical energy and matter. Design and conduct experiments to identify variables that affect the amount of conductivity and resistance in metal wires. Produce articles that explain how these variables impact wiring for new speakers (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use probes and graphing calculators to collect and graph data.</i></p>	<p>Steve works at the same level as his peers and is able to complete any assignment when in the same time frame. However, he has difficulty interacting with peers and adults. The teacher assigns groups of four to complete the lab. Because Steve is unable to work in groups of that size, the teacher assigns him to work with one other student to complete assignments. Prior to beginning labs, the teacher reviews lab rules, Steve’s behavior plan, and point sheet. Following lab, the teacher gives positive or corrective feedback as necessary (<i>Types of extensions: procedures and routines, level of support, motivation, participation, resources and materials</i>).</p> <p>Ermin, a Limited English Proficiency student who has been in the country for 14 months, has strong verbal skills due to his outgoing nature, but limited academic vocabulary, especially in reading and writing. Assuming that concepts and vocabulary required for lab report have been demonstrated prior to the experiment, physical and visual elements will facilitate him to apply newly acquired knowledge. To assist him in identifying variables, the teacher will provide stereo speakers and metal wires that vary in composition, thickness, length, and insulation. Ermin then will experiment physically with various types of wire to determine interactions of electrical energy and matter. English-speaking students can assist him in putting his ideas into writing (<i>Types of extensions: procedures and routines, level of support, participation, demonstration of knowledge</i>).</p>

**High School Science  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence can be found that the Earth and solar system have changed over time?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>The Formation and Ongoing Changes of the Earth System</b></p> <ul style="list-style-type: none"> <li>• describe the formation of the solar system.</li> <li>• investigate how to estimate geologic time.</li> <li>• examine ongoing changes of the Earth system.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

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**Model III: Integrated Science II**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• model possible mechanisms for the formation of the solar system. Sprinkle lycopodium powder on top of water in beakers and stir (the swirling lycopodium powder represents mass particles coalescing under the influence of gravity.) Produce articles describing other possible mechanisms for the formation of the solar system and describing current changes that are occurring in the solar system (<i>WP-Transactive</i>).</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestion:</b> Use Internet to observe latest photographs of astronomical objects and events.</i></p> <ul style="list-style-type: none"> <li>• investigate geologic time. Construct physical or pictorial models that show subdivisions of geologic time on time lines. Include descriptions of fossils found from each time period. Examine and map coal deposits and other rock sequences across the state. Create educational brochures describing rock formations that contain fossils and distribute at visitor centers (<i>WP - Transactive</i>).</li> <li>• explore how movement of continental plates affected distribution of species. Investigate matching fossils and rock formations across plate boundaries, the unique collection of species on some continents (e.g., marsupials in Australia), and distribution of biogeographical realms.</li> <li>• examine interactions that cause ongoing changes in the Earth system. Model chemical weathering by placing piece of chalk (limestone) in water and another piece in vinegar (acid). Produce articles to predict long term effects of acid rain on erosion of Earth’s surface, limestone cave formation, monuments, and buildings (<i>WP-Transactive</i>).</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestions:</b> Use digital cameras to create photo essays. Create multimedia presentations for city council or county fiscal courts documenting effects of weathering or acid rain on communities.</i></p> <ul style="list-style-type: none"> <li>• investigate significant geologic events (e.g., mountain building, formation of volcanoes) and their impact on speciation. Research adaptive radiation on Hawaiian and Galapagos Islands. Create maps of islands showing locations of different species. Use graphic organizers to compare features of species. Develop models to explain how adaptive radiation occurs on island chains.</li> </ul>	<p>Josh is deaf. He is able to complete tasks similar to grade-level peers. He is provided with a written set of directions for this assignment. During the field trip to investigate coal deposits and other rock sequences, an interpreter signs the speaker’s explanations (<i>Types of extensions: procedures and routines, resources and materials, level of support</i>).</p> <p>Stanley understands information well beyond the level of his peers. He is highly motivated when he is given independence in his study of new concepts. For this activity, Stanley already knows basic concepts of chemical weathering. Contract with Stanley to conduct a research project on the effects of chemical weathering on the local landscape. As part of the research, Stanley will develop a specific set of strategies to decrease the amount of weathering in his community. He will also present strategies to city council members (<i>Types of extensions: motivation, purpose and appropriateness, complexity, time, pace, environment, order of learning, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Biological Change</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul> <p style="text-align: right;"><i>(Continued on page 194)</i></p>

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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate defense mechanisms (e.g., camouflage, mimicry, toxicity, aggressive behaviors, warning coloration) in plants and animals. Select a defense mechanism and identify organisms that exhibit that trait. Identify patterns among groups of organisms. Create graphic representations (e.g., circle graphs, histograms) to display data. Read articles describing industrial melanism (e.g., Kettlewell, H.B.D. “Further Selection Experiments on Industrial Melanism in the Lepidoptera.”). Explain in learning logs how process of natural selection altered populations of peppered moths (<i>Biston betularia</i>).</li> <li>• investigate evolution of various species (e.g., horses). Create murals depicting phylogenetic trees. Discuss how adaptations are advantageous to the survival of species.</li> <li>• examine diversity and unity of organisms. Observe organisms in areas close to school. Sort organisms by structure and develop classification system. Produce essays with photographs to be distributed during parents’ night.</li> <li>• investigate biodiversity. Take field trips to riparian ecosystems. Map physical and biological features. List organisms living in each area and describe their roles. Explore how changes in environments might increase or decrease diversity. Write articles explaining why ecosystems with high biodiversity should be protected (<i>WP-Transactive</i>).</li> <li>• investigate impacts of introduced species (e.g., lamprey eel, rainbow trout, pheasant, purple loosestrife, water hyacinth, Japanese beetle, zebra mussel) on native species. Identify both benefits and liabilities of introduced species. Research ways introductions occur and develop plans to prevent them. Share plans with environmental clubs.</li> <li>• investigate diversity of fish species in Kentucky’s lakes and streams. Invite fish biologist to discuss fish and fish habitats. Interview fishermen and compare with biologists’ information. Use graphic organizers to compare characteristics of fish (e.g., habitats, food sources, mating and breeding patterns). Design dichotomous keys to identify species.</li> </ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p><i>(Continued from page 192)</i>            What evidence suggests that species change over time and how is biological classification used to explain relationships among diverse organisms?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>Biological Change</b></p> <ul style="list-style-type: none"> <li>• examine how species change over time.</li> <li>• examine diversity and classification.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• investigate advances that have effects on science and society.</li> </ul>



**High School Science**  
**Model III: Integrated Science II**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• explore methods of classifying organisms based on structure, function, biochemistry, behavior, nutrition, embryonic development, genetic systems, evolutionary histories, and ecological interactions. Classify various organisms based on pictures and measurements of features (e.g., body form, teeth, skull, feet, skeletal features, body temperature, heart, embryonic development).</li><li>• examine diversity among plants. Identify major highlights of plant evolution (e.g., vascular tissue) and their impact on plant diversification. Identify divisions within plant kingdom and describe their characteristics and significant adaptations. Use graphic organizers to compare characteristics. Create bulletin boards, collages, or multimedia presentations on the economic or medical importance of plants from each division, including local agricultural products.</li><li>• explore loss of biodiversity worldwide. Investigate why tropical rain forests are being destroyed at alarming rates. Debate whether or not developed nations have the right to ask developing nations to slow or stop destruction of their forests.</li><li>• explore diversity among microorganisms. Research types of aerobic and anaerobic bacteria (e.g., <i>Staphylococcus aureus</i>, <i>Clostridium botulinum</i>). Discuss potential impacts on human health (e.g., botulism, vitamin K production). Research and categorize antimicrobial drugs. Investigate how antimicrobial drugs disrupt cell processes or structures or both. Create informational brochures explaining how antimicrobial drugs work and distribute at drugstores.</li><li>• explore beneficial roles of microorganisms (e.g., food production). Organize food fairs for parents' night that highlight the role of microorganisms in food production.</li></ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>What processes are involved in the flow of matter and energy through and between living systems and the physical environment?</p>	<p><b>Students will</b></p> <p><b>Life Science</b> <b>Matter, Energy, and Organization in Living Systems</b></p> <ul style="list-style-type: none"> <li>• recognize that living systems require energy.</li> <li>• investigate photosynthesis, cellular respiration and energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine energy sources for living systems. Construct models of energy containing food molecules (e.g., sugars, proteins). Construct models of simple molecules (e.g., CO<sub>2</sub>, H<sub>2</sub>O) from which food molecules are formed. Display models in classroom.</li> <li>• research methods used to determine the number of calories in foods. Determine number of calories in walnuts by burning walnuts beneath small beakers filled with water. Compare water temperature before and after burning. Compare number of calories released by lipids, proteins, and carbohydrates. Write informational guides for dieters explaining which type of food provides the most calories and why (<i>WP-Transactive</i>).</li> <li>• investigate energy relationships between photosynthesis and respiration. Use models to illustrate the chemistry of photosynthesis and cellular respiration. Write children's stories about the life of plants describing when and where photosynthesis and respiration take place (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use desktop publishing software to create books.</i></p> <ul style="list-style-type: none"> <li>• write articles explaining why rain forests make little or no net contribution to global oxygen production or reduction of global warming (<i>WP-Transactive</i>).</li> <li>• analyze energy flow through ecosystems. Read feature articles from fishing, hunting, or nature magazines and use information to create food webs. Display food webs on bulletin boards. Examine diagrams of energy pyramids for typical ecosystems. Develop diagrams and memos to be used by wildlife biologists for workshops explaining why energy pyramids are broad at bottom and narrow at top.</li> </ul>	<p>Mia has limited fine motor abilities, but her cognitive skills are commensurate with same-age peers. She will need therapeutty rather than modeling clay, stiffer paper, larger objects, and peer or adult assistance constructing her models, but she should be allowed to perform construction of models herself. An occupational therapist will consult regarding appropriate types of materials (<i>Types of extensions: time, procedures and routines, resources and materials, level of support</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1-2.6)</b></p>	<p>How does the law of conservation of energy help me understand the movement of energy?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• recognize that the total energy of the universe is constant.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine energy transfer. Explain how thermal energy is produced in toasters by tracing energy back to its source. List forms of energy during different stages of transfer. Produce brochures to be distributed by local electric cooperatives containing consumer information about efficient energy use by home appliances (<i>WP-Transactive</i>).</li></ul>	<p>Seth learns information at the same rate and level as his peers. He uses hearing aides and requires audio trainers or interpreters (sign language) to understand information presented verbally or participate in conversations. He reads information on the same grade level as his peers. For these activities, the teacher will use an audio trainer or interpreter during instruction and discussion. Provide written directions for activities or description of concepts (<i>Types of extensions: resources and materials, level of support</i>).</p>

**High School Science  
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**NOTES**

## **High School Science**

### **Model III: Integrated Science III**

#### **Course Overview:**

This inquiry based course is developed around the themes of evidence, models, and explanation. Students examine the evidence and models that scientists use to explain the natural world in order to expand on the concepts introduced in Integrated Science I and II. The course is designed to promote ways of applying and integrating scientific ways of thinking to daily life.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How do observable properties of matter enable us to determine the structure of atoms?
  
- What evidence can we find that the universe is in the process of continuous change?
  
- What causes chemical reactions that affect our daily lives?
  
- How are Earth's chemical reservoirs affected by the internal and external sources of energy?
  
- How do cell structures, functions, and processes affect living things?
  
- How does DNA transfer genetic information of organisms to the next generation?
  
- How does the tendency for everything to become less organized help me understand the movement of energy?

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>How do observable properties of matter enable us to determine the structure of atoms?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Structure of Atoms</b></p> <ul style="list-style-type: none"> <li>• analyze atomic structure and electric forces.</li> <li>• examine nuclear structure, nuclear forces, and nuclear reactions.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• explore the impact of science on personal and community health.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>



**High School Science**  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate atomic structure. Analyze visible spectrum emitted from heated elements (e.g., metallic salts suspended in flame, neon lights, fluorescent bulbs) using spectrosopes, prisms, or diffraction gratings. Produce pictorial model that relates wavelength and energy of light emitted to Bohr model of atom. Observe fireworks either directly or on videotape and use colors of displays to identify elements used in fireworks.</li> <li>• simulate radioactive decay. Examine radioactive half-life by placing 100 pennies (atomic nuclei) in closed container (sample of radioactive isotope), shaking it (nuclear reactions), then counting and removing pennies that are heads up. Repeat until all pennies have been removed. Graph number of pennies removed versus trial number. Determine from graph the number of trials it would take to completely remove 200 pennies. Produce investigative reports on radon in homes across Kentucky that show connections between radon occurrence and geological regions in Kentucky. Explain why the radioactive decay of radon is a dangerous nuclear reaction. Extend this report by describing how nuclear structure and nuclear forces cause radon to be radioactive. Present the investigative reports to local health departments. <i>Use this activity to develop possible writing portfolio entries (WP-Transactive).</i></li> </ul>	<p>Randy understands concepts at the same level as his peers. He has difficulty manipulating small objects. For this activity, either pair Randy with a peer who can remove pennies or provide him with larger objects to manipulate (<i>Types of extensions: resources and materials, level of support</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>What evidence can we find that the universe is in the process of continuous change?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>The Formation and Ongoing Changes of the Universe</b></p> <ul style="list-style-type: none"> <li>• describe the formation of the stars.</li> <li>• examine stars.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• investigate factors that contribute to the formation of stars. Write articles explaining the use of stellar parallax to measure distances to stars. Distribute articles to local astronomy clubs (<i>WP-Transactive</i>).</li><li>• investigate components of stars. Observe photographs of spectra from stars. Produce written comparisons to Sun's spectrum and explain the similarities and differences. Create colored charts, posters, or multimedia presentations comparing spectra from stars to Sun's spectrum. Share multimedia presentations with school-based council.</li></ul> <p><i>Technology suggestion: Use multimedia software to develop presentation.</i></p>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>What causes chemical reactions that affect our daily lives?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Chemical Reactions</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> <li>• investigate factors affecting reaction rates.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science**  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate heat energy released when hydrocarbons (e.g., lamp oil, paraffin, alcohol) react with oxygen. Use oil lamp, candle, or alcohol lamp to heat beaker of water. Produce investigative reports that quantitatively compare the heat energy released from a variety of hydrocarbons (e.g., fuel oil, coal, wood, food). Distribute reports to local environmental groups concerned about proper use of natural resources (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use probes and graphing calculators to collect and graph data.</i></p> <ul style="list-style-type: none"> <li>• examine transfer of electrons during chemical reactions (e.g., zinc and dilute hydrochloric acid). Observe reactions and construct structural models (e.g., physical, pictorial) to explain observations. Write encyclopedia entries that use the models to show how transfer of electrons produces electricity in batteries (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use publishing software to create brochures.</i></p> <ul style="list-style-type: none"> <li>• investigate one factor affecting reaction rates. Observe smoldering splint of wood in air and when splint is placed into bottle of pure oxygen. Produce essays with student created drawings to explain how concentration of reactants increase reaction rate. Extend activity by investigating other factors (e.g., temperature, surface area).</li> </ul> <p style="padding-left: 40px;"><i>Technology Suggestion: Use digital camera to create photo essays.</i></p>	<p>Chancy understands concepts when they are presented using verbal descriptions or pictures along with hands-on activities. He can demonstrate his knowledge by explaining what he knows verbally or using drawings. For this activity, provide Chancy with an audiotape of the experiment and expectations prior to class. Allow Chancy to audiotape his prediction of which variables would need to be measured to determine the amount of heat transferred (<i>Types of extensions: procedures and routines, materials, order of learning, demonstration of knowledge</i>).</p>

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>How are Earth's chemical reservoirs affected by the internal and external sources of energy?</p>	<p><b>Students will</b></p> <p><b>Earth/Space Science</b></p> <p><b>Geochemical Cycles</b></p> <ul style="list-style-type: none"> <li>• recognize that the Earth contains a fixed amount of elements.</li> <li>• analyze Earth's chemical reservoirs.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul>

**High School Science  
Model III: Integrated Science III**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine the fixed amount of each stable chemical atom or element in the Earth system. Produce articles explaining how Earth’s resources are being depleted while Earth’s amount of atoms or elements essentially stays the same.</li><li>• research Earth’s chemical reservoirs. Produce articles explaining how plate tectonics affect ways geologists explore for economically important ore deposits (<i>WP-Transactive</i>).</li></ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>How do cell structures, functions, and processes affect living things?</p>	<p><b>Students will</b> <b>Life Science</b> <b>The Cell</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul> <p style="text-align: right;"><i>(Continued on page 212)</i></p>



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**Model III: Integrated Science III**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine cell structures with light microscope. Produce photo essay or essay with student created drawings of basic cell structure (e.g., cell wall, cell membrane, nucleus, cytoplasm, chloroplast, vacuoles). Describe functions of cell structures on mechanical rather than biochemical level (e.g., nucleus and control of cell function, chloroplast and photosynthesis, mitochondria and respiration, cell membrane and transport). Include ways to test the assertion that chicken eggs are cells by comparing functions of different structures in eggs and in cells.</li> </ul> <p><i>Technology suggestion: Use light microscopes or flex cams to examine cell structures.</i></p> <ul style="list-style-type: none"> <li>• investigate reactants and products of the photosynthetic chemical reaction. Use light screens on Geranium leaves. Conduct iodine tests after a few days to determine effects of light and absence of light on production of carbohydrates in leaves. Place <i>Elodea</i> plants into carbonate solutions under bright light. Count oxygen bubbles as they emerge from cut ends of <i>Elodea</i> plants. Analyze these activities and produce an empirical word equation for the photosynthetic chemical reaction. Investigate ways to increase or decrease rate of oxygen production. Compare photosynthesis in plants adapted to life in arid conditions to plants living in Kentucky.</li> <li>• investigate the evolution of eukaryotic cells. Trace the origin of cell organelles. Use graphic organizers to compare characteristics of oldest known cells to modern cells. Create illustrated time lines documenting milestones in the development of the cell theory.</li> <li>• compare functions of cell organelles to school or city structures that have similar functions. Create multimedia presentations showing comparisons.</li> <li>• investigate how and when cells differentiate. Read “<i>How Does a Single Cell Become a Whole Body.</i>” Trace formation of germ layers and identify organ systems that develop from each layer. Create informational bulletin boards, collages, or posters. Examine drugs (e.g., thalidomide, alcohol) and diseases (e.g., rubella) that interfere with differentiation and organogenesis. Write articles to encourage pregnant women to refrain from drinking alcohol. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> </ul>	<p>Carl is able to learn concepts and vocabulary presented in a very concrete manner. He has difficulty with new language and vocabulary and needs visual devices to remind him of the meaning of vocabulary (e.g., photosynthesis), adding one new term and reviewing old ones each day. Also, on the day of the activity, the teacher reviews techniques for using microscopes and parts of the microscope. She also presents a diagram of a cell and its structures. Carl copies it into his notebook. With a partner, Carl examines cell structures with the microscope and compares it to his diagram. Then Carl draws a diagram from the real cell and compares it to his notes, labeling all parts. Carl will answer simple questions to describe functions of cell structures. He does not complete the chicken egg section of the lab (<i>Types of extensions: order of learning, procedures and routines, complexity, magnitude, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Science  
Model III: Integrated Science III**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 210)</i> How do cell structures, functions, and processes affect living things?</p>	<p><b>Students will</b> <b>Life Science</b> <b>The Cell</b></p> <ul style="list-style-type: none"> <li>• investigate cell structures and their functions.</li> <li>• investigate cell regulation, differentiation, and how the process of photosynthesis provides a vital connection between the Sun and energy needs of living systems.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to analyze the use of natural resources.</li> <li>• investigate how science can be used to solve environmental quality problems.</li> <li>• use science to investigate hazards.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science  
Model III: Integrated Science III**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate the changes that occur during metamorphosis of animals (e.g., salamanders, insects, frogs). Create illustrated flow charts explaining the process. Create physical models of young and adult. Identify natural or human-induced hazards (e.g., acid rain) that affect development. Interview biologists about changes in local populations of aquatic organisms. Write letters to legislators regarding effects of acid rain or other pollutants on aquatic organisms (<i>WP-Transactive</i>). See <i>Project Wet Curriculum and Activity Guide</i> activity <i>Where are the Frogs?</i></li> <li>• investigate embryonic development. Examine pictures of different species of embryos at different stages of development. Use graphic organizers to compare features. Research variables that affect embryonic development (e.g., thalidomide, alcohol, diseases). Develop informational brochures for expectant mothers explaining health hazards and distribute through local healthcare facilities (<i>WP-Transactive</i>).</li> <li>• trace what happens to food produced by rain forest trees when its leaves and fruit are eaten by other animals. Create bulletin boards illustrating flow of energy and explaining the photosynthetic process.</li> <li>• create illustrated time lines showing major discoveries in studies of photosynthesis. Include works of major researchers (e.g., Van Helmont, Priestley, Ingenhouz, Sachs, Engelmanson).</li> </ul> <p><i>Technology suggestion: Use software to create time lines.</i></p>	

**High School Science  
Model III: Integrated Science III**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>How does DNA transfer genetic information of organisms to the next generation?</p>	<p><b>Students will</b></p> <p><b>Life Science</b></p> <p><b>The Molecular Basis of Heredity</b></p> <ul style="list-style-type: none"> <li>• investigate DNA.</li> <li>• investigate encoding and replication.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> <li>• investigate advances that have effects on science and society.</li> </ul>

**High School Science**  
**Model III: Integrated Science III**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine DNA structure. Construct models of DNA molecules and show locations of genes. Display models in science labs. Write articles for the local school newspaper concerning future applications of Human Genome Project (<i>WP-Transactive</i>).</li> <li>• examine replication. Create articles showing how one DNA molecule can form exact duplicate of itself (replication). Use photographs of DNA models in essays (<i>WP-Transactive</i>).</li> <li>• investigate life cycles of cells. Examine videos, slides, or photographs of various stages of mitosis and interphase. Recreate stages using students to represent chromosomes.</li> <li>• investigate loss of control over cell division exhibited by cancer cells. Identify chemical substances used in chemotherapy and their purposes. Interview community members who have had chemotherapy, examine the process and how it affected their lives. Write articles for science sections of newspapers and explain the idea that cancer is a normal developmental process gone wrong or write editorials to explain why money should be spent on basic research regarding normal cell cycle (<i>WP-Transactive</i>).</li> <li>• read Watson’s account of the discovery of DNA structure. Summarize methods used and evidence gathered. Investigate lives of other researchers who were involved in the discovery (e.g., Rosalind Franklin, Maurice Wilkins, Francis Crick). Write resumes for each researcher.</li> <li>• investigate protein synthesis including transcription and translation. Create models to demonstrate process. Identify types of RNA present, their function, and locations. Use graphic organizers to compare protein synthesis in eukaryotes and prokaryotes. Explore evolutionary significance of common genetic language.</li> <li>• investigate how some antibiotics work to interrupt protein synthesis of bacteria. Create informational brochures explaining how antibiotics work and distribute at drugstores (<i>WP-Transactive</i>).</li> <li>• investigate how mutations in DNA affects protein synthesis. Identify mutagens (e.g., ultraviolet lights, ionizing radiation). Write articles explaining how mutations may be harmful, neutral, or beneficial, depending on how the proteins they specify interact with other genes and the environment (<i>WP-Transactive</i>).</li> </ul>	<p>Angelica sustained a spinal cord injury in an auto accident. She has limited use of her arms. She received instruction on use of assistive technology and computers. She uses technology with assistive devices to access the key board. To complete this assignment, she is given instruction in use of a graphics program that can help her construct models. She constructs her models using her computer and displays them on a class computer monitor or TV screen. She completes the editorial using her computer (<i>Types of extensions: order of learning, purpose and appropriateness, procedures and routines, resources and materials, demonstration of knowledge</i>).</p>

**High School Science  
Model III: Integrated Science III**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>How does the tendency for everything to become less organized help me understand the movement of energy?</p>	<p><b>Students will</b></p> <p><b>Physical Science</b></p> <p><b>Conservation of Energy and the Increase in Disorder</b></p> <ul style="list-style-type: none"> <li>• examine how everything tends to become less organized.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• apply scientific inquiry and conceptual understandings to solving problems of technological design.</li> <li>• examine the interaction between science and technology.</li> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul>

**High School Science**  
**Model III: Integrated Science III**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine the tendency to become less organized. Design and conduct experiments to determine the rate of dispersion of food coloring dropped into water of different temperatures. Produce reports describing the inquiry approach, observations, and explanations of effects of temperature on rates of dispersion.</li></ul>	<p>Darlene is visually impaired. She is able to design and conduct experiments (e.g., dropping food coloring into different beakers of varying temperatures). Her partner verbally describes results. Darlene records her partner's descriptions and completes her lab report with a Braille writer (Types of extensions: level of support, resources and materials).</p>

**High School Science  
Model III: Integrated Science III**

**NOTES**



## **High School Science**

### **Nutritional and Food Science**

#### **Course Overview:**

Nutritional and food science is a one-credit, interdisciplinary, elective course in which students gain an understanding of selected physical and life science concepts and apply them to everyday life. Much of the study and work in this course is directed toward providing students with an understanding of concepts of nutrition and relationships between nutrition and science. Students use inquiry methods to conduct laboratory investigations. In addition, students explore career possibilities in science, nutrition, microbiology, family and consumer sciences, dietetics, and other research specialties.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies* and nutritional and food science content chart. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content or content from the nutritional and food service content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- What knowledge and skills are necessary to conduct scientific investigations in food science?
- How are nutrients used by the body?
- How is food energy used and stored in the body?
- What factors do microorganisms play in food preparation and decomposition?
- What careers are related to food science?

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Content/Process</b>
<p><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• formulate procedures for food science experiments.</li> <li>• conduct scientific sensory evaluations of food.</li> <li>• identify chemical symbols most often seen in food science.</li> <li>• interpret basic science such as composition of matter, atomic structure, chemical formulas and equations, and chemical and physical changes in food.</li> <li>• identify properties of acids and bases.</li> <li>• test pH of common foods and food ingredients.</li> <li>• determine function of water in the human body and food preparation.</li> <li>• identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how the body uses each.</li> <li>• analyze functions of enzymes.</li> <li>• analyze breakdown of food molecules.</li> <li>• examine chemical bonds of leavening agents.</li> <li>• analyze roles and interrelationships of microorganisms and food and analyze benefits and disadvantages of microbial action.</li> <li>• investigate uses of food additives.</li> <li>• explore career paths in nutritional science.</li> <li>• integrate activities of Future Homemakers of America (FHA) as an integral component of course content and leadership development.</li> <li>• apply math, science, and communication skills within technical content.</li> <li>• demonstrate employability and social skills relevant to the career cluster.</li> </ul>

**High School Science  
Nutritional and Food Science**

**NOTES**

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>What knowledge and skills are necessary to conduct scientific investigations in food science?</p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Physical Science</b></p> <ul style="list-style-type: none"> <li>• investigate structure and physical properties of matter.</li> <li>• analyze atomic structure and electric forces.</li> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• formulate procedures for food science experiments.</li> <li>• conduct scientific sensory evaluations of food.</li> <li>• interpret basic science such as composition of matter, atomic structure, chemical formulas and equations, and chemical and physical changes in food.</li> <li>• identify properties of acids and bases.</li> <li>• test pH of common foods and food ingredients.</li> <li>• apply math, science, and communication skills within technical content.</li> <li>• identify chemical symbols most often seen in food science.</li> </ul> <p style="text-align: right;"><i>(Continued on page 226)</i></p>

## High School Science Nutritional and Food Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use scientific journals (e.g., <i>Scientific American</i>, <i>Science</i>) and Internet resources to investigate methods used to conduct and document results of scientific research. Discuss organizational format used in scientific research.</li> <li>• design and conduct investigations to become familiar with measuring equipment and skills. Determine density of various substances. Compare volume measurements using various types of glassware (e.g., beaker, graduated cylinder). Compare masses using electronic and triple-beam balances. Organize data in tables. Graph mass versus volume measurements. Calculate slope to determine density. Explain in written laboratory reports differences in volume and mass measurements and explain why density may or may not be precise.</li> </ul> <p><i>Technology suggestion: Use integrated software package to create graphs.</i></p> <ul style="list-style-type: none"> <li>• develop observation skills by participating in tasting parties to identify senses used to enjoy food. Compare taste, texture, color, smell, and shape of foods (e.g., low-fat varieties, convenience foods, home-cooked items). Rank foods in order of preference. Discuss significance of test results. Visit local restaurants and write critiques of foods' sensory appeal. Write articles to review restaurants' appeal to diners. <i>Use this activity to develop possible writing portfolio entries (WP Transactive). See Nutrition Curriculum Activities Kit Level 1 activities</i> <ul style="list-style-type: none"> <li>Tasting Party</li> <li>Sensory Food Evaluation Lab</li> </ul> </li> <li>See <i>Diet and Nutrition</i> activities <ul style="list-style-type: none"> <li>Dare to Compare</li> <li>Variety is the Spice of Life</li> </ul> </li> <li>• explore physiological and emotional reasons for hunger. Survey peers to determine how emotions influence eating habits. Keep daily journals of meals and snacks to explain thoughts and feelings prior to eating. Analyze observations to determine patterns and identify emotional reasons for hunger. See <i>Diet and Nutrition Activities</i> activity <ul style="list-style-type: none"> <li>Eating and Emotions</li> </ul> </li> </ul>	<p>Randy understands concepts at the same level as his peers. He has difficulty manipulating objects. For this activity, pair Randy with a peer for lab experiences in measuring. Each partner will be responsible for arriving at his own conclusions, based on raw data. Randy will audiotape his laboratory report (<i>Types of extensions: resources and materials, participation, demonstration of learning, level of support</i>).</p>

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 224)</i>            What knowledge and skills are necessary to conduct scientific investigations in food science?</p>	<p><b>Students will</b>  <b>Program of Studies</b>  <b>Physical Science</b></p> <ul style="list-style-type: none"> <li>• investigate structure and physical properties of matter.</li> <li>• analyze atomic structure and electric forces.</li> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• formulate procedures for food science experiments.</li> <li>• conduct scientific sensory evaluations of food.</li> <li>• interpret basic science such as composition of matter, atomic structure, chemical formulas and equations, and chemical and physical changes in food.</li> <li>• identify properties of acids and bases.</li> <li>• test pH of common foods and food ingredients.</li> <li>• apply math, science, and communication skills within technical content.</li> <li>• identify chemical symbols most often seen in food science.</li> </ul>

## High School Science Nutritional and Food Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>examine effects of advertising on food choices. Record types of foods shown on TV advertisements, length of ad time, and time of advertisement in graphic organizers. Plot results in circle graphs. Extend activity by using magazine ads. Create and videotape their own ads. Determine optimal viewing time to target appropriate markets. See <i>Diet and Nutrition Activities</i> activity Sense Appeal</li> </ul> <p><b>Technology suggestion:</b> Use integrated software package to create graphs.</p> <ul style="list-style-type: none"> <li>investigate physical and chemical properties and changes that occur during food preparation. Organize chemical parties. Make fudge, rock candy, no-bake cookies, and powdered, granulated drink mix to observe physical changes and bake cakes, fry eggs, and sour milk to observe chemical changes. Bring examples of elements, compounds, and homogeneous and heterogeneous mixtures to the party. Describe physical properties of items in cookbooks for other science classes.</li> <li>investigate formation of chemical bonds during chemical changes. Create models of atoms and compounds commonly found in foods, showing bonds. Write time-period news articles about discovery of atoms and subatomic particles.</li> </ul> <p><b>Technology suggestion:</b> See <a href="http://www.shcf.ac.uk/chemistry/web-elements/index-fr.html">http://www.shcf.ac.uk/chemistry/web-elements/index-fr.html</a>.</p> <ul style="list-style-type: none"> <li>design and conduct investigations to determine pH of foods. Complete taste analysis of foods with different pH values and compare results of taste tests with peers. Create visual displays of foods with different pHs. Predict pH and describe properties of acids and bases of other foods.</li> <li>design and conduct experiments to determine effects of cooking on pH of foods. Investigate how pH level of food influences food preservation techniques (e.g., canning, drying, freezing, pickling). Create multimedia presentations depicting optimum preservation techniques.</li> <li>research causes and effects of abnormal levels of blood pH and tests used to determine blood pH. Discuss research on blood pH. Participate in discussions with dietitians to determine how foods affect blood pH. Extend activity to investigate effects of foods on blood sugar level. Interview people who must control sugar level in their diets.</li> </ul>	

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How are nutrients used by the body?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• recognize that living systems require energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• use science to investigate hazards.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> <li>• analyze the role science plays in every day life and compare different careers in science.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• apply math, science and communication skills within technical content.</li> <li>• identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how the body uses each.</li> <li>• determine function of water in the human body and food preparation.</li> </ul> <p style="text-align: right;"><i>(Continued on page 230)</i></p>



## High School Science Nutritional and Food Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate nutrients (e.g., water, carbohydrates, lipids (fats), protein, vitamins) essential to sustaining life. Analyze food labels from common foods to determine nutrient content. Interview medical technologists to determine ways nutrients are measured in blood (e.g., normal ranges versus abnormal ranges). Visit local hospitals to explore ways nutritionists use diet to treat disease and maintain health. Compare current dietary recommendations to past recommendations. Develop informational brochures explaining how proper diets are essential for maintaining health. Distribute brochures through drugstores and hospitals (<i>WP-Transactive</i>). See <i>Diet and Nutrition Activities</i> activities <ul style="list-style-type: none"> <li>Food Guide Pyramid</li> <li>U.S. RDA Information Sheet</li> <li>Put the Label on the Table</li> <li>Label Able</li> <li>Understanding Food Labels</li> </ul> </li> <li>See <i>Food Science Safety and Nutrition</i> activity <ul style="list-style-type: none"> <li>Identifying Basic Components of Food</li> </ul> </li> <li>• research community health problems associated with lack of clean water. Visit local water treatment plants to observe purification processes. Make small-scale models of water purification systems. Design and conduct investigations using common materials (e.g., charcoal) to purify water. Record data and findings. Write research articles for scientific journals outlining experimental procedures for purification experiments. Share experimental design with students in other schools.</li> </ul> <p style="margin-left: 20px;"><b>Technology suggestions:</b> Use CD-ROMs, digital cameras, computers, laser disks, video, and audio to create multimedia presentations. Share information via e-mail, Internet, or Kentucky's TeleLinking Network (KTLN).</p> <ul style="list-style-type: none"> <li>• examine how carbohydrates (e.g., monosaccharides, disaccharides, polysaccharides) are used by the body. Taste test differences between natural sugars and artificial sweeteners. Describe diabetic (e.g., juvenile, mellitus) metabolism of carbohydrates. Develop one-day, balanced meal plans suitable for diabetics. Test for presence of carbohydrates (e.g., simple, complex) in foods. Discuss importance of carbohydrate loading prior to athletic events with athletic trainers. See <i>Food Science Safety and Nutrition</i> activities <ul style="list-style-type: none"> <li>Structure of Carbohydrates</li> <li>Questions About Sugar and Sugar Labeling</li> <li>The Diet's Effect on Daily Activities</li> </ul> </li> </ul>	

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 228)</i> <b>How are nutrients used by the body?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• recognize that living systems require energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• use science to investigate hazards.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> <li>• analyze the role science plays in every day life and compare different careers in science.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• apply math, science and communication skills within technical content.</li> <li>• identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how the body uses each.</li> <li>• determine function of water in the human body and food preparation.</li> </ul> <p style="text-align: right;"><i>(Continued on page 232)</i></p>

**High School Science  
Nutritional and Food Science**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate roles of lipids in the body. Identify two types of lipids (e.g., saturated, nonsaturated) in foods and the body. Test for presence of lipids (fats) in foods. Visit fast food restaurants and analyze fat content of foods using nutritional literature published by restaurant. Compare percentage of fat in fast foods with American Heart Association’s recommendation for fat. Analyze data and create graphs of findings, share with class. Examine connections between saturated fat, cholesterol, and heart disease. Interview cardiologists to identify causes and effects of heart disease (e.g., arteriosclerosis, atherosclerosis, athyrosis). Test fat content of different types of hamburger (e.g., 30% fat, 20% fat, 10% fat) from supermarkets, using solvents to remove fat from meat. Compare fat content to that listed on label. Prepare test tube displays showing percentages of fat content in foods. Develop menus using heart-healthy foods.</li> </ul> <p><i>Technology suggestions: Use CD-ROMs, digital cameras, computers, laser disks, video, and audio to create multimedia presentations. Use integrated software package to create graphs.</i></p> <ul style="list-style-type: none"> <li>• investigate roles of protein (e.g., complete, incomplete) in the body. Create diets that are nutritionally sound and use complete and incomplete proteins. Calculate number of calories from protein in diet. Present results of protein diets using multimedia sources. Compare vegetarian and nonvegetarian diets (e.g., lactovegetarian, pure vegetarian, ovolactovegetarian diet). Plan vegetarian diets that provide adequate protein. Analyze case studies to determine if Recommended Dietary/Daily Allowances (RDA) of protein are met. See <i>Nutrition Curriculum Activities Kit - Level 2</i> activities <ul style="list-style-type: none"> <li>The Vegetarian Diet</li> <li>Complimentary Protein Relationships</li> <li>Complementing Your Proteins</li> </ul>           See <i>Nutrition Curriculum Activities Kit - Level 1</i> activities <ul style="list-style-type: none"> <li>Nutrition Super Sleuth</li> <li>The Egyptian Connection</li> <li>Lost In Space</li> </ul>           See <i>Nutrition Curriculum Activities Kit - Level 1</i> activity <ul style="list-style-type: none"> <li>All About Energy-yielding Nutrients: Protein</li> </ul> </li> </ul>	

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 230)</i> <b>How are nutrients used by the body?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• investigate the cycle of atoms and molecules within the biosphere.</li> <li>• recognize that living systems require energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• use science to investigate hazards.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• investigate advances that have effects on science and society.</li> <li>• analyze the role science plays in every day life and compare different careers in science.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• apply math, science and communication skills within technical content.</li> <li>• identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how the body uses each.</li> <li>• determine function of water in the human body and food preparation.</li> </ul>

## High School Science Nutritional and Food Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>investigate role of vitamins (e.g., fat soluble, water soluble) and minerals (e.g., macro, trace) in the body. Design and conduct investigations to distinguish between fat-soluble and water-soluble vitamins. Interview local pharmacists about vitamin and mineral supplements and outline major points of presentation, including benefits and hazards of using supplements. Visit pharmacy and compare U.S. Pharmacopoeia (USP) standards of different brands of multivitamins and cost of brands. Use integrated software package to analyze data and create bar graphs of USP standards of different brands. Research diseases (e.g., pellagra, beri beri, kwashiorkor, scurvy, rickets, night blindness, anemia) caused by lack of vitamins and minerals. Videotape oral presentations to share with other classes. See <i>Nutrition Curriculum Activities Kit - Level 1</i> activity  All About Vitamins, Minerals, and Water  See <i>Nutrition Curriculum Activities Kit - Level 1</i> activities  The Case of the Volunteer Victims  The Case of the Wobbling Hens</li> </ul> <p><b>Technology suggestion:</b> Use camcorders to videotape presentations.</p> <ul style="list-style-type: none"> <li>determine effects of exercise on loss or maintenance of weight. Predict future weight gain or loss if eating and exercise habits remain constant. Critique various exercise videotapes (e.g., “Sweatin’ to the Oldies”) to determine which burns the most calories. Research exercise programs offered to the public. Analyze fad diets (e.g., grapefruit diet, protein supplement drinks, fat-burner pills) for nutritional value. Investigate their relationships to eating disorders (e.g., anorexia nervosa, bulimia) and evaluate for safety. Discuss problems associated with eating disorders. Watch videos about eating disorders. Debate positive and negative effects media has on body image. Conduct school surveys to determine number of students who have dieted and types of diets used. Write articles for school newspapers encouraging positive weight control programs (<i>WP - Transactive</i>). See <i>Diet and Nutrition Activities</i> activity  Diet Spy</li> </ul>	

**High School Science  
Nutritional and Food Science**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Nutritional Science Content Chart
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>How is food energy used and stored in the body?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Physical Science</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> </ul> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• analyze energy flow through ecosystems.</li> <li>• recognize that living systems require energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All Program of Studies scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in every day life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• interpret basic science for food science such as composition of matter, atomic structure, chemical formulas and equations, and chemical/physical changes in food.</li> <li>• apply math, science, communication skills within technical content.</li> <li>• identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how body uses each.</li> <li>• analyze functions of enzymes.</li> <li>• analyze breakdown of food molecules.</li> </ul> <p style="text-align: right;"><i>(Continued on page 236)</i></p>

**High School Science  
Nutritional and Food Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine how food is digested in the body. Draw or make models, labeling organs (e.g., mouth, esophagus, stomach, small intestine, gall bladder, liver, appendix, pancreas, large intestine) that are involved in the digestive process. Interview physicians and discuss disorders of the digestive system. See <i>Diet and Nutrition Activities</i> activities <ul style="list-style-type: none"> <li>Breakdown</li> <li>As the Stomach Churns</li> <li>Liver, Gallbladder, and Pancreas</li> </ul> </li> <li>• conduct interviews with family members or friends that have digestion problems (e.g., ulcers, acid reflux). Investigate contents of over-the-counter medications used to treat digestive problems. Design and conduct titrations to determine which over-the-counter remedies (e.g., Tums, Roloids, Mylanta, Pepto-Bismol, Milk of Magnesia, baking soda) decrease pH of stomach acid. Document results of titration experiments and write summaries, defending best medications.</li> <li>• design and conduct experiments that compare substances that retard enzymatic browning of fruits (e.g., lemon juice, pectin). Record time-lapse enzymatic browning. Conduct blind taste tests comparing fresh fruit to fruit that has enzymatic browning. Determine effects fruit pH has on rate of enzymatic browning.</li> </ul> <p style="margin-left: 40px;"><i><b>Technology suggestion:</b> Use CD-ROMs, digital cameras, computers, laser disks, video, and audio to create multimedia presentations.</i></p> <ul style="list-style-type: none"> <li>• record 3-day, food-intake in diary and 24-hour activity records (e.g., sleeping, studying, working, eating, exercising). Calculate basal metabolic rate (BMR), energy need, and energy output for one day. Complete case studies that examine factors (e.g., body size and composition, age, gender, environment, physiological state, personal life-style, pregnancy, infancy) affecting BMR, energy need, and energy output. See <i>Nutrition Curriculum Activities Kit- Level 2</i> activities <ul style="list-style-type: none"> <li>Metabolism: Balancing Energy Input and Energy Output</li> <li>The Survival Mission</li> <li>What is the Energy Output? Case #1</li> <li>What is the Energy Output? Case #2</li> <li>What is the Energy Output? Case #3</li> </ul> </li> </ul> <p>See <i>Diet and Nutrition Activities</i> activity Calories and BMR</p>	

**High School Science  
Nutritional and Food Science**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 234)</i> <b>How is food energy used and stored in the body?</b></p>	<p><b>Students will</b> <b>Program of Studies</b> <b>Physical Science</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> </ul> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• analyze energy flow through ecosystems.</li> <li>• recognize that living systems require energy.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <ul style="list-style-type: none"> <li>• identify and refine questions and identify scientific concepts.</li> <li>• design and conduct different kinds of scientific investigations.</li> <li>• use equipment, tools, techniques, technology, and mathematics.</li> <li>• use evidence, logic, and scientific knowledge.</li> <li>• communicate designs, procedures, and results.</li> <li>• review and analyze scientific investigations.</li> </ul> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• use science to analyze the use of natural resources.</li> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• analyze how science and technology are necessary for solving issues.</li> <li>• analyze the role science plays in every day life and compare different careers in science.</li> <li>• recognize that scientific knowledge is subject to change.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• interpret basic science for food science such as composition of matter, atomic structure, chemical formulas and equations, and chemical/physical changes in food.</li> <li>• apply math, science, communication skills within technical content.</li> <li>• identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how body uses each.</li> <li>• analyze functions of enzymes.</li> <li>• analyze breakdown of food molecules.</li> </ul>



## High School Science Nutritional and Food Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate foods containing each organic nutrient, describing its importance to the body. Examine importance of inorganic nutrients and their role as part of the diet. Create illustrated essays to explain chemical and physical processes of digestion.</li> <li>• investigate how cells store energy and how they use energy to carry out life activities. Research nutritional diets for different ages and activities. Determine total food energy value of selected diets.</li> <li>• examine energy sources for living systems. Construct models of energy containing food molecules (e.g., sugars, proteins). Construct models of simple molecules (e.g., CO<sub>2</sub>, H<sub>2</sub>O) from which food molecules are formed. Display models in classroom.</li> <li>• research methods used to determine number of calories in foods. Determine number of calories in walnuts by burning walnuts beneath small beakers filled with water. Compare water temperature before and after burning. Compare number of calories released by lipids, proteins, and carbohydrates. Write informational guides for dieters explaining which type of food provides most calories and why (<i>WP - Transactive</i>).</li> <li>• design food chains showing humans' position as primary and secondary consumers. Use food chains to construct food webs. Analyze humans' position in energy transfer. Compare vegetarian and nonvegetarian diets to determine effects of each on environment.</li> </ul>	<p>Mia has limited fine motor abilities, but her cognitive skills are commensurate with same age peers. She will need therapy, rather than modeling clay, stiffer paper, larger objects. Peer or adult assistance constructing her models will be needed, but she should be allowed to perform construction of models herself. An occupational therapist will consult regarding appropriate types of materials (<i>Types of extensions: time, procedures and routines, resources and materials, level of support</i>).</p>

**High School Science  
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Academic Expectations	Guiding Questions	Correlations to the Program of Studies and Nutritional Science Content Chart
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><b>What factors do microorganisms play in food preparation and preservation?</b></p>	<p><b>Students will</b></p> <p><b>Program of Studies</b></p> <p><b>Physical Science</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> </ul> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• examine diversity and classification.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b></p> <p><b>All <i>Program of Studies</i> scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to investigate hazards.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• interpret basic science for food science such as composition of matter, atomic structure, chemical formulas and equations, and chemical/physical changes in food.</li> <li>• apply math, science and communication skills within technical content.</li> <li>• analyze roles and interrelationships of microorganisms and food and benefits and disadvantages of microbial action.</li> <li>• investigate uses of food additives.</li> </ul> <p style="text-align: right;"><i>(Continued on page 240)</i></p>

## High School Science Nutritional and Food Science

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>examine types of food borne illnesses (e.g., salmonellosis, botulism, campylobacteriosis, listeriosis, shigellosis, staphylococcal food poisoning) and microorganisms (e.g., <i>Salmonella</i>, <i>Clostridium botulinum</i>, <i>Campylobacter jejuni</i>, <i>Listeria monocytogens</i>, <i>Clostridium perfringens</i>, <i>Shigella</i>, <i>Staphylococcus aureus</i>) that cause illnesses. Research microorganisms beneficial to food preparation and preservation. Compare organisms that caused diseases in the past to disease causing organisms of today. Draw or make models of microorganisms that cause food-borne illnesses. Visit toxicology/microbiology labs. Tour food processing plants to observe tests for presence of microorganisms in food samples. Interview health safety inspectors on inspection standards (e.g., Food and Drug Administration (FDA), United States Department of Agriculture (USDA), state and local health agencies) that must be met by all food establishments. Interview school, food services coordinators to determine how safety standards are enforced. Report findings from interviews in school newspapers. Create brochures about food-safety standards and food-borne illnesses. Distribute at local supermarkets (<i>WP-Transactive</i>). See <i>Food Science Safety and Nutrition</i> activities</li> </ul> <p style="margin-left: 40px;">Regulations That Protect Our Food Supply Food Products - Who Regulates Them? Safe Handling Beyond the Retail and Wholesale Shelf Bacteriological Examination of Food Equipment and Eating Utensils Bacteria in Milk - A Chemical Analysis The Unwelcomed Dinner Guest - Prevent Food Borne Illness Organisms That Bug You</p> <p><i>Technology suggestion: Use integrated software packages to develop brochures.</i></p> <ul style="list-style-type: none"> <li>investigate food additives. Design and conduct experiments to determine efficacy (e.g., enhance flavor or color, aid processing or preparation, preserve quality, add nutrients) of additives. Research United States Department of Agriculture (USDA) and Food and Drug Administration (FDA) control over additives manufacturers use, including process followed to be included on FDA's Generally Recognized as Safe (GRAS) list.</li> </ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p><i>(Continued from page 238)</i> What factors do microorganisms play in food preparation and preservation?</p>	<p><b>Students will</b> <b>Program of Studies</b> <b>Physical Science</b></p> <ul style="list-style-type: none"> <li>• investigate chemical reactions and energy.</li> <li>• examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.</li> </ul> <p><b>Life Science</b></p> <ul style="list-style-type: none"> <li>• examine diversity and classification.</li> <li>• analyze the flow of matter and energy.</li> </ul> <p><b>Scientific Inquiry</b> <b>All Program of Studies scientific inquiry bullets are included in this guiding question.</b></p> <p><b>Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• examine the interaction between science and technology.</li> <li>• explore the impact of science on personal and community health.</li> <li>• recognize that scientific knowledge is subject to change.</li> <li>• recognize how science influences human population growth.</li> <li>• use science to investigate hazards.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• interpret basic science for food science such as composition of matter, atomic structure, chemical formulas and equations, and chemical/physical changes in food.</li> <li>• apply math, science and communication skills within technical content.</li> <li>• analyze roles and interrelationships of microorganisms and food and benefits and disadvantages of microbial action.</li> <li>• investigate uses of food additives.</li> </ul>

**High School Science  
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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• design and conduct skits that demonstrate effects of microorganisms on food. Use microscopes to view different kinds of microorganisms grown on food samples. Sketch microorganisms. Visit dairy processing plants to learn how microorganisms are essential for production of foods. Make yogurt for parents' night. See <i>Food Science Safety and Nutrition</i> activities <ul style="list-style-type: none"> <li>Dairy Products Lab</li> <li>Making Yogurt</li> <li>Subsurface Mold Growth in Foods - Control of Molds in Bread</li> <li>Desirable Microbial Growth in Foods - Yeast Fermentation</li> </ul> <p><i>Technology suggestion: Use flex cams or light microscopes to view microorganisms.</i></p> </li> <li>• compare methods of food preservation (e.g., canning, dehydration, freezing, irradiation, pickling). Investigate functions of additives (e.g., nutritive, preservative, quality-giving, cosmetic) in foods. Tour supermarkets and determine most common method of food preservation. Conduct taste comparisons of food preserved by different methods and report results to class. Observe cooperative extension agents demonstrating safe food preservation methods. Debate how improved food quality has affected human population growth. See <i>Food Science Safety and Nutrition</i> activities <ul style="list-style-type: none"> <li>Effects of Light on Food Flavor</li> <li>Food Dehydration</li> <li>Frozen Foods</li> <li>Desirable Microbial Growth in Foods - Experimental Modification of Pickle Fermentation</li> </ul> <p>See <i>Diet and Nutrition Activities</i> activities</p> <ul style="list-style-type: none"> <li>Food Inspector</li> <li>What Is That Stuff?</li> <li>Additives or Preservatives?</li> </ul> <p>See <i>Nutrition Curriculum Activities Kit - Level 2</i> activities</p> <ul style="list-style-type: none"> <li>Chemical You Eat</li> <li>Food Label Tree</li> <li>To Add or Not To Add</li> <li>Fortified Foods</li> </ul> <p>See <i>Food Science Safety and Nutrition</i> activities</p> <ul style="list-style-type: none"> <li>Food Safety Risk Assessment - Additives Classes and Function</li> <li>Food Safety Risk Assessment - Nitrites and Nitrates in Meat Food Safety Decisions</li> </ul> </li> </ul>	

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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies and Nutritional Science Content Chart</b>
<p style="text-align: center;"><b>Scientific Ways of Thinking and Working, Patterns, Systems, Scale and Models, Constancy, and Change Over Time (2.1 - 2.6)</b></p>	<p>What careers are related to food science?</p>	<p><b>Students will</b></p> <p><b>Program of Studies Applications/Connections</b></p> <ul style="list-style-type: none"> <li>• analyze the role science plays in everyday life and compare different careers in science.</li> </ul> <p><b>Nutritional Science Content Chart</b></p> <ul style="list-style-type: none"> <li>• apply math, science and communication skills within technical content.</li> <li>• explore career paths in nutritional science.</li> <li>• integrate activities of FHA as an integral component of course content and leadership development.</li> </ul>

**High School Science  
Nutritional and Food Science**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate careers in food science (e.g., dietitian, nutritionist, bacteriologist, chemist, sensory evaluator) and food industries (e.g., quality assurance, production/operations management, product development, technical sales/service chef, cook, food processing plant employee, butcher, baker). Interview people in food-related careers (e.g., dietitian, cooperative extension agent). Compare different food science occupations with respect to potential income and career advancement. Prepare career day presentations comparing food science programs at postsecondary schools. Shadow chefs in hotels or restaurants. Develop informational articles on careers to distribute through school guidance offices (<i>WP-Transactive</i>). See <i>Food Science, Safety, and Nutrition</i> activity  Careers in Food Science - Sensory Evaluation</li> <li>• participate in local, regional, state, and national FHA leadership conferences and competitions.</li> </ul>	

**High School Science  
Nutritional and Food Science**

**NOTES**



## Science Glossary

**Biodiversity:** The diversity of different species and the genetic variability among individuals within each species.

**Biogeographical realms:** Major regions of the Earth with distinctive flora and fauna.

**Biomass:** The dry weight of organic matter comprising a groups of organisms in a particular habitat.

**Biome:** One of the world's major communities, classified according to the predominant vegetation and characterized by adaptations of organisms to that particular environment.

**Calorie:** A unit equivalent to the large calorie expressing heat-producing or energy-producing value in food when oxidized in the body.

**Circannual behaviors:** Behaviors that occur regularly at about one-year intervals.

**Circadian rhythms:** A sequence of behaviors that occur regularly at about 24-hour intervals.

**Crepuscular:** Appearing or active in the twilight.

**Diffraction grating:** Usually a glass or polished metal surface having a large number of very fine parallel grooves or slits cut in the surface and used to produce optical spectra by diffraction of transmitted or reflected light.

**Diorama:** A scenic representation in which sculptured figures and lifelike details are displayed usually in miniature so as to blend indistinguishably with a realistic painted background.

**Diurnal:** Active by day.

**Electrophoresis:** A technique used to sort proteins according to their responses in electric fields.

**Emission-free:** Does not discharge polluting substances into air.

**Eukaryote:** An organism having cells with well-defined nuclei.

**Flex cam:** A lightweight, high resolution video camera and lens mounted on a flexible wand.

**Genetic engineering:** Scientific activities that develop desirable characteristics in organisms by altering genes or inserting new genes in organisms' cells.

**Genotype:** The genetic makeup of an organism.

**Geochemical cycles:** A variety of cycles that connect and continually circulate energy and material through the components of the earth system.

## Science Glossary

**Geographic tools:** Maps, globes, and other items used to document natural features, or populations of regions.

**Geothermal energy:** Energy of or relating to the heat of the earth's interior.

**Human genome project:** Began in 1990, the U.S. Human Genome Project is a 15-year effort coordinated by the U.S. Department of Energy and the National Institutes of Health to:

- Identify all the estimated 80,000 genes in human DNA.
- Determine the sequences of the 3 billion chemical bases that make up human DNA, store this information in databases, and develop tools for data analysis.

**Hydroponics:** The cultivation of plants by placing their roots in liquid nutrient solutions.

**Incandescent lamp:** An electric lamp in which a filament gives off light when heated to incandescence by an electric current.

**Lycopodium powder:** A fine yellowish flammable powder composed of spores from any of a large genus (*Lycopodium*) of erect or creeping club mosses with evergreen one-nerved leaves in four to many ranks.

**Melanism:** An increased amount of black or nearly black pigmentation of an organism.

**Mendelian inheritance:** A model or mechanism of inheritance documented by Gregor Mendel.

**Meteorologist:** One who studies atmosphere and its phenomena (climate, weather).

**Multiple allelic inheritance or trait:** Inheritance pattern or trait controlled by three or more alleles of the same gene that codes for a single trait.

**New Madrid Fault System:** A series of faults beneath the continental crust in a weak spot known as the Reelfoot Rift. The fault system extends 150 miles southward from Cairo, Illinois through New Madrid, Missouri to Marked Tree, Arkansas.

**Nocturnal:** Active at night.

**Operating systems:** Mechanical, fluid, electrical and thermal systems used in modern technology.

**Organogenesis:** An early period of rapid embryonic development in which organs take form from primary germ layers.

**Passive solar house:** A house designed to receive and store the solar heat during the cool winter months. The design takes advantage of the sun's position.

**Pedigree:** A family record that shows how a trait is inherited over several generations.

## Science Glossary

**Phenotype:** The physical and physiological traits of organisms.

**Photogate:** An electronic device having an electrical output that varies in response to light.

**Phototransistor:** A transistor having highly photosensitive electrical characteristics.

**Phylogenetic tree:** A visual model of the inferred evolutionary relationships among organisms.

**Polygenic inheritance:** An additive effect of two or more genes on a single phenotypic character.

**Probe:** A device used to penetrate or send back information.

**Prokaryote:** A cellular organism the nucleus of which has no limiting membrane.

**Seismograph:** Any of various instruments for measuring and recording vibrations of earthquakes.

**Spectra:** Plural form of spectrum.

**Spectroscope:** An instrument for forming and examining optical spectra.

**Spectrum:** A series of images formed when a beam of radiant energy is subjected to dispersion and brought to focus so that the component waves are arranged in the order of their wavelengths (as when a beam of sunlight that is refracted and dispersed by a prism forms a display of colors).

**Spin-offs :** Derived products or effects as result of another project or program.

**Stellar parallax:** An apparent change in the direction of a star, caused by a change in observed position that provides a new line of sight.

**Tempering:** To harden metal by reheating and cooling.

**Transactive reading:** Reading for authentic purposes and audiences beyond completing assignments.

**Transactive writing:** Writing produced for authentic purposes and audiences beyond completing assignments to demonstrate learning.

**Turbid:** Not clear or transparent because of stirred-up sediment or the like; clouded; opaque.

**Viscosity:** The property of a fluid or semifluid that enables it to develop and maintain an amount of shearing stress dependent upon the velocity of flow and then to offer continued resistance to flow.

**Watershed:** Entire area of land that drains into rivers.

## Science Student Resources

### Publications: Periodicals

Caldwell, M. "How Does a Single Cell Become a Whole Body?" *Discover* (November 1992).

Duffy, D.C. "Land of Milk and Poison." *Natural History* (July 1990).

Engel, C.W., and R.R. Smith. "Gizmos: Electronic Devices for Problem Solving." *Science Scope* 18(5) (1995): 30-34.

Faulkner, S.P., and R.V. Hairston "Supermarket Cytology." *Science Scope* 19(3) (1995): 23-25.

Higginson, L. "Selling an Energy Source." *Science Scope* 19(5) (1996): 20-24.

Kettlewell, H. B. D. "Further Selection Experiments on Industrial Melanism in the Lepidoptera." *Heredity* 10: 287-301, 1956.

### Publications: Books

Barber, J. *To Build a House*, Berkley: University of California (GEMS), 1991.

Caidin, M. *Destination Mars: In Art, Myth, and Science*. Penguin Books, 1997.

Carson, Rachel. *Silent Spring*.

Cherry, L. *A River Ran Wild*.

Hershey, S. *Hiroshima*.

Holling, H.C. *Minn of the Mississippi*.

Reading Rainbow. *Three Days on a River in a Red Canoe*.

## Science Teacher Resources

### Programs

Challenger Learning Center Sites. *Challenger Learning Center of Kentucky*. Hazard , Radcliff, KY (800) 98-STARS <http://www.challenger.org>

Kentucky Transportation Cabinet. *Kentucky Engineering Exposure Network (KEEN)* Frankfort, KY (606) 677-4017).

The Kentucky Network (KET). *Kentucky Educational Television*. Lexington, KY. (800) 432-0951

### Publications: Books

American Chemical Society. *Chemistry in the National Science Education Standards*. Washington DC: Author, 1997.  
ISBN 8412-3551-1. (800) 209-0423

American Forest Foundation. *Project Learning Tree Environmental Education Activity Guide*. Washington, DC: Author, 1996.

Anderson, W. *Rocks and Minerals of Kentucky: Special Publication 20, Series 11*. Lexington: University of Kentucky Geologic Survey Publications Office.  
(606) 257-3896

Bell, P., C. Byrd-Berdbenner, L. Hsu, I. Laquatra, J. Rye, and K. Sargad. *Nutrient Curriculum Activities Kit. Levels 1-2* West Nyack, NY: The Center for Applied Research in Education, Inc.

Campbell, Vincent, Jocelyn Lofstrom, and Brian Jerome. *Decisions Based on Science* Arlington: National Science Teachers Association, 1997.  
ISBN: 0-87355-165-6. (800) 722-NSTA

Chronical Guidance Publications, Inc. *Food Scientist*. Moravia, NY: Author.

Ford, B.A., and P. Smith. *Project Earth Science: Physical Oceanography*. Arlington: National Science Teachers Association, 1995.

## Science Teacher Resources

- Gonsalves, P. *Build It! Festival*. Berkley: Berkley: University of California, 1996.
- Gould, A. *Hot Water Houses from Sunlight*. Berkley: Lawrence Hall of Science (GEMS), 1986.
- Greb, S. *Geologic Map of Kentucky*. Lexington: University of Kentucky Geologic Survey Publications Office.  
(606) 257-3896
- Greb, S. *Progression of Life: Poster*. Lexington: University of Kentucky Geologic Survey Publications Office.  
(606) 257-3896
- Greb, S. *The Guide to Progression of Life: Special Publication 13 Series 11 with Notes on History of Life in Kentucky*. Lexington: University of Kentucky Geologic Survey Publications Office.  
(606) 257-3896
- Hartman, W.K. *Craters!*. Arlington: National Science Teachers Association, 1995.
- Institute of Food Technologists. *Don't Be Puzzled About Your Future*. Chicago, IL: Author.
- Institute of Food Technologists. *Food Science Experiments*. Chicago, IL: Author.
- Institute of Food Technologists. *The World's Largest Industry*. Chicago, IL: Author.
- Kaufman, J. *River Cutters*. Berkley: Lawrence Hall of Science (GEMS), 1989.
- Kentucky Department of Education. *Transformations: Kentucky's Curriculum Framework*. Frankfort: Author. 1993, 95.
- Kentucky Waterways Alliance. *Splashing in Kentucky: An Educators Guide to Nonpoint Source Water Pollution*. Frankfort, Ky: Kentucky Division of Water, 1998.  
(502) 564-3410
- Larson, E. *Summer for the Gods*. New York: Basic Books, 1997.
- Mehas, K., and S. Rodgers. *Food Science and You*. Mission Hills, CA: Glencoe-McGraw Hill, 1989.
- Modern Talking Picture Service. *In Good Taste: Careers In Food Science*. St. Petersburg, FL: Author.
- National FFA Foundation. *Food Science, Safety, and Nutrition*. Madison, WI: Author.  
(608) 829-3105 FAX (608) 829-3915

## Science Teacher Resources

National Research Council. *National Science Education Standards*. Washington, DC: National Academy Press, 1996.  
ISBN 0-309-05326-9. (800) 624-6242

National Science Teachers Association. *AIR: Understanding Our Environment*. Arlington: Author, 1995.  
NSTA Stock Number: PB115X, ISBN: 0-87355-133-8. (800) 722-NSTA

National Science Teachers Association. *LIFE: Understanding Our Environment*. Arlington: Author, 1995.  
NSTA Stock Number: PB115X, ISBN: 0-87355-133-8. (800) 722-NSTA

National Science Teachers Association. *Planet: Understanding Our Environment*. Arlington: Author, 1995.  
NSTA Stock Number: PB115X, ISBN: 0-87355-133-8. (800) 722-NSTA

Potter, N. *Food Science*. 4th ed. Florence, KY: VanNorstrand Reinhold. 1986.

The National Science Teachers Association. *Scope, Sequence, and Coordination of Secondary School Science, Volume I, The Content Core*. Washington, DC: Author, 1989, 1993.  
ISBN 0-87355-107-9. (800) 722-NSTA

The National Science Teachers Association. *Scope, Sequence, and Coordination: A Framework for High School Science Education*. Arlington: Author, 1996.  
ISBN 0-87355-142-7. (800) 722-NSTA

The National Science Teachers Association. *NSTA Pathways to the Science Standards, Elementary School Edition*. Arlington: Author, 1997.  
ISBN 0-87355-161-3. (800) 722-NSTA

The National Science Teachers Association. *NSTA Pathways to the Science Standards, Middle School Edition*. Arlington: Author, 1998.  
ISBN 0-87355-166-4. (800) 722-NSTA

The National Science Teachers Association. *NSTA Pathways to the Science Standards, High School Edition*. Arlington: Author, 1997.  
ISBN 0-87355-144-3. (800) 722-NSTA

Project 2061, American Association for the Advancement of Science. *Benchmarks for Science Literacy*. New York: Oxford University Press, 1993.  
ISBN 0-19-508986-3. (800) 451-7556

Project WET and the Western Regional Environmental Education Council. *Project WET Curriculum & Activity Guide*. Bozeman, MT: Author, 1995.  
(406) 994-5392 FAX: 406-994-1919 e-mail: rwwet@msu.oscs.montana.edu

## Science Teacher Resources

Rutherford, F. J. and A. Ahlgren. *Science for All Americans*. New York: Oxford University Press, 1989, 1990.  
ISBN 0-19-506771-1. (800) 451-7556

Sumners, C. *Toys in Space*. Peoria, IL: McGraw Hill, 1997.

Sutter, D. *Moons of Jupiter*. Berkley: University of California (GEMS), 1993.

The American Forest Council. *Project Learning Tree*. Washington, DC : Author, 1988.

The Kentucky Environmental Quality Commission. *Kentucky's Environment*. Frankfort, KY: Author. 1993.

The Watercourse and Environmental Concern, Inc. *WOW! The Wonder of Wetlands*. St. Michaels, MD: Environmental Concern, 1995.  
ISBN 1-888631-00-7 (410) 745-9620 FAX (410) 45-3517)

Toner, P. *Diet and Nutrition Activities*. West Nyack, NY: The Center for Applied Research in Education.

University of Wisconsin. *How Much Red Meat Do Americans Really Eat?* Extension-Agricultural Bulletin (87-2). Madison, WI: Author.

USDA Extension Service. *Lean Meat: The Consumer's Choice*. Washington, DC: Author.

Weise, J. *Roller Coaster Science*. New York: John Wiley and Sons, Inc., 1994.  
ISBN: 0-471-59404-0 <http://www.sci.mus.mn.us>

Western Regional Environmental Education Council. *Aquatic Project WILD Education Activity Guide*. Bethesda, MD: Author, 1992,  
Fax (301) 493-5627 e-mail: [natpwild@igc.apc.org](mailto:natpwild@igc.apc.org)

Western Regional Environmental Education Council. *Project WILD*, Bethesda, MD: Author, 1992,  
(Phone: 301-493-5447, Fax: 301-493-5627, e-mail: [natpwild@igc.apc.org](mailto:natpwild@igc.apc.org)).

Wright, R.G. *Flood: An Event-Based Science Module*. New York: Addison Wesley, 1996.

Zubrowski, B. *Blinkers and Buzzers*. Surrey, England: Beech Tree Books, 1991.



## Science Teacher Resources

### Software

DDA Software. Nutrient Analysis System 2. Long Valley, NJ: Author. 1993.

### Internet Resources

ACS Lexington Section Homepage

<http://www.nms.eku.edu/che/acs-ls/>

American Association for the Advancement of Science

<http://www.aaas.org/>

American Association of Physics Teachers

<http://www.aapt.org/>

American Chemical Society

<http://www.acs.org/>

American Zoo and Aquarium Association

<http://www.aza.org/>

An Historical Reference for Chestnut Introductions into North America

<http://www.state.ct.us/caes/fspp001s.htm>

Appalachian Educational Laboratory

<http://www.ael.org>

Appalachia-Science in the Public Interest

<http://www.kih.net/aspi>

Association for Supervision and Curriculum Development

<http://www.ascd.org>

Bill Nye the Science Guy

<http://nyelabs.kcts.org/>

Biosphere 2 Center

<http://www.bio2.edu>

Bluegrass Water Watch

<http://www.uky.edu/StudentOrgs/BWW/bww.html>

Centers for Disease Control and Prevention

<http://www.cdc.gov>

## Science Teacher Resources

Chemistry in Kentucky

<http://www.nms.eku.edu/che/kychelnx.htm>

Chestnuts and the Introduction of Chestnut Blight

<http://www.state.ct.us/caes/fspp0008s.htm>

Christopher Reeve Foundation

<http://www.apacure.com/crfound.html>

Christopher Reeve Homepage

<http://www.geocities.com/Hollywood/Studio/4071>

Coal Education

<http://www.coaleducation.org/>

Complete Integrated Voice Solutions: Why Type?

<http://www.whyytype.com>

Comprehensive Conceptual Curriculum for Physics

<http://phys.udallas.edu>

Council for Environmental Education: Project Wild

<http://eelink.umich.edu/wild/index.html>

DataBeam Corporation

<http://www.databeam.com/>

Developing Educational Standards - includes Links to National Standards and State Standards

<http://putwest.boces.org/standards.html>

Eisenhower National Clearinghouse for Mathematics and Science Education

<http://www.enc.org>

Eisenhower Regional Consortium for Mathematics and Science Education at AEL

(Appalachia Educational Laboratory)

<http://www.ael.org>

Environmental Education, K-12

<http://www.campbellsvil.edu/~chmf/>

ERIC Clearinghouse for Science, Mathematics, and Environmental Education

<http://www.ericse.org/>

EvaluTech features a searchable database of software, books and videotapes recommended for primary through 12<sup>th</sup> grade.

<http://www.evalutech.sreb.org>

## Science Teacher Resources

Everyday Classroom Tools (Spirit of Inquiry, Astrophysics K-6)

<http://hea-www.harvard.edu/ECT/index.html>

Facts About Multiples

<http://mypage.direct.ca/c/csamson/multiples.html>

Federal Resources for Educational Excellence, (FREE)

<http://www.ed.gov/free>

Flexfoot - Atlanta: A History of the Paralympic Games

<http://www.flexfoot.com/atlanta/history.html>

Food Chains, Webs, and Pyramids

<http://explorer.scrtec.org/explorer/explorer-db/html/783751674-447DED81.html>

Food Security and Climate Change

<http://units.ox.ac.uk/departments/ecu/cirp/fsc.htm>

Fossils of Kentucky

<http://www.uky.edu/KGS/coal/webfossil/fossilbig.htm>

Fruits and Nuts Fact Sheets

<http://www.state.ct.us/caes/FSFruit.htm>

Full Coverage: Science and Technology: Mir Space Station

[http://headlines.yahoo.com/Full\\_Coverage/Tech/Mir\\_Space\\_Station](http://headlines.yahoo.com/Full_Coverage/Tech/Mir_Space_Station)

Hands-on Science Centers Worldwide links to interactive science museums around the world

<http://www.cs.cmu.edu/~mwm/sci.html>

How Things Work

<http://www.phys.virginia.edu/Education/Teaching/HowThingsWork/>

Illinois Mathematics and Science Academy

<http://www.imsa.edu/>

International Weather Satellite Imagery Center

<http://www.fas.harvard.edu/~dbarou/sat/>

Jet Propulsion Laboratory

<http://www.jpl.nasa.gov/>

Kentucky Association of Physics Teachers

<http://www.jcc.uky.edu/kapt/>

Kentucky Book Fair - Books about New Madrid Fault Zone

<http://www.kdla.state.ky.us/events/BOOKFAIR/125.HTM>

## Science Teacher Resources

Kentucky Educational Television  
<http://www.ket.org>

Kentucky Geologic Survey: University of Kentucky  
<http://www.uky.edu/KGS/home.htm>

Kentucky Science Teachers Association  
<http://www.hardin.k12.ky.us/ksta/>

K6.Net Earthquake Page - New Madrid  
<http://www.k6.net/quake.html>

Learning Technologies Channel  
<http://quest.arc.nasa.gov/ltc>

London's National Museum of Science and Industry  
<http://www.nmsi.ac.uk/>

Materials Safety Data Sheets (MSDS) sites  
<http://www.chem.utah.edu/chemistry/classes/labs/safety/links.htm>

Math/Science Academic Village  
<http://www.wolfe.k12.ky.us/msav/msav.htm>

Mid-continent Regional Educational Laboratory (McREL)  
<http://www.mcrel.org>

MSNBC's Intellicast USA Weather  
<http://www.intellicast.com/weather/usa/>

NASA  
<http://www.nasa.gov/>

NASA's Ask Dr. Sue  
<http://dlt.gsfc.nasa.gov/Ask/>

NASA's Office of Space Science  
<http://www.hq.nasa.gov/office/oss/>

NASA Spacelink  
<http://spacelink.nasa.gov/index.html>

NASA's Planetary Photojournal  
<http://photojournal.jpl.nasa.gov/>

National Academy of Sciences  
<http://www.nas.edu>

## Science Teacher Resources

National Association of Biology Teachers

<http://www.nabt.org/index.html>

National Center for Education Statistics TIMSS Web Site

<http://nces.ed.gov/timss/>

National Oceanic and Atmospheric Administration

<http://www.noaa.gov/>

National Science Center

<http://www.nscdiscovery.org>

National Science Education Standards

<http://www.nap.edu/readingroom/books/nses/html/>

National Science Foundation

<http://www.nsf.gov>

National Science Teachers Association

<http://www.nsta.org/>

National Zoo

<http://www.si.edu/organiza/museums/zoo/>

N.E.R.D.S., Nebraska Educators Really Doing Science

<http://nerds.unl.edu/nerds.html>

New Jersey Networking Infrastructure in Education (NJ NIE) project: Ask An Expert

<http://njnie.dl.stevens-tech.edu/curriculum/aska.html>

New Madrid Earthquakes of 1811-1812 and the New Madrid Fault

<http://www.seas.upenn.edu/~hyzer/geo401/madrid/outline.html>

Northern Nut Growers Association, Inc., Links to Resources on Chestnuts

<http://www.icserv.com/nnga/links.htm>

NPR's Science Friday Website

<http://www.npr.org/programs/sfkids/>

NSTA's Scope, Sequence, & Coordination Project

[http://www.gsh.org/NSTA\\_ssandc/](http://www.gsh.org/NSTA_ssandc/)

Oak Ridge National Laboratory Review

<http://www.ornl.gov/ORNLReview/>

## Science Teacher Resources

PIViT (Project Integration and Visualization Tool) Software for concept mapping and units of instruction (or projects)

<http://www.umich.edu/~pbsgroup/PIViT.html>

Planet K-12, A search engine designed to help students find materials related to school projects and assignments.

<http://www.planetk-12.com>

Project 2061's Web Site

<http://project2061.aaas.org/>

Protecting Chestnut Trees from Blight

<http://www.state.ct.us/caes/fspp044s.htm>

Public Broadcasting System's Scientific American Frontiers.

<http://www.pbs.org/saf/>

Region 5 Service Center, Kentucky

<http://www.rsc5.kde.state.ky.us/ca.html>

River Watch Network

<http://www.riverwatch.org/>

Russell Fork Water Watch

<http://www.kymtnnet.org/wwatch/wwatch.htm>

Satellite Related companies

[http://www.nltnet.com/yel\\_sat.html](http://www.nltnet.com/yel_sat.html)

Science Learning Network courtesy of National Science Foundation

<http://www.sln.org/>

School Science and Mathematics Association

<http://www.ssma.org/>

Simulations Plus (Simulations software for science education in part through a grant from the National Science Foundation)

<http://www.simulations-plus.com/>

Space Settlement Home Page

<http://science.nas.nasa.gov/Services/Education/SpaceSettlement/>

Standards for Technology Education (International Technology Education Association)

<http://scholar.lib.vt.edu/TAA/TAA.html>

State Education and Environment Roundtable

<http://www.seer.org>

## Science Teacher Resources

Superland! Doug and Stephen's Earthquake Page

<http://www.imsa.edu/team/spi/SADVI/studentsimsa/sb/g6/p2.html>

Tapped In

<http://www.tappedin.org/>

Tates Creek High School Curriculum Resource Pages

<http://www.tatescreek.fayette.k12.ky.us/tchs/curricul.htm>

Technology Education (Agency for Instructional Technology)

<http://www.ait.net/>

Texas Instruments Calculators & Technology

<http://www.ti.com/>

The American Chestnut Foundation

<http://www.acf.org>

The Annenberg / CPB Projects Learner Online

<http://www.learner.org/>

The Exploratorium

<http://www.exploratorium.edu/>

The Foundation for Water and Energy Education

<http://www.fwee.org/>

The Franklin Institute Science Museum

<http://www.fi.edu/>

The Franklin Institute Science Museum's An Inquirer's Guide to the Universe

<http://www.fi.edu/planets/index.html>

The GLOBE Program

<http://www.globe.gov/>

The JASON Project

<http://www.jason.org/front.html>

The Journal of The American Chestnut Foundation

<http://www.cheta.net/macgregor/journal/>

The Kentucky Earthquake Page

<http://www.uky.edu/ArtsSciences/Geology/webdogs/virtky/index.html>

The Mackinaw River Project

<http://www.mackinawriver.org>

## Science Teacher Resources

The Natural Environments and Effects

[http://elses1.msfc.nasa.gov/nee/nee\\_index.html](http://elses1.msfc.nasa.gov/nee/nee_index.html)

The Nature of Water Power

<http://www.fwee.org/TG/toc.html>

The New Madrid Fault System

[http://www.ceri.memphis.edu/www/public\\_info/faultfacts.html](http://www.ceri.memphis.edu/www/public_info/faultfacts.html)

The New Teacher's Guide to the U.S. Department of Education

<http://www.ed.gov/pubs/TeachersGuide>

The Periodic Table on the WWW

<http://www.shef.ac.uk/chemistry/web-elements/index-fr.html>

The Satellite Encyclopedia

<http://www.tbs-satellite.com/tse/online/>

The Tech Museum of Innovation

<http://www.thetech.org/>

The Wonderful World of Insects

<http://www.insect-world.com/>

The World Village Project

<http://www.worldvillage.org/>

Third International Mathematics & Science Study (TIMSS)

<http://nces.ed.gov/timss/>

University of Kentucky

<http://www.uky.edu/Libraries/>

U.S. Census Bureau

<http://www.census.gov/>

U.S. Census Bureau: The Official Statistics

<http://www.census.gov/cgi-bin/popclock>

U.S. Geological Survey

<http://www.usgs.gov/>

USGS Water Resources of the United States

<http://water.usgs.gov/>

Views of the Solar System

<http://bang.lanl.gov/solarsys/>



## Science Teacher Resources

Virtual Frog Dissection Kit, developed by the Lawrence Berkeley National Laboratory  
<http://www-itg.lbl.gov/vfrog/>

Whelmers exciting demonstrations  
<http://www.mcrel.org/whelmers/>

Zelda's Zany Zoo  
<http://www.itdc.sbcss.k12.ca.us/curriculum/zanyzoo.html>

### CD-ROMs

Culture and Technology. Armonk, NY: The Learning Team, 1988.  
<http://www.learningteam.org/>

Destination Mars. Compu-Teach, Inc. 1995-98.

Exploring the Nardoo. Armonk, NY: The Learning Team, 1988.  
<http://www.learningteam.org/>

For additional resources, see the Kentucky Department of Education's Web Site at <[www.kde.state.ky.us](http://www.kde.state.ky.us)> and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12*.

# **Social Studies**



# **Required Credits**



## High School Social Studies Models

### Overview of Models:

Model I of the high school social studies program contains four courses: U.S. history (Reconstruction to present), world civilization (1500 to present), government, and economics. Students receive three credits upon completion of the sequence. The geography requirement for high school social studies is incorporated into the four courses. The geography content in the *Program of Studies* contains a total of 20 content statements. These geography statements are interspersed among the four courses and are placed in the “Correlations to the *Program of Studies*” column.

Model II of the high school social studies program contains six courses: U.S. history (Reconstruction to 1945), world civilization (1500 to 1945), U.S. and world history (1945 to present), world geography, government, and economics. Each course is designed as a 1/2-credit course, with the six courses meeting the three social studies credits required for high school graduation. This model provides a different way of studying U.S. and world history. U.S. history and world civilization are offered as separate courses until the time period of 1945. From that point on, the courses are combined into one course entitled U.S. and world history (1945 to present). The U.S. and world history course demonstrates the interconnections of American and world events during this time period.

**NOTES**

## **High School Social Studies**

### **Model I: U.S. History (Reconstruction to Present)**

#### **Course Overview:**

This one-credit U.S. history course covers the time period of 1865 to the present. Students study the social studies areas of economics, government and civics, and culture and society within the context of U.S. history, but they also study U.S. history through a geographic perspective.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How have American citizens exercised their rights and assumed their responsibilities as members of a democratic society?
- How has the American political system functioned and affected the course of American history?
- How have America's social systems developed and changed to meet the needs of American citizens?
- How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of America?
- How has America's economic system developed, changed, and responded to the needs of American citizens?
- How has geography affected the development of the United States and the lives of its people?
- How has the United States been shaped by the events, trends, conditions, issues, and decisions of the past?



**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<b>Government and Civics</b> <b>(2.14, 2.15)</b>	<p>How have American citizens exercised their rights and assumed their responsibilities as members of a democratic society?</p> <p>How has the American political system functioned and affected the course of American history?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• trace the political development in the United States including the changing roles of state and federal government and the relationships among the branches of government.</li> <li>• recognize how the U.S. Constitution, significant legislation, and landmark Supreme Court decisions have impacted American society.</li> <li>• analyze roles of political parties and citizen participation in a democratic society.</li> <li>• examine rights and responsibilities of individuals in American society and the development of democratic principles (e.g., liberty, justice, equality, individual human dignity, the rule of law).</li> </ul>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate the changing nature of state and federal governments. Compare the New Deal programs. Create report cards evaluating the effectiveness of these programs.</li> </ul> <p><i>Technology suggestions: Use integrated software programs to organize information and desktop publishing software to create report cards.</i></p> <ul style="list-style-type: none"> <li>• explore concept of “checks and balances” in historical settings. Investigate events surrounding the Watergate Scandal and use Venn diagrams to explain roles of executive, legislative, and judicial branches in response to those events.</li> <li>• analyze the influence of the Constitution, legislation, and court decisions on American society. Examine civil rights cases (e.g., Plessy v. Ferguson, Brown v. Board of Education). Create legal briefs that outline the case and summarize arguments.</li> <li>• evaluate the importance of being able to amend the Constitution. Examine voting amendments since Reconstruction to determine ways that the “blessings of liberty” have been expanded. Present findings in multimedia presentations.</li> <li>• role-play to examine the changing nature of political parties and their impact on American society. Compare Reconstruction Era party positions with party positions of today. Explain reasons for changes in party philosophies. Create campaign paraphernalia (e.g., buttons, posters, banners, pamphlets) that emphasize party positions.</li> <li>• discuss importance of citizen participation in a democratic society with community leaders. Conduct a “Meet the Press” forum on the importance of civic participation. Broadcast forums on local cable channels.</li> </ul> <p><i>Technology suggestions: Conduct informal student polls via e-mail of students’ understanding of citizen responsibilities. Display results in graphs produced by integrated software programs.</i></p> <ul style="list-style-type: none"> <li>• examine the rights and responsibilities of individuals in American society and development of democratic principles. Present information on rights of the accused and discuss from various perspectives. Write editorials defending/not defending the position that the rights of the accused need to be preserved (WP-Transactive).</li> </ul>	<p>Robyn is a tactual learner who is unable to use printed materials to obtain information. She creates a Venn diagram using real objects. She also creates prose and poetry to explain the diagram. Since she is doing multiple activities, she is given more time to complete the assignment (<i>Types of extensions: complexity, magnitude, procedures and routines, resources and materials, time, participation</i>).</p>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society</b> (2.16, 2.17)</p>	<p>How have America’s social systems developed, changed, and met the needs of American citizens?</p> <p>How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of America?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore how people and cultures of many countries, races, and religious traditions have contributed to the American experience.</li> <li>• examine ways in which cooperation, conflict, and competition occur as cultures emerge.</li> <li>• analyze origins and consequences of stereotyping, prejudice, and discrimination.</li> <li>• examine the social transformations reflected in the struggles for racial and gender equity and the extension of civil liberties.</li> <li>• recognize the roles social institutions (e.g., family, religion, education, government, economy) have played in American life.</li> <li>• analyze the origin and migration of cultures.</li> <li>• analyze the impact of movement on people and ideas.</li> <li>• analyze how regions and places can have distinct cultural characteristics.</li> </ul>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate contributions of various groups to the American experience. Examine visual and written information (e.g., newspaper, magazine articles) concerning the contributions of various ethnic groups (e.g., Asian-Americans, Arab-Americans) on American society. Write articles documenting the contributions of different ethnic groups on their communities (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Use software to create time lines illustrating contributions of ethnic groups.</i></p> <ul style="list-style-type: none"> <li>• participate in simulations that demonstrate ways events and experiences have been interpreted. Limit the ability of certain students to function within the room and make comparisons with the treatment of Japanese-Americans in World War II. Write personal essays expressing emotions as their freedoms were limited.</li> <li>• examine origins and consequences of stereotyping, prejudice, and discrimination. Study differing viewpoints of Booker T. Washington and W.E.B. DuBois to reflect differences of opinions about elements of American society. Investigate ways these differences lead to stereotyping, prejudice, and discrimination. Create written dialogues between Washington and DuBois.</li> <li>• investigate and discuss women’s suffrage movement. Create mock radio broadcasts to examine social transformations reflected in group struggles in American society.</li> <li>• investigate roles social institutions have played in American life. Examine roles religion played in development of American society. Create historical road signs to indicate impact of religion and other social institutions on American society.</li> </ul>	<p>Sarah scored higher than the average college bound senior on the ACT social studies subtest. Her need to learn and apply advanced level research techniques will be addressed by providing her the opportunity to work with a college historian to design a study on a topic of her choice. Under the guidance of her mentor, she will conduct the study and prepare a technology enhanced report of her findings to share with her class (<i>Types of extensions: purpose and appropriateness, level of support, time, procedures and routines, motivation, demonstration of knowledge</i>).</p>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Economics (2.18)</b>	<p>How has America’s economic system developed, changed, and responded to the needs of American citizens?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine the transformation of the United States from rural economy to an industrial economy to a leader in the global economy.</li> <li>• trace the economic development of the United States from laissez-faire economy to one with government intervention to a mixed economy.</li> <li>• analyze changing relationships among business, labor, and government.</li> <li>• illustrate how technology has changed and continues to change the United States economy.</li> <li>• recognize that all nations (specifically the United States) have to confront the problem of scarcity (imbalance between unlimited wants and limited resources).</li> <li>• understand how geography affects the way nations deal with issues of production, distribution, and consumption.</li> <li>• recognize that the location of activities (e.g., agriculture, production, distribution) impacts national and international relationships.</li> <li>• analyze how markets are affected by location and movement.</li> </ul>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• evaluate transformation of United States from rural, agrarian nation to urban, industrialized nation. Select entrepreneurs from late 1800s. Create multimedia presentations about individuals highlighting their accomplishments and evaluating their impact on a changing America.</li> <li>• view visual images (e.g., slides, pictures, posters) of changing relationships between business, labor, and government. Study images and literature of labor unrest and response of business and government during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries in the United States. Create reports to the president from labor-relations advisors concerning specific business, government, or labor events during this time period.</li> <li>• investigate major inventions during the 20<sup>th</sup> century. Create advertisements for products indicating ways technology has changed the United States economy.</li> </ul> <p><i><b>Technology suggestion:</b> Use multimedia software to create advertisements.</i></p> <ul style="list-style-type: none"> <li>• discuss roles of nations in deciding how to use their natural resources balancing unlimited wants with limited resources. Debate controversial nature of establishment and use of national parks from different perspectives (e.g., federal government, states, individuals).</li> <li>• investigate impact of geography on production, distribution, and consumption. Study production, distribution, and consumption of products. Create product-use labels and/or warning labels with information regarding natural resources used.</li> </ul>	<p>Thurston and Alexis demonstrate the pronounced concern with ethics and tendency toward holding strong opinions typical of intellectually gifted students. These students will research the influence of lobby groups on the economy and culture on the U. S. and will participate in a formal debate on a resolution central to this issue. The teacher may wish to stipulate that the students will not be told until the day prior to the debate whether they will represent the negative or affirmative side (<i>Types of extensions: purpose and appropriateness, complexity, time, magnitude, level of support, demonstration of knowledge</i>).</p> <p>Gerhardt, a German student who has been in the country for two months, has high intermediate language skills but still needs assistance with academic vocabulary. Provided with a teacher-provided list of essential vocabulary, he will generate a bilingual list, using an English-German dictionary. He will use the list in Internet searches to research environmental issues. Working with an English-speaking partner, he will use images on a poster to role-play a television journalist and a newly-elected member of the government in an interview format to reflect on the United States political and economic position on environmental issues (<i>Types of extensions: complexity, procedures and routines, resources and materials, participation, demonstration of knowledge</i>).</p>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<b>Geography</b> <b>(2.19)</b>	<p>How has geography affected the development of the world and the lives of its people?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that regions are areas on the surface of the Earth that are defined by certain unifying characteristics, both physical and human.</li> <li>• use geographic knowledge to analyze the location and distribution of human features in the United States.</li> <li>• understand how factors such as locations of resources and markets, transportation, and technology influence the placement, size, and function of human settlements and patterns of movement.</li> <li>• understand how changing resource needs and international trade relationships produce conflict and cooperation.</li> <li>• explore how modifications of the physical environment have impacted life in the United States.</li> <li>• examine how immigration and the movement of populations within the United States have impacted the culture of the United States.</li> <li>• understand historical changes in geographic patterns.</li> <li>• recognize how to locate and gather geographic information using primary and secondary sources.</li> <li>• analyze geographic information to evaluate past events and occurrences.</li> <li>• recognize how attempts to acquire territory and resources have resulted in national and international conflicts.</li> <li>• understand that human and physical features of the Earth’s surface can be identified by absolute and relative location.</li> <li>• analyze the distribution of human and physical characteristics on Earth’s surface.</li> <li>• understand how and why people interact with and change their environments.</li> <li>• analyze the origin and migration of cultures.</li> <li>• understand how the activities and beliefs of different cultural and social groups affect the use, form, and characteristics of landscapes.</li> <li>• analyze the impact of movement on people and ideas.</li> <li>• analyze how regions and places can have distinct cultural characteristics.</li> <li>• understand how technological advances have impacted cultural assimilation.</li> </ul>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create maps to show different regions of the U.S., both human and physical. Explore differences between human/cultural regions (e.g., the Bible Belt, the Wheat Belt, the “South”) and physical regions (e.g., Northeastern seaboard). Create bulletin boards, collages, or multimedia presentations to demonstrate differences.</li> <li>• analyze location and distribution of human features in the United States. Examine industrial development of Northeastern United States and the influences of physical and human features. Create brochures for chambers of commerce describing reasons for development.</li> <li>• discuss why changing resource needs and availability have resulted in conflict and cooperation. Investigate the North American Free Trade Agreement (NAFTA). Write editorials from different perspectives (e.g., nations, management, labor, consumers) explaining its impact (<i>WP-Transactive</i>).</li> <li>• illustrate ways modifications of physical environments have impacted life in the United States. Use changing nature of buildings from one-story to skyscrapers to illustrate how American society has changed. Write stories from the perspective of the buildings indicating ways they have witnessed this change.</li> <li>• examine visual images (e.g., slides, pictures, posters) and literature that demonstrate movement of populations into the United States and the degree of assimilation. Examine movement of Hispanics into the American Southwest. Investigate their assimilation into American society and the impact of the move on their lives. E-mail students in other areas of the country (e.g., Miami, Houston). Survey them about their assimilation into American society and ask how their lives have been impacted.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use software programs to create time lines depicting immigration shifts.</i></p> <ul style="list-style-type: none"> <li>• participate in activities to reflect ways immigration and movement of populations in the United States have resulted in assimilation and diffusion of cultures. Create images (e.g., foods such as stews or salads) to illustrate different perspectives of American culture.</li> <li>• investigate the Westward Movement. Create maps noting areas of conflict between Native Americans and white settlers and instances of cooperation between the two parties. Write children’s stories including elements of geography, conflict, and cooperation (<i>WP-Literary</i>).</li> </ul>	<p>A cluster of students with a store of knowledge and interest in geography and current events will participate in the Global Challenge Competition sponsored by the National Mathematics League or another competition in the area of geography and economics (<i>Types of extensions: order of learning, participation, procedure and routines, time</i>).</p> <p>After researching locations of resources, the cluster group working with the gifted and talented consultant will forecast changes in the community, state, and country resulting from (NAFTA)(see future activities from <i>Enhancing Thinking and Creativity with Future Studies</i> by Charles Whaley) (<i>Types of extensions: complexity, magnitude, time, environment</i>).</p> <p>Corey needs enlarged materials to read and discriminate detail in pictures. He can access regular print through low vision devices such as hand-held magnifiers for short periods of time, The teacher uses highlighters to enhance visual images. Core uses a reading stand or lap desk to help reduce postural strain while doing close work. Corey needs additional time or receives a decreased number of visual images to which he must respond (<i>Types of extensions: resources and materials, time, routines and procedures, magnitude, level of support</i>).</p>



**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Historical Perspective (2.20)</b>	<p>How has the United States been shaped by the events, trends, conditions, issues, and decisions of the past?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore the interpretive nature of the history of the United States from Reconstruction to the present.</li> <li>• examine significant eras of United States history (Reconstruction, Industrialization, Progressive Movement, World War I, Great Depression, New Deal, World War II, Cold War, 20th Century) to develop chronological understanding and recognize cause-and-effect relationships and multiple causation.</li> <li>• examine the impact of significant individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras in the history of the United States.</li> <li>• recognize the significant impact of geography and natural resources on historical perspectives and events.</li> <li>• examine the impact of advances in research, science, and technology on historical events and American society.</li> <li>• trace the changing role of the United States in the global community from isolationism to a major world power.</li> </ul>

**High School Social Studies**  
**Model I: U.S. History (Reconstruction to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore interpretive nature of the history of the United States. Use primary source documents to study Vietnam War and range of perspectives including those of “hawks and doves.” Create patriotic and/or protest songs, poems, stories, and illustrations (<i>WP Literary</i>).</li> </ul> <p><i>Technology suggestion: Create multimedia or presentations to share information.</i></p> <ul style="list-style-type: none"> <li>• examine significant eras of United States history to develop chronological understanding and cause-and-effect relationships. Study the Great Depression and create museum displays that focus on different aspects of life during the Depression. Create Web pages about the Depression.</li> <li>• examine visual images (e.g., slide, pictures, posters) and literature to examine impact of significant individuals and groups on American history. Investigate third party candidates to determine degree of influence on the American scene. Create campaign paraphernalia (e.g., buttons, posters, banners) depicting their positions.</li> <li>• study reformers from different time periods, comparing their impact on this country. Role-play the impact of people from different eras on overall development of the United States.</li> </ul> <p><i>Technology suggestion: Videotape scenes to share with other schools.</i></p> <ul style="list-style-type: none"> <li>• conduct studies on impact of geography and availability of natural resources on historical perspectives and events. Use graphic organizers to compare influences geography and availability of natural resources have on communities and major developments in United States history.</li> <li>• analyze how advancements in science and technology have resulted in changes in American society. Create illustrated time lines of the development of Interstate Highway System of the United States. Show scientific and technological advancements resulting in increased and more efficient transportation.</li> </ul> <p><i>Technology suggestion: Consult the American Memory Project on the Internet for primary source material. See &lt;<a href="http://memory.loc.gov">http://memory.loc.gov</a>&gt;</i></p> <ul style="list-style-type: none"> <li>• examine visual images (e.g., slides, pictures, posters) and literature of events that reflect changing role of the United States in global affairs. Study images of American expansion during late 19<sup>th</sup> and early 20<sup>th</sup> centuries and create presentations reflecting development of the United States as a world power.</li> </ul>	<p>Clem and Brook often do not attempt new types of tasks for fear of failure. They would rather not get credit for an assignment than request assistance. The teacher meets with them and assists with development of a step by step task completion guide. Clem and Brook develop a goal for completing the task, They review the steps involved in completing the task and identify areas where they feel they need guidance. They schedule daily conferences to check progress and troubleshoot as they complete their assignment (<i>Types of extensions: level of support, procedures and routines</i>).</p> <p>A group of gifted and talented social studies will select reformers from the past that have successfully instituted reform efforts. The students will develop a list of attributes needed to be a successful agent of change and make a presentation to their school’s site-based council (<i>Types of extensions; purpose and appropriateness, complexity, magnitude, order of learning, procedures and routines, demonstration of knowledge, participation, motivation</i>).</p>

**NOTES**

## **High School Social Studies**

### **Model I: World Civilization (1500 to Present)**

#### **Course Overview:**

This one-credit world civilization course covers the time period from 1500 to the present. Students study the social studies areas of economics, government and civics, and culture and society within the context of world history. Students will also view history through a geographic perspective.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How have the democratic principles of justice, equality, equal opportunity, responsibility, and freedom impacted the development of the world and its people?
- How and why have governments occurred in different nations and parts of the world?
- How have social systems developed and changed, to meet the needs of people of the world?
- How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of the world?
- How has economics impacted the development of different peoples, civilizations, and nations in different time periods?
- How has geography affected the development of the world and the lives of its people?
- How has the world been shaped by the events, trends, conditions, issues, and decisions of the past?

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Government and Civics</b> (2.14, 2.15)</p>	<p>How have the democratic principles of justice, equality, equal opportunity, responsibility, and freedom impacted the development of the world and its people?</p> <p>How and why have governments occurred in different nations and parts of the world?</p>	<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• compare and contrast different political systems and recognize their sources of power.</li> <li>• analyze causes and consequences of various political revolutions and rebellions.</li> <li>• recognize the political causes and consequences of nationalism, militarism, and imperialism.</li> <li>• analyze conflicts between and among different forms of government and examine the impact of these conflicts on historical events and changes.</li> <li>• examine ways in which modern governments do or do not preserve and protect the rights and liberties of their constituents.</li> <li>• explore ways in which stability and peace are pursued in an interdependent world.</li> </ul>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop matrices that compare different political systems. Include information concerning sources of power, organization and structure, decision-making responsibilities, and roles of the people.</li> <li>• analyze the causes and consequences of various political revolutions and rebellions. Examine the Russian Revolution from the perspective of the Czar and the ruling class, the Bolsheviks, the Mensheviks, and the workers. Role-play conflicts among these groups.</li> <li>• investigate causes and consequences of nationalism, militarism, and imperialism. Write letters or diary entries about the planned visit of Archduke Ferdinand to Sarajevo.</li> </ul> <p><i>Technology suggestion: Use word processing programs to write letters or diary entries.</i></p> <ul style="list-style-type: none"> <li>• discuss visual images (e.g., slides, pictures, posters) and literature of conflicts between different forms of government and the impact of these conflicts on historical events. Create images and write news articles about Adolph Hitler and the German government.</li> <li>• investigate governments' responses toward the protection of rights and liberties. Create verbal or written responses of world leaders (e.g., President of the United States, Prime Minister of Great Britain, Premier of China, President of Iraq) to this issue.</li> </ul> <p><i>Technology Suggestion: Videotape responses for other classes to view and discuss.</i></p> <ul style="list-style-type: none"> <li>• investigate ways in which stability and peace are pursued in an interdependent world. Examine specific issues being presented to the Organization of American States (e.g., the status of Cuba). Create treaties that would resolve issues. Write editorials describing the U.S. stance on economic sanctions against Cuba. Explain why the U.S. needs to continue or change its policy (<i>WP-Transactive</i>).</li> </ul>	<p>Several students in the class read and write slightly below their same-age peers. They also have difficulty completing multistep tasks and need specific organizational routines to complete assignments. The teacher provides them with mini-lessons on the use of concept comparison routines (e.g., University of Kansas Center for Research on Learning Concept Comparison Routine) that allows them to list characteristics of different political systems and to identify their sources of power (<i>Types of extensions: order of learning, procedures and routines, resources and materials, demonstration of knowledge, purpose and appropriateness</i>).</p> <p>Students who have participated in honors level social studies classes in middle school will read “On the Governance of Rulers,” Chapter VI by St. Thomas Aquinas. They will examine the differences between ancient tyrannies and modern totalitarian governments and debate on of these resolutions: (a) there are no longer and tyrannies, although there are some totalitarian governments (b) there are no longer and totalitarian governments, although there are still some tyrannies, (c) it is impossible for there to be any tyrannies in today’s world (<i>Types of extensions: purpose and appropriateness, complexity, resources and materials, level of support, time, magnitude, routines and procedures</i>).</p>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society</b> (2.16, 2.17)</p>	<p>How have social systems developed and changed, to meet the needs of people of the world?</p> <p>How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of the world?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore ways in which belief systems, knowledge, technology, and behavioral patterns define cultures and help to explain historical perspectives and events.</li> <li>• recognize ways in which social institutions (e.g., family, religion, education, government, economy) influence and respond to human needs in various societies.</li> <li>• examine ways in which cooperation, conflict, and competition occur as cultures interact.</li> <li>• analyze problems of ethnocentrism, stereotyping, and cross-cultural misunderstandings and relate these to prejudice and extreme actions such as genocide.</li> <li>• recognize the role of cross-cultural understanding in working toward world stability and peace.</li> <li>• analyze the origin and migration of cultures.</li> <li>• understand how the activities and beliefs of different cultural and social groups affect the use, form, and characteristics of landscapes.</li> <li>• analyze the impact of movement on people and ideas.</li> <li>• understand how technological advances have impacted cultural assimilation.</li> </ul>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine print and electronic primary source documents (e.g., writings, letters, visual images) of everyday life to explain historical perspectives and events. Study primary documents of the Protestant work ethic to determine the reaction toward the early stages of the Industrial Revolution. Write stories describing how life was changing during this period.</li> <li>• examine different interpretations of the same event based on cultural perspectives. Study the creation of Israel from the perspective of the Zionists, the Palestinians, and the British. Participate in mini-dramas that reflect different perspectives.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Consult the American Memory Project on the Internet. See &lt;<a href="http://memory.loc.gov">http://memory.loc.gov</a>&gt;</i></p> <ul style="list-style-type: none"> <li>• analyze the extent to which social institutions meet individual needs and promote society. Assume specific roles so each student will have individual and collective responsibilities. Study the Caste System of India to determine how individual needs (e.g., food, clothing, shelter) are satisfied and how the social structure of India is maintained. Write and perform monologues and dialogues to share information.</li> <li>• examine how questions concerning cooperation, conflict, and competition can lead to ethnocentrism, stereotyping, and cross-cultural misunderstandings. Respond to issues surrounding European colonization of Africa in the late 1800s. Include different perspectives (e.g., native Africans, Europeans) with both sides reflecting positive and negative aspects of colonization.</li> <li>• examine visual images (e.g., slides, pictures, posters) and literature of events that attempt to work toward world stability and peace. Investigate the Middle Eastern conflict and the Camp David Accord. Write essays explaining the conflict and how the Camp David Accord attempt was an attempt to resolve the conflict.</li> </ul>	<p>Roberta is working on turning switches on and off to access her equipment needs. She uses communication boards to indicate yes and no responses to questions. She is able to reach and grasp the switch at her teacher's request. She is working on following directions and using the communication board with others besides her teacher and family. During production of the mini-drama, Roberta is responsible for the stage lights, using a switching device. (<i>Types of extensions: participation, environment, demonstration of knowledge, purpose and appropriateness.</i>)</p>



**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<b>Economics</b> <b>(2.18)</b>	<p>How has economics impacted the development of different peoples, civilizations, and nations in different time periods?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore ways that different peoples, civilizations, and nations in different time periods dealt with scarcity (imbalance between unlimited wants and limited resources).</li> <li>• understand the forces that caused some economic systems to grow and prosper while others remained stagnant or declined.</li> <li>• examine how people and various civilizations made choices that helped or hindered their economic growth.</li> <li>• analyze how increased productivity resulted in the accumulation of material wealth and changed living standards for various peoples, civilizations, and nations.</li> <li>• understand how geography affects the way nations deal with issues of production, distribution, and consumption.</li> </ul>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine how people dealt with scarcity at different times. Study Germany and its land shortage. Write news articles documenting how the German people deal with the issue of land shortage.</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Create multimedia presentations to share information on Germany's land shortage.</i></p> <ul style="list-style-type: none"> <li>• view visual images (e.g., slides, pictures, posters) that illustrate how economic events or conditions have impacted different economic systems. Create images of the arms race. Investigate the impact of this issue on economic systems.</li> <li>• examine how economic choices help or hinder growth. Develop budgets (e.g., personal, state government, federal government) designed to illustrate changes in economic patterns indicative of the rise of Pacific Rim nations.</li> <li>• examine impact of economic decisions on quality of life. Study impact of the Marshall Plan on Europe. Demonstrate how this plan changed the quality of life in Europe. Create posters, bulletin boards, or collages depicting quality of life in Europe.</li> </ul>	<p>Betty and Cheryl need to develop and apply advanced level research skills. They will use the Internet and specialized references to support or refute selected generalizations they have generated related to the impact of economics on peoples, civilizations, and nations. They will prepare a multimedia display of their findings (<i>Types of extensions: resources and materials, level of support, complexity, demonstration of knowledge, environment, participation, purpose and appropriateness</i>).</p>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Geography</b> <b>(2.19)</b>	<p>How has geography affected the development of the world and the lives of its people?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine how natural resources, resource needs, different perspectives, and trade relationships produce conflict and/or cooperation.</li> <li>• explore how modifications of the physical environment impact human life.</li> <li>• describe the movement of world populations (resulting from “push and pull” factors) and its impact upon events and cultures.</li> <li>• understand that the location and distribution of human features on the Earth’s surface change over time due to human needs and events.</li> <li>• understand how factors such as locations of resources and markets, transportation, and technology influence placement, size, and function of human settlements and patterns of movement.</li> <li>• recognize how to locate and gather geographic information using primary and secondary sources.</li> <li>• analyze geographic information to evaluate past events and occurrences.</li> <li>• recognize how attempts to acquire territory and resources have resulted in national and international conflicts.</li> <li>• understand that human and physical features of the Earth’s surface can be identified by absolute and relative location.</li> <li>• analyze the distribution of human and physical characteristics on Earth’s surface.</li> <li>• understand how political decisions affect political boundaries at local, state, and national levels.</li> <li>• recognize how natural environments and resources are used and controlled by governments.</li> <li>• analyze how governments impact their human and physical geography.</li> <li>• analyze how regions and places can have distinct cultural characteristics.</li> </ul>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways geographical consequences produce conflict or cooperation among nations. Assume role of British Parliament and discuss major issues concerning development of the empire. Consider issues dealing with geographical consequences that dictate actions taken to preserve the empire. Debate consequences of those actions.</li> <li>• examine different perspectives concerning the use of resources. Study the idea of “white man’s burden” and its impact on different groups of people. Write essays explaining this idea and comparing it to other historical philosophies.</li> <li>• investigate how changes in the physical environment can affect life. Create before and after charts of the Berlin Wall to show how it influenced actions between nations.</li> </ul> <p><i><b>Technology suggestion:</b> Research information from the American Memory Project’s Web Site. See &lt;<a href="http://memory.loc.gov">http://memory.loc.gov</a>&gt;</i></p> <ul style="list-style-type: none"> <li>• investigate movement of world populations and impact of that movement. Study images and literature concerning the Irish Potato Famine and create poems that reflect the plight of the Irish.</li> </ul> <p><i><b>Technology suggestion:</b> Use word processing programs to write poems.</i></p> <ul style="list-style-type: none"> <li>• investigate the connections between geographical and human locations. Examine period of European exploration of the “New World.” Create maps and charts indicating important locations and patterns of settlement.</li> </ul>	<p>Samir has fairly good command of oral language and needs only minor assistance in writing. After studying the maps and charts, Samir works with peers to review his conclusions. He visits the writing tutor for reviews of the final draft of his essay (<i>Types of extensions: purpose and appropriateness, resources and materials, level of support, demonstration of knowledge</i>).</p>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Historical Perspective (2.20)</b>	<p>How has the world been shaped by the events, trends, conditions, issues, and decisions of the past?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore world civilizations.</li> <li>• examine significant eras (Renaissance, Reformation, Age of Exploration, Age of Revolution, Nationalism and Imperialism, Technological Age of world civilization) to develop chronological understanding and recognize cause-and-effect relationships and multiple causation.</li> <li>• examine the impact of significant individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras and civilizations in world civilization.</li> <li>• recognize the significant impact of geography and natural resources on historical perspectives and events.</li> <li>• trace the impact of advances in research, science, and technology on historical events and human societies.</li> <li>• analyze the challenges and opportunities provided by an increasingly interdependent world.</li> <li>• analyze how regions and places can have distinct cultural characteristics.</li> <li>• understand how technological advances have impacted cultural assimilation.</li> </ul>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine accounts of human events to understand ways history is interpreted. Use primary and secondary source documents concerning the Enlightenment. Create newspaper or magazine articles to illustrate changes in the quality of life during that period.</li> </ul> <p><i>Technology suggestion: Use integrated software package to create articles.</i></p> <ul style="list-style-type: none"> <li>• examine visual images and literature about significant eras to understand cause-and-effect relationships. Study the Renaissance and the Reformation. Create a spectrum of events ranging from those that showed major relationships to those that showed minor relationships.</li> </ul> <p><i>Technology suggestion: Use software to produce cause-and-effect time lines.</i></p> <ul style="list-style-type: none"> <li>• evaluate historical impact of individuals and groups. Investigate the circumstances leading to the rise of Adolph Hitler in Germany. Create political cartoons to illustrate events.</li> <li>• examine ways people lived during different time periods. Study the Aztec civilization and role-play different groups (e.g., ruling class, religious leaders, warriors, artisans, and farmers). Videotape scenes to share with other schools.</li> <li>• examine ways geographical features have influenced peoples' lifestyles. Create visual images that indicate ways people use the land.</li> <li>• examine ways advancements have resulted in changes in quality of life. Study changing nature of 20<sup>th</sup> century governments of developing nations in Asia, Africa, and the Middle East. Create articles depicting quality of life in developing nations (<i>WP-Transactive</i>).</li> <li>• analyze challenges and opportunities provided in an interdependent world. Review treaties and alliances that have led to greater interdependence. Conduct panel discussions presenting different perspectives of the treaties and alliances.</li> </ul>	<p>Loretta, Tina, Leora, and Marlene are gifted students who have a need to develop leadership skills. They will read a detailed, well-documented biography of an individual and analyze their traits and styles. They will examine how and why this person had an impact on history. They will meet with the gifted and talented specialist to assess their own styles and compare them to that of their research subject and discuss ethical issues. They will write self-analysis to submit with research notes (<i>Types of extensions: purpose and appropriateness, complexity, time, environment, demonstration of knowledge</i>).</p>

**High School Social Studies**  
**Model I: World Civilization (1500 to Present)**

**NOTES**

## **High School Social Studies**

### **Model I: Government**

#### **Course Overview:**

This 1/2-credit government course is a comprehensive study of government and provides connections to other areas of the social studies, including history, economics, geography, and culture and society.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How does government serve its citizens?
  
- How does government reflect the beliefs, culture, and needs of its citizens?
  
- How does government affect me and other consumers?
  
- How does where I live affect local, state, and national government?
  
- Why have there been different forms of government over time?



**High School Social Studies  
Model I: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Government and Civics (2.14, 2.15)</b></p>	<p>How does government serve its citizens?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand the purposes of various forms of governments.</li> <li>• recognize that the U.S. Constitution established a government of limited powers that are shared among different levels and branches.</li> <li>• analyze the importance of rights and responsibilities of citizens in a democratic society.</li> <li>• analyze various events to determine how the U.S. Constitution has allowed our government to change over time to meet the changing needs of our society.</li> <li>• understand the democratic principles of liberty, justice, individual human dignity, the rule of law, and how they relate to our society.</li> </ul>

**High School Social Studies  
Model I: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine the purposes of a democratic government as indicated by American documents. Survey peers, teachers, parents, and community members about the purposes of the Declaration of Independence, the Constitution, and other American documents. Analyze survey data and create multimedia presentations to share findings. Emphasize the importance of citizen knowledge in a democratic government.</li> </ul> <p><i><b>Technology suggestion:</b> E-mail surveys to students throughout Kentucky. Analyze responses and create graphs with integrated software packages.</i></p> <ul style="list-style-type: none"> <li>• examine different levels and branches of government and describe their roles. Create Venn diagrams to explain concepts of federalism and the division of the government into different levels.</li> <li>• recognize role of different branches of government. Study role of different branches and relate to lawmaking. Create murals that depict the lawmaking process. Reflect either effectiveness or ineffectiveness of this process.</li> <li>• investigate the importance of citizen participation in a democratic government. Examine the failure of Americans to vote and consequences of low voter turnout. Write editorials for school newspapers explaining the importance of voting (<i>WP-Transactive</i>).</li> <li>• examine visual images (e.g., slides, pictures, posters) and journal articles of changes in power of government as influenced by the “Elastic Clause,” amendment process, and constitutional interpretation. Show images of court decisions indicating how power of government has changed.</li> <li>• investigate ways the United States government has attempted to assure liberty, justice, individual human dignity, and the rule of law. Role-play different perspectives (e.g., prosecuting attorneys) and videotape scenes to share with other groups.</li> </ul>	<p>Toneka’s vocabulary, reading, writing, and math abilities are significantly below her peers. She learns concepts taught in small increments. In the survey assignment, Toneka will work with peers. She will practice reading survey questions prior to interviews. Toneka will ask questions and her peers will write responses (<i>Types of extensions: order of learning, level of support</i>).</p> <p>Mai is a Vietnamese student who has been in the country for six months and has beginning language skills. She is extremely limited in all types of vocabulary. The teacher will provide her with a list of necessary vocabulary well in advance, giving her enough time to look up the terms in a bilingual dictionary. Working with a group of English-speaking peers, she will be the group secretary, recording what the other group members dictate. Mai’s final activity will be to go home and interview family members about Vietnamese government and, on the group’s Venn diagram, highlight the similarities in one color and the nonexistent features in another color (<i>Types of extensions: motivation, participation, procedures and routines, pace, order of learning, level of support</i>).</p>

**High School Social Studies  
Model I: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society (2.16, 2.17)</b></p>	<p>How does government reflect the beliefs, culture, and needs of its citizens?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how forms of government view and interact with various cultures.</li> <li>• examine how governments and their societies work together to establish social institutions to address the needs of people.</li> <li>• analyze how cultures and belief systems are reflected in different forms of governments.</li> </ul>

**High School Social Studies  
Model I: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways government interacts with various cultures. Examine treatment of Native Americans by the federal government in the 19<sup>th</sup> century. Present findings through storytelling to be videotaped or put on cassette tapes.</li> <li>• examine ways governments and societies have worked together to address the needs of the people. Review ways people have been assisted (e.g., charitable organizations, state government programs, federal government programs). Create illustrated outlines, including important dates of program implementation.</li> <li>• compare world governments and identify ways their cultural perspectives and belief systems are reflected. Write feature articles for current events magazines describing how governments reflect the culture and belief systems of their people (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Survey government officials via Internet.</i></p>	<p>Jean is able to learn at the same pace as her same-age peers. He continues to work on social skills, following rules and cooperating with peers and adults. Provide Jean with a list of behaviors needed for her cooperative learning group. Review her point sheet prior to the assignment (<i>Types of extensions: resources and materials, procedures and routines, order of learning, motivation</i>).</p>

**High School Social Studies  
Model I: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Economics (2.18)</b>	<p>How does government affect me and other consumers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand ways in which the government of the United States is involved in its economy.</li> <li>• recognize various economic systems and institutions in the United States.</li> <li>• understand how the role of the United States government in its economic system has changed over time to meet the needs of the society.</li> <li>• analyze how the United States government deals with questions of production, distribution, and consumption of goods and services.</li> <li>• understand how geography affects the way nations deal with issues of production, distribution, and consumption.</li> <li>• recognize that all nations have to confront the problem of scarcity (imbalance between unlimited wants and limited resources).</li> </ul>

**High School Social Studies  
Model I: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write position papers on the ideal role of a democratic government. Address issues of taxation, government-provided goods and services, education, and welfare. Create multimedia presentations for city councils or county judge executives.</li> <li>• simulate ways services are provided. Create illustrated time lines to show how the role of government in our economy has changed over time. Include important economic laws, treaties, and agreements.</li> <li>• analyze ways changing conditions and needs of society lead to more governmental involvement. Examine local communities and make lists of environmental concerns. Create prioritized action plans for governments to implement, including items for citizens to address.</li> <li>• compare in graphic organizers market economies (e.g., United States) with command economies (e.g., Cuba). Include differences in how each economy deals with issues of production, distribution, and consumption.</li> </ul>	<p>Vinh is a Vietnamese student who has been in the country for two months and has rudimentary language with extremely limited vocabulary. The teacher will need to prepare a list of vocabulary terms that he will look for in browsing the newspapers and magazines, also provided by the teacher. After clipping the items that contain terms from his list, he will use a bilingual dictionary to look up the terms and write a brief journal entry about a government agency he has had experience with (e.g., Immigration and Naturalization Service (INS), welfare, unemployment, social security). He will need the assistance of the English as a Second Language (ESL) support staff in writing his entry (<i>Types of extensions: motivation, participation, level of support, resources and materials</i>).</p>

**High School Social Studies  
Model I: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Geography (2.19)</b></p>	<p>How does where I live affect local, state, and national government?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• understand how the United States government regulates natural and human resources.</li><li>• recognize various regions in the United States and understand how their local and state governments may operate differently because of regional needs and differences.</li><li>• analyze how technology has helped or hindered the operation of government.</li></ul>

**High School Social Studies  
Model I: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine effectiveness of government in its ability to regulate different resources. Write essays to “What if?” statements to examine laws and regulations relating to natural and human resources (e.g., What if the United States did not regulate certain activities such as oil production and coal mining?).</li> <li>• write letters to community members asking how their local and state governments operate. Send letters to governmental officials asking them to respond to questions that deal with regional differences. Create multimedia presentations for local civic organizations.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> E-mail local and state officials to gather information.</i></p> <ul style="list-style-type: none"> <li>• investigate impact of computers on the dissemination of ideas, information, and services necessary for the smooth functioning of the government. In articles, discuss the negative/positive impact of computers on American society (<i>WP-Transactive</i>).</li> </ul>	<p>Lan Hsin is a Taiwanese student who has been in this country for nine months, has beginning language abilities with very limited academic vocabulary. She will need a teacher-provided list of essential vocabulary required to perform the task. Using a bilingual dictionary, she will look up the terms, as well as any ideas that occur to her regarding the cause-and-effect situation. She will use the terms generating a simplistic poster showing the cause-and-effects listed in two separate columns, using only key words and sentence fragments (<i>Types of extensions: resources and materials, order of learning, level of support, procedures and routines</i>).</p>



**High School Social Studies  
Model I: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Historical Perspective (2.20)</b></p>	<p>Why have there been different forms of government over time?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• recognize that different forms of governments have developed over time.</li> <li>• analyze different forms of government to determine their effectiveness.</li> <li>• understand the foundations of the United States democratic form of government</li> <li>• recognize how the United States government has changed over time to meet the needs of the society.</li> </ul>

**High School Social Studies  
Model I: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• investigate changes in society that necessitate different forms of government. Create illustrated flow charts documenting ways different forms of government have developed over time.</li><li>• compare in graphic organizers advantages and disadvantages of limited government with advantages and disadvantages of unlimited government. Construct t-charts to analyze effectiveness of different forms of government.</li><li>• trace development of the United States government into a democratic system. Create presentations to demonstrate different ways philosophies and ideals became incorporated into the government.</li><li>• create visual images of changing nature of government in response to meeting needs of people. Include images of changing role and growth of government.</li></ul>	<p>Susan was in all general education classes prior to sustaining a traumatic head injury. She now needs multiple exposures to concepts. To recognize change over time, Susan uses cumulative time lines documenting changes in American government and societal needs that caused changes. The teacher uses master time lines, updating them each time there are changes in government. Susan records each change and reason for the change, using her personal time lines (<i>Type of extension: procedures and routines</i>).</p>

**High School Social Studies**  
**Model I: Government**  
**NOTES**

# High School Social Studies

## Model I: Economics

### Course Overview:

This 1/2-credit economics course is a comprehensive study of economics with connections to the other areas of social studies, including history, geography, government, civics, culture and society.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### Guiding Questions:

- What role does the government play in a nation's economy?
- As a United States citizen, what role do I play in the economy?
- As a social institution, how does the economy meet the needs of its citizens?
- How do culture and belief systems affect consumers' decisions?
- Why is it important for me to study and understand economics?
- How does geography affect or impact a national and/or global economy?
- How and why has the economy of the United States changed?

**High School Social Studies  
Model I: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Government and Civics (2.14, 2.15)</b></p>	<p>What role does the government play in a nation's economy?</p> <p>As a United States citizen, what role do I play in the economy?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• understand that voters influence economic policy and decision making through representatives they elect.</li><li>• recognize that the United States has a market economy which is determined by the forces of supply and demand.</li><li>• explore others economic systems (e.g., command, traditional) to determine the economic forces that control them.</li><li>• analyze how decisions on the distribution of resources can be made by local, state, and/or federal levels of government.</li></ul>

**High School Social Studies  
Model I: Economics**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• review information and events that contribute to election issues and results to determine if there is a correlation. Create illustrated time lines that analyze the influence of economics on elections in the United States.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use software to create time lines.</i></p> <ul style="list-style-type: none"> <li>• select products at grocery stores, preferably perishable items, and chart changing prices throughout the year. Relate changes to concept of supply and demand. Create grocery ads for newspapers demonstrating changing prices over time.</li> <li>• investigate factors that influence consumer decisions. Create diagrams that resemble the spokes of a wheel, with consumers in the middle. Indicate factors (e.g., opportunity costs, prices, incentives) consumers consider when making choices on each spoke.</li> <li>• examine visual images (e.g., slides, pictures, posters) and news articles that reflect different economic systems. Compare command economies (e.g., Cuba) with market economies (e.g., U.S.). Chart differences and discuss findings. Write stories describing life in both systems.</li> <li>• analyze ways decisions on distribution of resources are made by different levels of government. Decide the level of government most effective in dealing with distribution of resources and debate findings. Create multimedia presentations to share information.</li> </ul>	<p>Freda works in a grocery store with a job coach. She reads prices and matches pictures to food items. She selects five perishable items and checks the prices daily for two weeks. She uses charts to collect data. The charts are developed for her with pictures of the five items dates for ten days, and boxes large enough for her to record prices. Freda presents information to small groups, who incorporate the information in discussions of supply and demand (<i>Types of extensions: complexity, environment, purpose and appropriateness, motivation, demonstration of knowledge, resources and materials, participation, procedures and routines</i>).</p>

**High School Social Studies  
Model I: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society (2.16, 2.17)</b></p>	<p>As a social institution, how does the economy meet the needs of its citizens?</p> <p>How do culture and belief systems affect consumers' decisions?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how the economic incentives of private ownership of property, business opportunities, and profit motives have attracted people from many nations to the United States.</li> <li>• recognize that the economy of the United States is a social institution that attempts to meet the needs of the citizenry.</li> <li>• analyze the role culture plays in economic issues of production, distribution, and consumption.</li> </ul>

**High School Social Studies  
Model I: Economics**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate how economic incentives have attracted people from many nations to the United States. Interview business proprietors representing various cultures to ascertain reasons for moving to the United States. Write feature articles on these people that illustrate the incentives people had to come to America (<i>WP-Transactive</i>).</li> <li>• investigate impact of Sixteenth Amendment. Create charts showing goods and services provided by the U.S. government to its citizens before and after the Sixteenth Amendment (income tax) was ratified. Debate whether income taxes have been positive or negative.</li> <li>• investigate how culture affects consumer choices and decisions. Create advertisements directed toward certain cultures.</li> <li>• create cartoons reflecting ways different cultures respond to economic issues of production, distribution, and consumption.</li> </ul> <p><i>Technology suggestion: Use integrated software packages to create cartoons.</i></p>	<p>Fernanda, Anel, Hank, and Fatina are highly creative students with limited English proficiency. Using their first language, they interview their parents, family friends, or others in their ethnic communities on reasons for coming to the U.S. They present their findings to the class in English (<i>Types of extensions: motivation, purpose and appropriateness</i>).</p> <p>Charlie learns at the same rate as his same-age peers accept in the area of language. The teacher gives multiple models of choices, prices, and needs connected to the language prior to the assignment (<i>Types of extensions: order of learning, procedures and routines</i>).</p>



**High School Social Studies  
Model I: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Economics (2.18)</b>	Why is it important for me to study and understand economics?	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that the basic economic problem confronting individuals, societies, and nations is scarcity or the imbalance between unlimited wants and limited resources available to satisfy those wants.</li> <li>• recognize that, as a result of scarcity, individuals, societies, and nations must make choices/decisions which result in consequences.</li> <li>• analyze economic concepts and understand their nature and relevance to different economic situations.</li> <li>• analyze how individuals and nations deal with the issues of production, distribution, and consumption.</li> <li>• recognize that markets (e.g., national, international, global) and economic institutions exist to enable buyers and sellers to exchange goods and services.</li> <li>• recognize that economic systems are created by individuals and societies to achieve broad goals (e.g., security, growth, freedom, efficiency, equity).</li> </ul>

**High School Social Studies  
Model I: Economics**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explain why scarcity is the basic economic problem. Study problems created when resources (e.g., oil, timber, water) are not available and responses of nations. In feature articles, discuss the impact that the lack of resources has had on communities in Kentucky (<i>WP-Transactive</i>).</li> <li>• identify opportunity costs when decisions on major purchases are made. Create contracts for major purchases including information on opportunity costs.</li> <li>• investigate basic economic concepts. Illustrate economic concepts through fables (<i>WP-Literary</i>).</li> <li>• examine the human and natural resources of developing countries. Create economic plans that address issues of production, distribution, and consumption.</li> <li>• examine different institutions in competition for services. Compare car loan rates at different banks and credit unions. Write news articles to help others make decisions about the best bank to use for their next car purchase (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use desktop publishing software to create bank service brochures.</i></p> <ul style="list-style-type: none"> <li>• investigate individual needs (e.g., housing) and societal goals (e.g., housing for all members). Construct flow charts that demonstrate ways economic systems are created by individuals and societies to achieve broad goals.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use integrated software to create flow charts.</i></p>	<p>Tim and Jesse, both highly creative students, need opportunities to develop entrepreneurial skills. They will research the status of aquaculture experiments in Kenton County as an alternative to raising tobacco. They will consult with the state aquacultural researchers as well as local business persons who can provide guidance in setting up business and marketing plans (<i>Types of extensions: purpose and appropriateness, complexity, level of support, demonstration of knowledge, participation, resources and material s, motivation, environment</i>).</p>

**High School Social Studies  
Model I: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Geography (2.19)</b></p>	<p>How does geography affect or impact a national and/or global economy?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that the problem of scarcity (unlimited wants and limited resources) must be addressed by all nations.</li> <li>• recognize that nations deal with scarcity by making choices that have consequences.</li> <li>• analyze how nations’ wealth and consequent trade potential are tied to their resources.</li> <li>• explore how international trade and multinational corporations have led to the emergence of a global economy.</li> <li>• understand how geography affects the way nations deal with issues of production, distribution, and consumption.</li> <li>• recognize that the location of activities (e.g., agriculture, production, distribution) impact national and international relationships.</li> <li>• recognize that all nations have to confront the problem of scarcity (imbalance between unlimited wants and limited resources).</li> </ul>

**High School Social Studies  
Model I: Economics**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine problems of scarcity and responses by different nations. Select a highly industrialized country, a moderately industrialized country, and a third-world country. Compare how the different countries have dealt with scarcity. Evaluate the choices each country has made relative to the issue of scarcity and debate their success. Present findings in oral presentations.</li><li>• evaluate economic advantages of nations. Simulate nations' wealth by using tokens or money to make purchases, demonstrating differences in economic power. Develop ways to equalize purchasing positions.</li><li>• explore international trade to examine the creation of a global economy. Hold mock international conferences, role-playing different nations' positions on whether international trade has been good or bad.</li></ul>	<p>Rick acquires information best when provided with memory and organizational devices to support his learning, especially when the tasks require integrating information. To help him organize information for his oral presentation, his teacher provides Rick with a pre-developed matrix that outlines issues and countries to research (<i>Types of extensions: complexity, magnitude, procedures and routines, level of support, resources and materials</i>).</p>

**High School Social Studies  
Model I: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Historical Perspective (2.20)</b></p>	<p>How and why has the economy of the United States changed?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• understand how the United States economy has changed from a rural economy to an industrial economy to a leader in the global economy.</li><li>• recognize that the U.S. Constitution contains few economic guidelines; therefore, economic policies are determined by elected officials.</li><li>• analyze how the number and complexity of economic issues have increased as the United States has entered the global economy.</li></ul>

**High School Social Studies  
Model I: Economics**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways the U.S. economy has changed over time. Select economic issues from different time periods and assume roles of government officials and consumers. Role-play how different people were affected.</li> <li>• engage in academic scavenger hunts that uncover economic issues discussed in documents of United States history (e.g., governmental response to taxation will be analyzed through existing documents—the Constitution, federal statutes, Supreme Court cases). Create collages with news headlines indicating major economic developments.</li> <li>• identify important economic issues and events in U.S. history. Create multimedia presentations showing how economic issues have changed from internal issues (U.S. only) to those of a global nature.</li> </ul>	<p>Charlie learns at the same rate as his same-age peers except in the area of language. The teacher gives multiple examples of economic issues such as choices, prices, and needs prior to the assignment (<i>Types of extensions: order of learning, procedures and routines</i>).</p> <p>Luke, Sarah, Tillie, Rina, and Agnes grasp concepts quickly and need opportunities to practice exerting effort in learning. They will research the impact of deregulation on the U.S. and world economy, present their findings, and predict possible effects of further deregulation (<i>Types of extensions: purpose and appropriateness, complexity, participation, motivation, resources and materials, demonstration of knowledge, level of support</i>).</p>

**High School Social Studies  
Model I: Economics**

**NOTES**

## **High School Social Studies**

### **Model II: U. S. History (Reconstruction to 1945)**

#### **Course Overview:**

In this 1/2-credit U.S. history course, students examine the time period from 1865 to 1945. They study the social studies areas of geography, economics, government and civics, and culture and society within the context of U.S. history.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How have American citizens exercised their rights and assumed their responsibilities as members of a democratic society?
- How has the American political system functioned and affected the course of American history?
- How have America's social systems developed, changed, and met the needs of American citizens?
- How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of America?
- How has America's economic system developed, changed, and responded to the needs of American citizens?
- How has geography affected the development of the United States and the lives of its people?
- How has the United States been shaped by the events, trends, conditions, issues, and decisions of the past?



**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Government and Civics (2.14, 2.15)</b>	<p>How have American citizens exercised their rights and assumed their responsibilities as members of a democratic society?</p> <p>How has the American political system functioned and affected the course of American history?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• trace the political development in the United States including the changing roles of state and federal government and the relationships among the branches of government.</li> <li>• recognize how the U.S. Constitution, significant legislation, and landmark Supreme Court decisions have impacted American society.</li> <li>• analyze roles of political parties and citizen participation in a democratic society.</li> <li>• examine rights and responsibilities of individuals in American society and the development of democratic principles (e.g., liberty, justice, equality, individual human dignity, the rule of law).</li> </ul>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create electronic report cards that pertain to the changing nature of state and federal governments. Present information on the New Deal programs. Complete report cards dealing with effectiveness of programs.</li> </ul> <p><i>Technology suggestions: Use integrated software programs to organize information and desktop publishing software to create report cards.</i></p> <ul style="list-style-type: none"> <li>• create Venn diagrams that explain the concept of “checks and balances” in historical settings. Study events surrounding impeachment of President Andrew Johnson and use Venn diagrams to explain role of executive, legislative, and judicial branches in response to events.</li> <li>• analyze the influence of the Constitution, legislation, and court decisions on American society. Review civil rights cases (e.g., Plessy v. Ferguson). Develop legal briefs that outline the case and present arguments.</li> <li>• recognize importance of being able to amend the Constitution. Investigate voting amendments from Reconstruction to 1945 to determine ways “blessings of liberty” have been expanded. Present findings in a multimedia presentation.</li> <li>• role-play to examine changing nature of political parties and impact on American society. Compare party positions of the Reconstruction era compared with party positions of the mid-20<sup>th</sup> century. Explain reasons for changes in party philosophies.</li> <li>• discuss the importance of citizen participation in democratic societies with chairpersons of local Democratic and Republican Parties. Conduct “Meet the Press” forum on the importance of civic participation.</li> </ul> <p><i>Technology suggestion: Conduct informal student polls via e-mail of students’ understanding of citizen responsibilities. Display results in graphs produced by spreadsheet software.</i></p> <ul style="list-style-type: none"> <li>• examine rights and responsibilities of individuals in American society and development of democratic principles. Present information on the rights of the accused and debate from different perspectives. Write editorials defending/not defending the position that the rights of the accused need to be preserved (WP-Transactive).</li> </ul>	<p>Parisa is an Iranian student who has been here for a year and has low intermediate language skills. She will use a bilingual dictionary to research the technical government vocabulary from a teacher-provided list. Once she has her bilingual list generated, she will research the current political situation in Iran and computer-generate the components of the structure of government, using them to create a report card that will contrast with one created by an English-speaking student for the U.S. She will then work with this student and they will orally present their facts to the class (<i>Types of extensions: purpose and appropriateness, demonstration of knowledge, level of support, participation, motivation</i>).</p> <p>Antonio and Marcella have worked as volunteers in local elections and have a high interest in politics. They will work with the gifted and talented consultant and research federal and state elections which have had high voter turn out and others that have officials elected by only a few votes. They will then compare the attributes of both and write a newspaper article that will encourage citizens to vote (<i>Types of extensions: purpose and appropriateness of task, complexity of task, size of task, pace, procedures and routines, resources and materials, participation, motivation</i>).</p>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Culture and Society</b> (2.16, 2.17)</p>	<p>How have America’s social systems developed, changed, and met the needs of American citizens?</p> <p>How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of America?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore how people and cultures of many countries, races, and religious traditions have contributed to the American experience.</li> <li>• examine ways in which cooperation, conflict, and competition occur as cultures emerge.</li> <li>• analyze origins and consequences of stereotyping, prejudice, and discrimination.</li> <li>• examine the social transformations reflected in the struggles for racial and gender equity and the extension of civil liberties.</li> <li>• recognize the roles social institutions (e.g., family, religion, education, government, economy) have played in American life.</li> </ul>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop visual illustrations (computer-generated or handmade) that recognize contributions of various groups to the American experience. Examine visual and written information concerning the impact of early immigrants (pre-1945) on society. Write articles indicating degree of impact from “Very Influential” to “Somewhat Influential” (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use software to create degree of impact time lines.</i></p> <ul style="list-style-type: none"> <li>• participate in simulations that indicate ways different events and experiences may be interpreted differently. Limit ability of certain people to ‘function’ within the room and compare to the treatment of Japanese-Americans in World War II.</li> <li>• examine origins and consequences of stereotyping, prejudice, and discrimination (e.g., differing viewpoints of Booker T. Washington and W.E.B. DuBois). Reflect differences of opinions between many different elements of American society. Study ways these differences lead to stereotyping, prejudice, and discrimination. Create written dialogues between Washington and DuBois.</li> <li>• create “mock” radio broadcasts to examine social transformations (pre-1945) reflective in struggles of certain groups in American society. Study the struggle of women to obtain the right to vote. Write personal reflective pieces on how women’s right to vote has changed their lives (<i>WP-Personal</i>).</li> <li>• recognize role that social institutions have played in American life. Examine role religion has played in development of American society. Create historical road signs to indicate the impact of religion and other social institutions on American society.</li> </ul>	<p>Ali is a Saudi Arabian student who has been in the country for two years with high intermediate language skills. Because he needs help with academic language and vocabulary, the teacher will provide a list of essential vocabulary for whatever type of activity she wants Ali to do. He could read documents in his native language in order to be the “resident expert” on the culture and answer any questions his English-speaking counterparts might pose regarding the articles (<i>Types of extensions: purpose and appropriateness, complexity, procedures and routines, resources and materials, level of support</i>).</p> <p>Amanda, Jennifer, and Tyrone have been recognized for their leadership abilities. Justin and Phillip have a high interest in historical events and process information quickly. They have been placed in a cluster group to work with the gifted and talented consultant in future studies. After studying social institutions in the past, they will extend this activity to recognize the role these social institutions will play in the future of American life (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, pace, environment, procedures and routines, resources and materials, demonstration of knowledge, participation, motivation</i>).</p>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Economics</b> <b>(2.18)</b></p>	<p>How has America’s economic system developed, changed, and responded to the needs of American citizens?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine the transformation of the United States from rural economy to an industrial economy to a leader in the global economy.</li> <li>• trace the economic development of the United States from laissez-faire economy to one with government intervention to a mixed economy.</li> <li>• analyze changing relationships among business, labor, and government.</li> <li>• illustrate how technology has changed and continues to change the United States economy.</li> </ul>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• evaluate transformation of the United States from rural, agrarian nation to urban, industrialized nation. Select an entrepreneur from the late 1800s. Create posters highlighting his/her accomplishments. Evaluate this person’s impact on a changing America.</li> <li>• view visual images (e.g., slides, pictures, posters) and written material of the changing relationship between business, labor, and government. Study labor unrest and the response of business and government during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries in the United States. Create reports to the President from labor-relations advisor concerning a specific business, government, or labor event during this time period.</li> <li>• create advertisements for products indicating ways technology changed the United States economy (pre-1945). Research major inventions during the 19<sup>th</sup> century. Prepare info-commercials to promote and sell the inventions.</li> </ul> <p><i>Technology suggestion: Use multimedia software to create advertisements.</i></p>	<p>Four students in the class, with high leadership ability, have indicated that they are interested in researching the economic impact of strikes on their community. They will work with the gifted and talented consultant and the classroom teacher to design activities such as interviews with various community members. They will create a visual presentation to be made to local government officials(<i>Types of extensions: purpose and appropriateness, complexity, magnitude, environment, resources and materials, demonstration of knowledge, participation, motivation</i>).</p>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Geography</b> <b>(2.19)</b></p>	<p>How has geography affected the development of the United States and the lives of its people?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that regions are areas on the surface of the Earth that are defined by certain unifying characteristics, both physical and human.</li> <li>• use geographic knowledge to analyze the location and distribution of human features in the United States.</li> <li>• understand how factors such as locations of resources and markets, transportation, and technology influence the placement, size, and function of human settlements and patterns of movement.</li> <li>• understand how changing resource needs and international trade relationships produce conflict and cooperation.</li> <li>• explore how modifications of the physical environment have impacted life in the United States.</li> <li>• examine how immigration and the movement of populations within the United States have impacted the culture of the United States.</li> </ul>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create maps to show different regions of the U.S., both human and physical. Explore differences between human/cultural regions (e.g., the Bible Belt, the Wheat Belt, the “South”) and physical regions (e.g., Northeastern seaboard). Create bulletin boards, collages, or multimedia presentations to demonstrate differences.</li> <li>• analyze location and distribution of human features in the United States. Study the industrial development of the Northeastern United States and connect physical and human features. Present findings in form of computer analysis of the area indicating reasons for the development.</li> <li>• discuss location of resources and markets, transportation, and technology resulting in human settlement and patterns of movement. Determine how human settlements and movement of people and ideas were affected by the transcontinental railroad. Create multimedia presentations including maps.</li> <li>• create graphs showing impact of the Embargo of 1807 in regard to U.S. trade with European countries. Explain reasons for the Embargo, tensions it created, and resulting trade relationships.</li> <li>• examine modifications of the physical environment that impacted life in the United States (e.g., the changing nature of buildings from one-story to skyscrapers). Illustrate ways American society changed. Create writings from the perspective of the buildings explaining this change.</li> <li>• review visual images (e.g., slides, pictures, posters) and written material that demonstrate movement of certain populations into the United States and degree of assimilation. Research the beginnings of the Hispanic movement into the American Southwest (pre-1945). Create presentations on the contributions and degree of assimilation into American society at that time.</li> <li>• participate in activities to reflect ways immigration and movement of populations in the United States have resulted in assimilation and diffusion over time. Create charts to show the “Melting Pot” concept of American society (pre-1945).</li> </ul> <p><i>Technology suggestion: Use software to create time lines that depict immigration shifts over time.</i></p>	<p>After researching location of resources, the cluster group working with the gifted and talented consultant will switch their perspective to the future and forecast changes in the community, state, and country (future activities from <i>Enhancing Thinking and Creativity with Future Studies</i> by Charles Whaley). The students will create a video newscast to share with the class (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, environment, resources and materials, demonstration of knowledge, participation, motivation</i>).</p>



**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Historical Perspective (2.20)</b></p>	<p>How has the United States been shaped by the events, trends, conditions, issues, and decisions of the past?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore the interpretive nature of the history of the United States from Reconstruction to the present. (Note: In this particular model, the time period addressed is Reconstruction to 1945).</li> <li>• examine significant eras of United States history (Reconstruction, Industrialization, Progressive Movement, World War I, Great Depression, New Deal, World War II) to develop chronological understanding and recognize cause-and-effect relationships and multiple causation.</li> <li>• examine the impact of significant individuals and groups. Analyze the social, political, and economic characteristics of various eras in the history of the United States.</li> <li>• recognize the significance of geography and natural resources in historical perspectives and events.</li> <li>• examine the impact of advances in research, science, and technology on historical events and American society.</li> <li>• trace the changing role of the United States in the global community from isolationism to a major world power.</li> </ul> <p style="text-align: right;"><i>(Continued on page 66)</i></p>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore the interpretive nature of the history of the United States. Use primary and secondary source documents to study Westward Expansion. Investigate wide range of perspectives including the settlers, Native Americans, and Asians. Produce poems, stories, and/or songs that reflect the different perspectives of Westward Expansion (<i>WP Transactive</i>).</li> </ul> <p><i>Technology suggestion: Create multimedia presentations to share information.</i></p> <ul style="list-style-type: none"> <li>• review visual images (e.g., slide, pictures, posters) and written information to examine the impact of significant individuals and groups on American history. Investigate U.S. Presidents and determine their degree of influence on American society. Create top-ten lists of presidents.</li> <li>• role-play significant individuals or groups from various eras of U.S. history to determine social, political, and economic events. Create top ten lists of important people and events that significantly changed America.</li> <li>• role-play situations that deal with impact of people from different eras on overall development of the United States. Study reformers from different time periods comparing their impact on this country.</li> <li>• conduct local studies concerning the impact of geography and natural resources on historical perspectives and events. Investigate how geography and natural resources have impacted their community.</li> </ul> <p><i>Technology suggestion: Consult the American Memory project on the Internet for primary source material. See &lt;<a href="http://memory.loc.gov">http://memory.loc.gov</a>&gt;</i></p> <ul style="list-style-type: none"> <li>• analyze how scientific and technological advancements have changed American society. Create illustrated time lines (pre-1945) of advancements in medicine, transportation, and living conditions.</li> </ul>	<p>The cluster group will select 10 leaders from the past that have been very successful and examine their leadership styles. Students will then forecast the attributes needed to be a successful leader in the future based on the impact modern technology has had on elections. They will then select one of the leaders they researched and create a campaign speech dealing with future issues (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, order of learning, procedures and routines, demonstration of knowledge, participation, motivation</i>).</p>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

Academic Expectations	Guiding Questions	Correlations to the Program of Studies
<p><b>Historical Perspective (2.20)</b></p>	<p><i>(Continued from page 64)</i></p> <p>How has the United States been shaped by the events, trends, conditions, issues, and decisions of the past?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore the interpretive nature of the history of the United States from Reconstruction to the present. (Note: In this particular model, the time period addressed is Reconstruction to 1945).</li> <li>• examine significant eras of United States history (Reconstruction, Industrialization, Progressive Movement, World War I, Great Depression, New Deal, World War II) to develop chronological understanding and recognize cause-and-effect relationships and multiple causation.</li> <li>• examine the impact of significant individuals and groups. Analyze the social, political, and economic characteristics of various eras in the history of the United States.</li> <li>• recognize the significance of geography and natural resources in historical perspectives and events.</li> <li>• examine the impact of advances in research, science, and technology on historical events and American society.</li> <li>• trace the changing role of the United States in the global community from isolationism to a major world power.</li> </ul>

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• review visual images (e.g., slides, pictures, posters) and written material of events that reflect the changing role of the United States in global affairs. Research American expansion during the late 19th and early 20th centuries and create presentations of the emergence (pre-1945) of the United States as a world power.</li></ul>	

**High School Social Studies**  
**Model II: U. S. History (Reconstruction to 1945)**

**NOTES**

## **High School Social Studies**

### **Model II: World Civilization (1500 - 1945)**

#### **Course Overview:**

This 1/2-credit world civilization course covers the time period of 1500 to 1945. Students will study the social studies areas of geography, economics, government and civics, and culture and society within the context of world history.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How have the democratic principles of justice, equality, responsibility, and freedom impacted the development of the world and its people?
- How and why have governments occurred in different nations and parts of the world?
- In what ways have social systems developed, changed, and met the needs of people of the world?
- How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of the world?
- How has economics impacted the development of different peoples, civilizations, and nations in different time periods?
- How has geography affected the development of the world and the lives of its people?
- How has the world been shaped by the events, trends, conditions, issues, and decisions of the past?

**High School Social Studies  
Model II: World Civilization (1500 - 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Government and Civics (2.14, 2.15)</b></p>	<p>How have the democratic principles of justice, equality, responsibility, and freedom impacted the development of the world and its people?</p> <p>How and why have governments occurred in different nations and parts of the world?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare and contrast different political systems and recognize their sources of power.</li> <li>• analyze causes and consequences of various political revolutions and rebellions.</li> <li>• recognize the political causes and consequences of nationalism, militarism, and imperialism.</li> <li>• analyze conflicts between and among different forms of government and examine the impact of these conflicts on historical events and changes.</li> <li>• examine ways in which modern governments do or do not preserve and protect the rights and liberties of their constituents.</li> <li>• explore ways in which stability and peace are pursued in an interdependent world.</li> </ul>

**High School Social Studies**  
**Model II: World Civilization (1500 - 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• develop matrices (electronic or handmade) that compare political systems. Include information concerning sources of power, organization and structure, decision-making responsibilities, and the role of the people.</li> <li>• participate in role-playing assignments that analyze causes and consequences of various political revolutions and rebellions. Study the Russian Revolution from the perspective of the Czar and the ruling class, the Bolsheviks, the Mensheviks, and the workers.</li> <li>• investigate causes and consequences of nationalism, militarism, and imperialism. Write letters or diary entries about the planned visit of Archduke Ferdinand to Sarajevo (<i>WP Transactive</i>).</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use word processing programs to write letters or diary entries.</i></p> <ul style="list-style-type: none"> <li>• create visual images (e.g., slides, pictures, posters) of conflicts between different forms of government and the impact of these conflicts on historical events.</li> <li>• present responses of certain governments toward the protection of rights and liberties. Conduct panel discussions to examine governments' responses to the issue of rights and liberties. Represent a leader of each government, such as the President of the United States, Prime Minister of Great Britain, Premier of China, and President of Iraq.</li> </ul> <p style="text-align: center;"><i><b>Technology Suggestion:</b> Videotape responses for other classes to view and discuss.</i></p> <ul style="list-style-type: none"> <li>• present responses to certain questions concerning ways in which stability and peace are pursued in an interdependent world. Deal with specific issues being presented to the Organization of American States concerning the status of Cuba. Write editorials that discuss the economic sanctions of the U.S. on Cuba. Determine if economic sanctions should be continued or reduced (<i>WP-Transactive</i>).</li> </ul>	<p>Moyo came from Zimbabwe a year ago. During that time she has acquired some basic English speaking and writing skills. She has difficulty reading and writing beyond using present and future tense in simple sentence form. Over two weeks, Moyo locate in the international news section of the daily newspaper all the articles about events happening outside the United States. Using a bilingual dictionary, she will then select those articles that pertain to political issues, and highlight words that reflect justice/injustice, equality/inequality, freedom/tyranny, etc. The teacher will provide her with a list of vocabulary necessary to help her identify concepts for this assignment. Moyo's collage of articles will then serve as a basis for a class discussion about implications of the current events and how these can define various political systems and their characteristics (<i>Types of extensions: participation, resources and materials, complexity</i>).</p>



**High School Social Studies  
Model II: World Civilization (1500 - 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society</b> (2.16, 2.17)</p>	<p>How have social systems developed, changed, and met the needs of people of the world?</p> <p>How have the people from many countries, races, ethnic groups, and religious traditions contributed to the growth, development, and culture of the world?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore ways in which belief systems, knowledge, technology, and behavioral patterns define cultures and help to explain historical perspectives and events.</li> <li>• recognize ways in which social institutions (e.g., family, religion, education, government, economy) influence and respond to human needs in various societies.</li> <li>• examine ways in which cooperation, conflict, and competition occur as cultures interact.</li> <li>• analyze problems of ethnocentrism, stereotyping, and cross-cultural misunderstandings and relate these to prejudice and extreme actions such as genocide.</li> <li>• recognize the role of cross-cultural understanding in working toward world stability and peace.</li> </ul>

**High School Social Studies**  
**Model II: World Civilization (1500 - 1945)**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• participate in mini-dramas that reflect different interpretations of the same event based on cultural perspectives. Review the Holocaust from the perspective of the Nazis, Jews, and other nations.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Consult the American Memory Project on the Internet. See &lt;<a href="http://memory.loc.gov">http://memory.loc.gov</a>&gt;</i></p> <ul style="list-style-type: none"> <li>• analyze extent to which social institutions meet individual needs and promote stable societies. Research the Caste System of India to determine individual needs (e.g., food, clothing, shelter) and how satisfied. Investigate ways the social structure of India is maintained. Present findings as narrative performances that can be videotaped for use with other groups.</li> <li>• examine cultural interaction as it results in cooperation, conflict, and competition leading to ethnocentrism, stereotyping, and cross-cultural misunderstandings. Create mock journal entries concerning the European colonization of Africa in the late 1800s. Include different perspectives (e.g., native Africans and Europeans with both sides reflective of positive and negative aspects of colonization).</li> <li>• review visual images (e.g., slides, pictures, posters) and written material of events recognizing cross-cultural issues in an attempt to work toward world stability and peace. Research creation, structure, and goals of the United Nations. Present findings in oral presentations.</li> </ul>	<p>Roberta is working on turning switches on and off to access her equipment needs. She uses a communication board to indicate yes and no responses. She is able to reach and grasp the switch on request by her teacher. She is working on following directions by others. Roberta is responsible for stage lights using a switching device for the mini-dramas. (<i>Types of extensions: participation, purpose and appropriateness, environment, demonstration of knowledge</i>).</p> <p>Alejandro has been in the United States a little less than five months, and, even though he is very sociable, is struggling with reading and writing. The teacher will pair him with a native English speaker who will help develop a survey with three questions pertaining to Americans' knowledge about Hispanics. Alejandro and his partner will go to the school cafeteria and survey at least 30 people. Alejandro will record responses. Once they complete the survey and analyze the answers for absence or presence of stereotyping and cross-cultural misunderstandings, they will give their report in front of the class. As facilitators of a class discussion, they will ask for ways to avoid negative attitudes toward members of other cultures and record the suggestions on the overhead projector (<i>Types of extensions: purpose and appropriateness, level of support, participation, procedures and routines</i>).</p>

**High School Social Studies  
Model II: World Civilization (1500 - 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Economics (2.18)</b></p>	<p>How has economics impacted the development of different peoples, civilizations, and nations in different time periods?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore ways that different peoples, civilizations, and nations in different time periods dealt with scarcity (imbalance between unlimited wants and limited resources).</li> <li>• understand the forces that caused some economic systems to grow and prosper while others remained stagnant or declined.</li> <li>• examine how people and various civilizations made choices that helped or hindered their economic growth.</li> <li>• analyze how increased productivity resulted in the accumulation of material wealth and changed living standards for various peoples, civilizations, and nations.</li> </ul>

**High School Social Studies**  
**Model II: World Civilization (1500 - 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create advertisements (computer-generated or handmade) that illustrate how people and nations have dealt with economic issues of scarcity at different times (e.g., Germany has historically faced a land shortage). Discuss ways in which the German government deals with this issue.</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestions: Create multimedia presentations to share information.</i></p> <ul style="list-style-type: none"> <li>• review visual images (e.g., slides, pictures, posters) and written material that illustrate how events or conditions have impacted different economic systems. Create images of the Arms Race. Investigate the impact of this issue on economic systems.</li> <li>• create computer simulations that examine ways economic choices help or hinder growth. Design simulations to illustrate changes in economic patterns resulting in collapse of the Spanish empire.</li> <li>• create images (computer-generated or handmade) that reflect the impact of certain economic decisions on the quality of life. Study impact of the Industrial Revolution on Europe. Demonstrate ways this changed the quality of life in Europe. Present on posterboard or develop multimedia presentations.</li> </ul>	<p>Maja has been in the United States for almost two years and has acquired an extensive vocabulary and good listening skills. She feels comfortable writing and reading, but is still struggling with correct use of grammar and idiomatic expressions. The teacher has asked her to watch evening commercials for one week, record advertised products that she liked as a result of watching ads, and then to share her findings with two English-speaking partners. After they find products that were most commonly preferred by the three, they will brainstorm to see who would benefit from their purchases and what would be the economic consequences if people suddenly stopped buying these products altogether. The culminating activity would involve each group sharing their findings and conclusions. <i>(Types of extensions: purpose and appropriateness, complexity, resources and materials, participation).</i></p>

**High School Social Studies  
Model II: World Civilization (1500 - 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Geography (2.19)</b></p>	<p>How has geography affected the development of the world and the lives of its people?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine how natural resources, resource needs, different perspectives, and trade relationships produce conflict and/or cooperation.</li> <li>• explore how modifications of the physical environment impact human life.</li> <li>• describe the movement of world populations (resulting from “push and pull” factors) and its impact upon events and cultures.</li> <li>• understand that the location and distribution of human features on the Earth’s surface change over time due to human needs and events.</li> <li>• understand how factors such as locations of resources and markets, transportation, and technology influence placement, size, and function of human settlements and patterns of movement.</li> </ul>

**High School Social Studies**  
**Model II: World Civilization (1500 - 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways different perspectives affect use of resources. Research the issue of ‘white man’s burden’ and indicate impact of this issue on different groups of people. Illustrate by completing this statement, “White man’s burden could be compared to .....</li> <li>• examine ways geography (e.g., land, resources, trade) produces conflict or cooperation among nations. Assume role of the British Parliament and discuss major issues concerning development of the British Empire. Research geographical consequences that dictate certain types of action to preserve the empire. Include different perspectives of imperialistic actions.</li> <li>• review visual images (e.g., slides, pictures, posters) and written material that illustrate how changes in the physical environment (e.g., creation of canal systems) can affect life. Create “Before and After” charts illustrating impacts.</li> </ul> <p><i>Technology suggestion: Research information from the American Memory Project’s Web site. See &lt;<a href="http://memory.loc.gov">http://memory.loc.gov</a>&gt;</i></p> <ul style="list-style-type: none"> <li>• describe movement of world populations and impacts of that movement. Create poems, songs, and/or stories that describe the Irish Potato Famine and the plight of the Irish people (<i>WP-Literary</i>).</li> </ul> <p><i>Technology suggestion: Use word processing programs to write poems.</i></p> <ul style="list-style-type: none"> <li>• create maps and charts (computer-generated or handmade) to illustrate the connection between geographical location and human location. Investigate the period of European exploration of the “New World,” using geographical features to indicate particular locations and patterns of settlement.</li> </ul>	<p>Yoko has been in the United States for a full year and has acquired some basic language skills, even though her writing ability is still extremely low. She needs lots of assistance in forming full sentences and using proper grammar. The teacher asks Yoko to look at two pictures (e.g., one depicting a rural life scene, another showing a busy downtown street in a big city), and, with the help of a bilingual dictionary, to record the feelings inspired by the pictures some favorite activities that could be performed in each environment, and her favorite place and why. Yoko will present her completed assignment in front of the class (<i>Types of extensions: complexity, resources and materials, demonstration of knowledge</i>).</p>

**High School Social Studies  
Model II: World Civilization (1500 - 1945)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Historical Perspective (2.20)</b></p>	<p>How has the world been shaped by the events, trends, conditions, issues, and decisions of the past?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore world civilizations.</li> <li>• examine significant eras (Renaissance, Reformation, Age of Exploration, Age of Revolution, Nationalism and Imperialism, Technological Age of world civilization) to develop chronological understanding and recognize cause-and-effect relationships and multiple causation.</li> <li>• examine the impact of significant individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras and civilizations in world civilization.</li> <li>• recognize the significant impact of geography and natural resources on historical perspectives and events.</li> <li>• trace the impact of advances in research, science, and technology on historical events and human societies.</li> <li>• analyze the challenges and opportunities provided by an increasingly interdependent world.</li> </ul>

**High School Social Studies**  
**Model II: World Civilization (1500 - 1945)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine various accounts of human events to understand how history is interpreted. Study primary and secondary source documents concerning The Enlightenment to illustrate how changes were made in the quality of life. Write newspaper or magazine articles explaining how the quality of life was changed.</li> <li>• research a variety of primary and secondary sources (e.g., books, journals, diaries, magazines, newspapers, computer sources) to understand the social history of various eras. Select a particular civilization or nation and determine the key events that resulted in major cause-and-effect occurrences. Create time lines including key events.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Use software to produce cause-and-effect time lines.</i></p> <ul style="list-style-type: none"> <li>• evaluate the historical impact of individuals and groups. Study circumstances leading to the rise of Adolph Hitler in Germany. Create political cartoons (computer-generated or handmade) to demonstrate his impact.</li> <li>• participate in simulations that demonstrate ways people lived during certain time periods. Study the Aztec civilization and role-play different groups (e.g., ruling class, religious leaders, warriors, artisans, farmers). Videotape the presentation.</li> <li>• review visual images (e.g., slides, pictures, posters) and written information of ways geographical features have influenced people’s lives. Research land use and indicate ways different people would use the land. Share findings in oral presentations.</li> <li>• examine ways advancements have resulted in changes in quality of life. Study changing nature of 20<sup>th</sup> century governments of emerging nations in Asia, Africa, and the Middle East. Create articles depicting quality of life in emerging nations (<i>WP-Transactive</i>).</li> <li>• analyze challenges and opportunities provided in an interdependent world. Review important treaties and alliances which have led to greater interdependence. Conduct panel discussions with different perspectives of the treaties and alliances.</li> </ul>	



**High School Social Studies  
Model II: World Civilization (1500 - 1945)**

**NOTES**

## **High School Social Studies**

### **Model II: U. S. & World History (1945 - Present)**

#### **Course Overview:**

In this 1/2-credit U.S. and world history course, students examine the time period from 1945 to the present. Students study modern America and the world to learn about significant events, people, patterns, and changes during this time period. Historical connections are made to other areas of the social studies including geography, economics, culture and society, and government and civics.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- How have political changes in the U.S. and world affected people and the way they live?
- Have democratic thoughts and ideals (in the U.S. and world) prospered or declined during the period of 1945 - present?
- How do social systems really provide for the wants and needs of people in the U.S. and world?
- How has improved communication and increased technology affected the culture of the U.S. and the world?
- How have economic systems of the U.S. and the world grown and changed during 1945 - present?
- How have economic changes impacted the way people work and live?
- How have people (U.S. and world) modified and used the physical environment since 1945, and what has the impact been?
- How have the U.S. and world changed since 1945, and what does the future hold?

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

Academic Expectations	Guiding Questions	Correlations to Program of Studies
<b>Government and Civics</b> <b>(2.14, 2.15)</b>	<p>How have political changes in the U.S. and world affected the people and the way they live?</p> <p>Have democratic thoughts and ideals (in the U.S. and World) prospered or declined during the period of 1945 - present?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• compare and contrast different political systems and recognize their sources of power.</li> <li>• analyze causes and consequences of various political revolutions and rebellions.</li> <li>• recognize the political causes and consequences of nationalism, militarism, and imperialism.</li> <li>• analyze conflicts between and among forms of government and examine the impact of these conflicts on historical events and changes.</li> <li>• examine ways in which modern governments do or do not preserve and protect the rights and liberties of their constituents.</li> <li>• explore ways in which stability and peace are pursued in an interdependent world.</li> <li>• trace the political development in the United States (1945 - present) including the changing role of state and federal government and the relationships among the branches of government.</li> <li>• recognize how the U.S. Constitution, significant legislation, and landmark Supreme Court decisions have impacted American Society.</li> <li>• analyze roles of political parties and citizen participation in a democratic society.</li> </ul>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• complete matrixes (computer-generated or handmade) to compare different political systems. Include information concerning sources of power, organization and structure, decision-making responsibilities, and role of the people.</li> <li>• participate in role-playing assignments to analyze causes and consequences of various political revolutions and rebellions. View independence movement of emerging nations from perspective of native people and other nations.</li> <li>• recognize impact of nationalism, militarism, and imperialism on global affairs. Investigate militarism and ways it led to actions of North Korea against South Korea. Research information on the attitudes of both nations leading to the conflict. Develop recruitment posters and brochures for branches of the military.</li> <li>• review visual images (e.g., slides, pictures, posters) and written information of tensions and conflicts among different nations. Role-play tensions between the Shah of Iran and his followers during the Iranian Revolution. Respond to questions concerning the tensions.</li> <li>• give presentations on certain governments and their policies on the protection of rights and liberties. Represent governments by role-playing leaders of that government (e.g., President of the United States, Prime Minister of Great Britain, Premier of China, President of Iraq).</li> <li>• analyze ways stability and peace have been pursued in the world (1945 - present). Investigate role of United Nations in response to various global tensions. Create report cards on the effectiveness of the U.N. in regard to different events.</li> <li>• role-play “meeting of the minds” panel where the U.S. Presidents (1945 to present) assemble to discuss key points of government (e.g., changing role of state and federal government, relationships among branches) during their administrations. Videotape presentations and show on local cable channels.</li> <li>• analyze the influence of judicial branch on government and American society. Review constitutional amendments and create an original amendment to be ratified.</li> <li>• create report cards that reflect the involvement of constituents in their citizenship rights and responsibilities. Research involvement of citizens in voting, jury duty, and payment of taxes. Determine if Americans are adequately involved in these rights and responsibilities.</li> </ul> <p><i><b>Technology suggestion:</b> Use integrated software programs to organize information and desktop publishing software to create report cards.</i></p>	<p>Parisa, an Iranian student who has been here for a year has low intermediate language skills. She will use a bilingual dictionary to research technical government vocabulary from a teacher-provided list. Once she has her bilingual list generated, she will research the current political situation in Iran and computer-generate components of the structure of government, using them to create a poster that will contrast with one created by an English-speaking student for the U.S. She will then work with this student to orally present their facts to the class (<i>Types of extensions: procedures and routines, resources and materials, participation</i>).</p> <p>A cluster of students who have quickly learned the changing roles of government and relationships among branches during the administration of U.S. Presidents since 1945, will enact a “meeting of the minds” panel among leaders of other countries during the same period. Each leader will incorporate the views of his/her country toward the contemporary U.S. government and leaders at that time (<i>Types of extensions: complexity, resources and materials, motivation</i>).</p>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society</b> (2.16 2.17)</p>	<p>How do social systems really provide for the wants and needs of people in the U.S. and world?</p> <p>How has improved communication and increased technology affected the culture of the U.S. and the world?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore ways in which belief systems, knowledge, technology, and behavioral patterns define cultures and help to explain historical perspectives and events.</li> <li>• recognize ways in which social institutions (e.g., family, religion, education, government, economy) influence and respond to human needs in various societies including the United States.</li> <li>• examine ways in which cooperation, conflict, and competition occur as cultures emerge and interact.</li> <li>• analyze problems of ethnocentrism, stereotyping, and cross-cultural misunderstandings and relate these to prejudice and extreme actions such as genocide.</li> <li>• recognize the role of cross-cultural understanding in working toward world stability and peace.</li> </ul>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine primary source documents (e.g., journals, diaries, letters, visual images) of everyday life to explain cultural beliefs and perspectives on historical events. Determine the influence of traditional Islamic beliefs on governments of Middle Eastern nations. Give presentations on other countries and how culture beliefs have affected events.</li> </ul> <p><i>Technology suggestion: Use integrated software to create time lines illustrating cause-and-effect events in history.</i></p> <ul style="list-style-type: none"> <li>• analyze extent social institutions meet individual needs and promote society. Review information concerning the changing nature of the American family. Focus on events within the family structure and activities of the family outside of the home. Present findings in mini-dramas to be videotaped.</li> <li>• participate in role-playing assignments to show ways culture can result in different interpretations of the same event. Show how the creation of Israel could be viewed from perspective of Zionists, Palestinians, and British.</li> <li>• examine ways ethnocentrism, stereotyping, and cross-cultural misunderstandings influence historical and contemporary events. In a “60 Minutes” format, role-play the television reporter interviewing South-African officials on Apartheid policies.</li> <li>• review visual images (e.g., slides, pictures, posters) and written material of events and efforts working toward world stability and peace. Evaluate the Camp David Accords and make suggestions for improvements taking into account present-day situations.</li> </ul>	<p>Ali, a Saudi Arabian student who has been in the country for two years, has high intermediate language skills. He needs help with academic language and vocabulary. The teacher will provide a list of essential vocabulary for whatever type of activity she wants Ali to do. He will read documents in his native language in order to be the resident expert on the culture and answer any questions his English-speaking counterparts might pose regarding the documents (<i>Types of extensions: resources and materials, motivation</i>).</p> <p>Hibo, a Somali student who has been in the country for 18 months, has intermediate language skills, and is especially strong orally. She will orally relate how the group’s chosen events would happen in a Somali family situation and bring in props and costumes for the group’s mini-dramas. An English-speaking student will record Hibo’s comments and Hibo will be given the lead in the “60 Minutes” broadcast (<i>Types of extensions: demonstration of knowledge, participation</i>).</p>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Economics</b> <b>(2.18)</b>	<p>How have economic systems of the U.S. and the world grown and changed during (1945 - present)?</p> <p>How have economic changes impacted the way people work and live?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explore ways that different peoples, civilizations, and nations in different time periods dealt with scarcity (imbalance between unlimited wants and limited resources).</li> <li>• understand the forces that caused some economic systems to grow and prosper while others remained stagnant or declined.</li> <li>• analyze changing relationships among government, business, and labor.</li> <li>• examine the transformation of the United States from rural economy to an industrial economy to a leader in the global economy.</li> <li>• analyze how increased productivity resulted in the accumulation of material wealth, and changed living standards for various peoples, civilizations, and nations.</li> <li>• illustrate how technology has changed and continues to change the United States economy.</li> <li>• examine how people and various civilizations made choices that helped or hindered their economic growth.</li> </ul>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create advertisements (computer-generated or handmade) to illustrate how people have dealt with economic issues at different times. Investigate response of global community to destruction of the rain forests. Reflect degree of commitment of other nations to this issue.</li> </ul> <p><i>Technology suggestion: Use multimedia software to create advertisements.</i></p> <ul style="list-style-type: none"> <li>• review visual images (e.g., slides, pictures, posters) and written material that illustrate ways economic events or conditions have impacted different economic systems. Give multimedia presentations on the fall of the Soviet Union and the resulting impact on economic factors.</li> <li>• evaluate factors that have led to changing economy of the United States. Study the impact of immigration on development of the United States. Present findings from perspective of immigrants, businessmen, and American citizens to demonstrate the issues faced by immigrants.</li> <li>• review visual images (e.g., slides, pictures, posters) and written material of changing relationships between business, labor, and government. Review labor management changes since World War II. Create job descriptions reflecting working conditions of today.</li> <li>• create images to reflect impact of certain economic decisions on quality of life. Study changing relationship between United States and nations of the Pacific Rim and the impact. Present findings on posterboard.</li> <li>• create economic “State of the Union” speeches for the years 1945, 1960, 1975, and 1990. Include information in each speech on how technology improved the economy of the United States.</li> <li>• participate in simulations to examine ways economic choices result in positive or negative consequences. Participate in scenarios leading to financial success or ruin. Transfer to national economies. Develop into computer simulation games.</li> </ul>	<p>Jan plans a career in medicine. She will research issues related to healthcare and the economy. She will analyze the data she has gathered and prepare a presentation on the impact of current trends and proposed legislation on the quality of patient care and resulting quality of life (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, time, resources and materials, participation, level of support, environment, procedures and routines, motivation, order of learning, demonstration of learning</i>).</p>



**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Geography</b> <b>(2.19)</b>	<p>How have people (U.S. and world) modified and used the physical environment since 1945, and what has the impact been?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine how natural resources, resource needs, different perspectives, and trade relationships produce conflict and/or cooperation.</li> <li>• understand how changing resource needs and international trade relationships produce conflict and cooperation?</li> <li>• explore how modifications of the physical environment impact human life.</li> <li>• understand that regions are areas on the surface of the Earth that are defined by certain unifying characteristics, both physical and human.</li> <li>• understand how factors such as location of resources and markets, transportation, and technology influence placement, size, and function of human settlements and patterns of movement.</li> <li>• describe the movement of world populations (resulting from “push and pull” factors) and its impact upon events and cultures.</li> <li>• examine how immigration and movement of populations within the United States have impacted the culture of the United States.</li> <li>• understand that the location and distribution of human features on the Earth’s surface change over time due to human needs and events.</li> </ul>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways geography (including productive resources, and changing resource needs) can produce conflict or cooperation between nations. Investigate controversial elements of the North American Free Trade Agreement (NAFTA). Write editorials that represent different perspectives, including those of nations, management, labor, and consumers (<i>WP-Transactive</i>).</li> <li>• review visual images (e.g., slides, pictures, posters) and written information to understand ways changes in the physical environment can affect life. Explore impact of creation of the Interstate Highway System in the United States. Complete written reports on the social and economic impacts.</li> <li>• create maps (computer-generated or handmade) to show different regions of world both human and physical. Explain differences between human/cultural region (e.g., the “South,” the Bible-Belt) or physical regions (e.g., North America, Asia). Display in school lobby or in classrooms.</li> <li>• describe reasons world populations move and impact of that movement. Research ethnic neighborhoods of major cities. Write articles about the contributions of ethnic groups/or individuals to the cultures of cities and towns (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use software programs to create time lines depicting immigration shifts.</i></p> <ul style="list-style-type: none"> <li>• analyze location and distribution of humans in the world. Study geographical factors and urbanization to explain why people are “pushed” from a location and/or “pulled” to another. Present written analyses.</li> <li>• create maps to show changing patterns of human features on the Earth’s surface (e.g., buildings, settlements, dams, roads). Choose a continent or country and create three different maps representing conditions in 1945, 1970, and today. Present findings to the class.</li> </ul>	<p>Joe sustained a spinal cord injury that has left him with limited use of his hands and arms. He requires additional time to complete assignments. He includes two regions (other classmates include four or more regions) in his map. Joe uses his head pointer when using a computer. He uses extended time to complete the map and research (<i>Types of extensions: magnitude, time, resources and materials, level of support</i>).</p> <p>Yadira came from Mexico six months ago and has beginning language skills. With an English-speaking partner, she will research news magazines, Internet, and newspapers for images of Hispanic barrios (neighborhoods). She will tell her partner why her family emigrated to the United States, and the two will then compare images they found with images of neighborhoods in their town where Mexicans live. They will share their findings. Yadira’s final activity will be to write an article about her emigration experiences, using a bilingual dictionary (<i>Types of extensions: resources and materials, level of support, motivation</i>).</p>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<b>Historical Perspective (2.20)</b>	<p>How have the U.S. and world changed since 1945, and what does the future hold?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history (1945 - present).</li> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore the interpretive nature of the history of the United States (1945 - present).</li> <li>• use a variety of tools (e.g., primary and secondary sources, data, artifacts) to explore world civilizations.</li> <li>• examine significant eras, trends, patterns, and events (U.S. and world history during 1945 - present).</li> <li>• examine the impact of significant individuals and groups (in U.S. and world history from 1945 - present).</li> <li>• analyze the social, political, and economic characteristics in the United States and world (1945 - present).</li> <li>• recognize the significant impact of geography and natural resources on historical perspectives and events in the U.S. and world (1945 - present).</li> <li>• examine the impact of advances in research, science, and technology on events in the U.S. and world (1945 - present).</li> <li>• trace the changing role of the United States in the global community from isolationism to a major world power (1945 - present).</li> <li>• analyze the challenges and opportunities provided by an increasingly interdependent world.</li> </ul>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine various accounts of U.S. and world events to understand ways history is interpreted. Research primary source documents concerning the Civil Rights Movement to illustrate different perspectives of the issue. Develop protest poems, stories, or songs representing different perspectives.</li> <li>• examine visual and written information about significant events, trends, and patterns to understand cause-and-effect relationships. Use events of the Space Race to explore the competitive nature between the United States and the former Soviet Union during the Cold War. Create time lines showing the space race with U.S. and Soviet initiatives.</li> <li>• evaluate the historical impact of individuals and groups. Investigate the rise of fundamentalist religious nations. Create political cartoons (computer-generated or handmade) to demonstrate their impact on the world.</li> <li>• participate in simulations to demonstrate ways people have adapted to social, political, and economic situations. Restrict ability of certain students to move about the school and/or room. Write articles about restrictions that certain governments have on their people, the reasons why governments have these restrictions, and people’s reactions (<i>WP-Transactive</i>).</li> <li>• review visual images (e.g., slides, picture, posters) and written information of ways geographical features have influenced people’s lives. Investigate multinational corporations and their use of resources. Write newspaper articles, both pro and con, on multinational corporations’ use of resources (<i>WP-Transactive</i>).</li> <li>• evaluate how technological advancements have resulted in changes. Research elimination of certain diseases that have altered world populations, creating both positive benefits and concerns. Write articles indicating the nature of the disease, status, implications, and predictions (<i>WP-Transactive</i>).</li> <li>• review visual images (e.g., slides, picture, posters) and written information of events that reflect changing roles of the United States in the global community. Investigate changing, controversial nature of U.S. involvement in military alliances (e.g., North Atlantic Treaty Organization (NATO), Southeast Asia Treaty Organization (SEATO), Australia, New Zealand, and the United States (ANZUS) Pact). Create mock military briefings for the President on the positive and negative aspects of alliances.</li> <li>• analyze challenges and opportunities provided in interdependent world. Review important aspects of the human-rights movement. Analyze the U.N.’s Universal Declaration of Human Rights for important elements. Create a “Universal Declaration of Student Rights” reflecting similar important elements.</li> </ul>	<p>Yuseyt, who came from Cuba 13 months ago, has beginning language abilities. She needs assistance with scientific terminology. She and a peer tutor will research the elimination of smallpox from Cuba and present their findings in poster form. Yuseyt’s final assignment will be to write a journal entry about the project, using as much of the newly acquired vocabulary as possible (<i>Types of extensions: purpose and appropriateness, level of support, demonstration of knowledge</i>).</p>

**High School Social Studies**  
**Model II: U. S. & World History (1945 - Present)**

**NOTES**

## **High School Social Studies Model II: World Geography**

### **Course Overview:**

This world geography course is designed as a 1/2-credit course. Although much of the course content is set in a contemporary context, there is a historical strand to make the course more comprehensive. Other connecting strands of social studies are also in the course. These include government and civics, culture and society, and economics.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How does geography impact government at the local, national, and global levels?
  
- How are culture and belief systems reflected in human and physical geography?
  
- What is the relationship between geography and economics?
  
- How does geography affect the way people live?
  
- How has geography impacted the development of the world and its peoples?

**High School Social Studies  
Model II: World Geography**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Government and Civics (2.14, 2.15)</b></p>	<p>How does geography impact government at the local, national, and global levels?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how political decisions affect political boundaries at local, state, and national levels.</li> <li>• recognize how natural environments and resources are used and controlled by governments.</li> <li>• analyze how governments impact their human and physical geography.</li> </ul>

**High School Social Studies  
Model II: World Geography**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• participate in activities indicating how political boundaries are human-made boundaries. Divide room into smaller areas in order to create “nations.” Create maps of the room indicating the new boundaries and discuss how they might impact movement and communication.</li> <li>• examine visual and written information that illustrates ways governments have tried to use and control environments. Study reclaiming of land from the sea or marshlands to demonstrate consequences of that action. Write articles about specific reclamation efforts in the U.S. and explore its pros and cons. Use this activity to develop possible writing portfolio entries (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Use word processing programs to write articles.</i></p> <ul style="list-style-type: none"> <li>• analyze ways governments have made decisions that have impacted both their human and physical geography. Investigate the suggestion that the United States should use its national parks to obtain natural resources such as oil and minerals. Conduct panel discussions with both sides of the argument presented. Write articles that present both sides of the argument, including conclusions about the best approach (<i>WP-Transactive</i>).</li> </ul>	<p>Evgeniya has been in the United States for less than a year, but studied English before she came here, so she is comfortable expressing some basic ideas; she can read and write at the intermediate level. The teacher wants her to watch other students negotiate their way from one nation (part of the room) to another without resorting to violent behavior. She will then have to do the same, trying to use the same or similar strategies and vocabulary that she observed from her classmates. The teacher will ask the class as a whole to share their feelings and impressions of the experience, and relate them to the impact of political boundaries on human life (<i>Types of extensions: participation, pace</i>).</p>



**High School Social Studies  
Model II: World Geography**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Culture and Society (2.16, 2.17)</b></p>	<p>How are culture and belief systems reflected in human and physical geography?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• analyze the origin and migration of cultures.</li> <li>• understand how the activities and beliefs of different cultural and social groups affect the use, form, and characteristics of landscapes.</li> <li>• analyze the impact of movement on people and ideas.</li> <li>• analyze how regions and places can have distinct cultural characteristics.</li> <li>• understand how technological advances have impacted cultural assimilation.</li> </ul>

## High School Social Studies Model II: World Geography

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create world maps representing the early 1900s. Highlight the origin and destination of immigrants coming to the United States. Present information on the reasons immigrants came to the United States.</li> <li>• create visual images (e.g., slides, pictures, posters) of landscapes of different people reflecting certain cultural traits (e.g., religious shrines, housing, recreational areas).</li> <li>• create maps of Europe during the mid-fourteenth century. Show how the Black Death spread throughout Europe and create accompanying time lines to show the amount of time it took for the disease to spread. Compare to the AIDS virus in regard to areas affected and amount of time.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use software to create time lines.</i></p> <ul style="list-style-type: none"> <li>• create annotated maps to examine ways different regions have distinct cultural traits. Provide information about different regions and places of the world, indicating cultural traits.</li> <li>• evaluate the impact of technology (e.g., radio, television, Internet) on the assimilation of cultures. Write articles for school newspapers or community newsletters on the impact technology has had on the assimilation of different cultures (<i>WP-Transactive</i>).</li> </ul>	<p>Marty needs concrete presentations and directions for assignments. A study guide is developed for her so that she knows the ideas to investigate for this activity (<i>Types of extensions: resources and materials, procedures and routines</i>).</p> <p>Jessica is a Braille reader. She creates raised-line maps using yarn or a tactile image enhancer to outline different regions. She uses a variety of objects and or textures to symbolize distinct cultural traits. She will need extra time (<i>Types of extensions: purpose and appropriateness, time, resources and materials</i>).</p>

**High School Social Studies  
Model II: World Geography**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Economics (2.18)</b></p>	<p>What is the relationship between geography and economics?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how geography affects the way nations deal with issues of production, distribution, and consumption.</li> <li>• recognize that the location of activities (e.g., agriculture, production, distribution) impact national and international relationships.</li> <li>• analyze how markets are affected by location and movement.</li> <li>• recognize that all nations have to confront the problem of scarcity (imbalance between unlimited wants and limited resources).</li> </ul>

## High School Social Studies Model II: World Geography

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create charts reflective of different nations and the availability of resources and how they deal with issues such as production, distribution, and consumption. Make comparisons between a nation’s availability of resources and its ability to produce, distribute, and consume.</li> <li>• create visual images (e.g., slides, pictures, posters) of global economic activities. Develop charts indicating how the location of these activities have affected national and international relationships (e.g., multinational corporations, trade agreements, economic sanctions, foreign investment).</li> <li>• study different economic markets and alliances (e.g., E.E.C., O.P.E.C.) to examine impact on the global economy. Create commercials for the economic alliance.</li> <li>• discuss different national decisions concerning production of either consumer goods or military weapons. Create written analyses of how different nations, during different time periods, have made decisions regarding scarcity (e.g., the Arms Race, foreign aid versus investment at “home,” the Space Race, “Butter v Bullets”). Write editorials that take a stand for or against foreign aid (<i>WP-Transactive</i>).</li> </ul> <p><b>Technology suggestion:</b> Use word processing programs to write editorials.</p>	<p>Hibo has been in the United States for less than two years and has good verbal skills. She is still struggling with reading and writing, but can accomplish a lot when prompted and given personal assistance. The teacher will pair her with a native English speaker and ask them to record on a chart all instances in which they had to use electricity over an entire day. After they compare their charts and compile a new one to share, they will brainstorm together to determine ways they could have performed activities without electrical power. They will make a separate list of those activities that could not be replicated without electricity use. Their final report will describe how much they could maintain and how much they would have to modify their lifestyle if there was a scarcity of electricity (<i>Types of extensions: level of support, purpose and appropriateness, demonstration of knowledge</i>).</p>

**High School Social Studies  
Model II: World Geography**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Geography (2.19)</b></p>	<p>How does geography affect the way people live?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• understand that human and physical features of the Earth’s surface can be identified by absolute and relative location.</li><li>• analyze the distribution of human and physical characteristics on Earth’s surface.</li><li>• use geographic tools to analyze patterns resulting from the movement of people on Earth’s surface.</li><li>• understand how and why people interact with and change their environments.</li></ul>

## High School Social Studies Model II: World Geography

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create maps that show physical features of the Earth and also create maps that show human features of the Earth. Use absolute and relative location to identify both kinds of features.</li> <li>• create geographic models reflective of ways Earth includes both human and physical features. Choose one specific civilization or nation and create maps showing human and physical features. Show the relationship between the two types of features.</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use software to create three dimensional models.</i></p> <ul style="list-style-type: none"> <li>• use geographical tools (e.g., maps, globes, charts) to create visual images showing patterns resulting from the movement of people. Use tools with coloring agents that visually show patterns of movement. Formulate conclusions on why people move.</li> <li>• compare historical and present-day reasons on why and how people change their environments. Prepare written reports comparing why people changed their environment in the past and why they do so now. Include information on methods used to alter environments. Prepare multimedia presentations for local environmental clubs.</li> </ul>	<p>As Bill and Holly learn new vocabulary, they need direct instruction and connecting to real life, Multiple meanings of words often cause them to misunderstand content. They receive instruction on the use of the Concept Comparison routine (University Center of Research on Learning) to complete maps and make comparisons, To develop their vocabulary and concept knowledge, they are taught mnemonic strategies and the Clarifying Routine (University of Kansas Center for Research on Learning) (<i>Types of extensions; resources and materials, procedures and routines, purpose and appropriateness</i>).</p>

**High School Social Studies  
Model II: World Geography**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Historical Perspective (2.20)</b></p>	<p>How has geography impacted the development of the world and its peoples?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand historical changes in geographical patterns.</li> <li>• recognize how to locate and gather geographic information using primary and secondary sources.</li> <li>• analyze geographic information to evaluate past events and occurrences.</li> <li>• recognize how attempts to acquire territory and resources have resulted in national and international conflicts.</li> </ul>

## High School Social Studies Model II: World Geography

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create books showing different geographic patterns at different times in history (e.g., weather, population, agriculture, political boundaries). All patterns will be the same size (e.g., 6“ x 6”), and can be put together at the end of the activity to form a geographic patterned quilt.</li> <li>• create annotated books that show how to use primary and secondary sources in locating and gathering geographic information. Give presentations to other classes or schools on how to use the book.</li> <li>• create visual images (e.g., slides, pictures, posters) of past events and occurrences showing the role that geography played. Research outbreaks of major diseases to show how geography played a role in either spreading or limiting the spread of disease.</li> <li>• create illustrated time lines showing different wars and conflicts that were the result of attempts to acquire land or resources. Extend time lines into the future to predict similar conflicts.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use software to create time lines.</i></p>	<p>Abdulaziz can be labeled as an upper intermediate student because he is able to speak, read, and write English with minor difficulties. He needs assistance with more complicated grammatical forms, but makes extensive use of a bilingual dictionary whenever he does not understand a word or expression. The teacher will pair Abdulaziz with a native-English speaker to research information about weather changes. Making use of the daily newspaper, television, Internet, weather almanac, and talking to people over several days, they will report their findings in an annotated book. They may use newspaper clippings, TV forecasts, and notes from personal interviews, specifying whether they were primary or secondary sources in order to compare them for accuracy and reliability of weather forecasting (<i>Types of extensions: complexity, procedures and routines, resources and materials, demonstration of knowledge, level of support</i>).</p>



**High School Social Studies  
Model II: World Geography**

**NOTES**

## **High School Social Studies Model II: Government**

### **Course Overview:**

This 1/2-credit government course is a comprehensive study of government and provides connections to other areas of the social studies, including history, economics, geography, and culture and society.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How does government serve its citizens?
  
- How does government reflect the beliefs, culture, and needs of its citizens?
  
- How does government affect me and other consumers?
  
- How does where I live affect local, state, and national government?
  
- Why have there been different forms of government over time?

**High School Social Studies  
Model II: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Government and Civics (2.14, 2.15)</b></p>	<p>How does government serve its citizens?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand the purposes of various forms of governments.</li> <li>• recognize that the U.S. Constitution established a government of limited powers that are shared among different levels and branches.</li> <li>• analyze the importance of rights and responsibilities of citizens in a democratic society.</li> <li>• analyze various events to determine how the U.S. Constitution has allowed our government to change over time to meet the changing needs of our society.</li> <li>• understand the democratic principles of liberty, justice, individual human dignity, the rule of law, and how they relate to our society.</li> </ul>

**High School Social Studies  
Model II: Government**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine the purposes of a democratic government as indicated by American documents. Survey peers, teachers, parents, and community members about the purposes of the Declaration of Independence, the Constitution, and other American documents. Analyze survey data and create multimedia presentations to share findings. Emphasize the importance of citizen knowledge in a democratic government.</li> </ul> <p><i>Technology suggestion: E-mail surveys to students throughout Kentucky. Analyze responses and create graphs with integrated software packages.</i></p> <ul style="list-style-type: none"> <li>• examine different levels and branches of government and describe their roles. Create Venn diagrams to explain concepts of federalism the division of the government into different levels.</li> <li>• recognize role of different branches of government. Study role of different branches and relate to lawmaking. Create murals that depict the lawmaking process. Reflect either effectiveness or ineffectiveness of this process.</li> <li>• investigate the importance of citizen participation in a democratic government. Examine the failure of Americans to vote and consequences of low voter turnout. Write editorials for school newspapers explaining the importance of voting (<i>WP-Transactive</i>).</li> <li>• examine visual images (e.g., slides, pictures, posters) and journal articles of changes in power of government as influenced by the “Elastic Clause,” amendment process, and constitutional interpretation. Show images of court decisions indicating how power of government has changed.</li> <li>• investigate ways the United States government has attempted to assure liberty, justice, individual human dignity, and the rule of law. Role-play different perspectives (e.g., prosecuting attorneys) and videotape scenes to share with other groups.</li> </ul>	<p>Toneka’s vocabulary, reading and writing, and math abilities are significantly below that of her peers. She learns concepts taught in small increments. In the survey assignment, Toneka will work with a peer. She will practice reading the survey questions prior to the interview. Toneka will ask the questions and her peer will write the responses (<i>Types of extensions: order of learning, level of support</i>).</p> <p>Mai is a Vietnamese student who has been in the country for six months and has beginning language skills. She is extremely limited in all types of vocabulary. The teacher will provide her with a list of necessary vocabulary well in advance, giving her enough time to look up the terms in a bilingual dictionary. Working with a group of English-speaking peers, she will be the group secretary, recording what the other group members dictate. Mai’s final activity will be to go home and interview family members about Vietnamese government and, on the group’s Venn diagram, highlight the similarities in one color and the nonexistent features in another color (<i>Types of extensions: motivation, participation, procedures and routines, pace, order of learning, level of support</i>).</p>

**High School Social Studies  
Model II: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p>How does government reflect the beliefs, culture, and needs of its citizens?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• understand how forms of government view and interact with various cultures.</li><li>• examine how governments and their societies work together to establish social institutions to address the needs of people.</li><li>• analyze how cultures and belief systems are reflected in different forms of governments.</li></ul>

**High School Social Studies  
Model II: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways government interacts with various cultures. Examine treatment of Native Americans by the federal government in the 19<sup>th</sup> century. Present findings through storytelling to be videotaped or put on cassette tapes.</li> <li>• examine ways governments and societies have worked together to address the needs of the people. Review ways people have been assisted (e.g., charitable organizations, state government programs, federal government programs). Create illustrated outlines including important dates of program implementation.</li> <li>• compare world governments and identify ways their cultural perspectives and belief systems are reflected. Write feature articles for current events magazines describing how governments reflect the culture and belief systems of their people.</li> </ul> <p><i>Technology suggestion: Survey government officials via Internet.</i></p>	<p>Doralyn and Joyce need opportunities to develop their creative writing talent. They will interview local nursing home residents to gather information about their birthplaces and various locations they have lived at different periods of their lives. They will look for patterns and geographic and cultural influences on their decisions to live in these locations. Each student will select one resident as the subject of a biography. They will include an epilogue, discussing how geography and culture influenced her subject's life (<i>Types of extensions: purpose and appropriateness, magnitude, time, level of support, participation, environment, demonstration of knowledge</i>).</p>

**High School Social Studies  
Model II: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Economics (2.18)</b></p>	<p>How does government affect me and other consumers?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand ways in which the government of the United States is involved in its economy.</li> <li>• recognize various economic systems and institutions in the United States.</li> <li>• understand how the role of the United States government in its economic system has changed over time to meet the needs of the society.</li> <li>• analyze how the United States government deals with questions of production, distribution, and consumption of goods and services.</li> </ul>

**High School Social Studies  
Model II: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write position papers on the ideal role of a democratic government. Address issues of taxation, government-provided goods and services, education, and welfare. Create multimedia presentations for city councils or county judge executives.</li> <li>• simulate ways services are provided. Create illustrated time lines to show how the role of government in our economy has changed over time. Include important economic laws, treaties, and agreements.</li> <li>• analyze ways changing conditions and needs of society lead to more governmental involvement. Examine local communities and make lists of environmental concerns. Create prioritized action plans for governments to implement, including items for citizens to address.</li> <li>• compare a market economy (e.g., United States) with a command economy (e.g., Cuba) in graphic organizers. Include differences in how each economy deals with issues of production, distribution, and consumption.</li> </ul>	<p>Edie, Suzanne, and LeRoy have a high level of ability and interest in math. They will research how exchange rates are determined, plot the value of the U.S. dollar in relationship to other world currencies over the past five years, and relate significant changes to world events. They will also determine which countries, based on the value so the U.S. dollar, might be good vacation destinations and calculate the expenses for a three-week family vacation in each country (<i>Types of extensions: purpose and appropriateness, complexity, time, resources and materials, procedures and routines, demonstration of knowledge, level of support, participation</i>).</p>



**High School Social Studies  
Model II: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p><b>Geography (2.19)</b></p>	<p>How does where I live affect local, state, and national government?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how the United States government regulates natural and human resources.</li> <li>• recognize various regions in the United States and understand how their local and state governments may operate differently because of regional needs and differences.</li> <li>• analyze how technology has helped or hindered the operation of government.</li> <li>• understand how political decisions affect political boundaries at local, state, and national levels.</li> <li>• recognize how natural environments and resources are used and controlled by governments.</li> <li>• analyze how governments impact their human and physical geography.</li> </ul>

**High School Social Studies  
Model II: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine effectiveness of government in its ability to regulate different resources. Write essays to “What if?” statements to examine laws and regulations relating to natural and human resources (e.g., What if the United States did not regulate certain activities such as oil production and coal mining?).</li> <li>• write letters to community members asking how their local and state governments operate. Send letters to governmental officials asking them to respond to questions that deal with regional differences. Create multimedia presentations for local civic organizations.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> E-mail local and state officials to gather information.</i></p> <ul style="list-style-type: none"> <li>• investigate impact of computers on the dissemination of ideas, information, and services necessary for the smooth functioning of the government. Write editorials explaining advantages and disadvantages of computer use (<i>WP-Transactive</i>).</li> </ul>	<p>Lan Hsin is a Taiwanese student who has been in this country for nine months, has beginning language abilities with very limited academic vocabulary. She will need a teacher-provided list of essential vocabulary required to perform the task. Using a bilingual dictionary, she will look up the terms, as well as any ideas that occur to her regarding the cause/effect situation. She will use the terms generating a simplistic poster showing the cause and effects listed in two separate columns, using only key words and sentence fragments (<i>Types of extensions: resources and materials, order of learning, level of support, procedures and routines</i>).</p>

**High School Social Studies  
Model II: Government**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p style="text-align: center;"><b>Historical Perspective (2.20)</b></p>	<p>Why have there been different forms of government over time?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• recognize that different forms of governments have developed over time.</li><li>• analyze different forms of government to determine their effectiveness.</li><li>• understand the foundations of the United States democratic form of government</li><li>• recognize how the United States government has changed over time to meet the needs of the society.</li></ul>

**High School Social Studies  
Model II: Government**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• investigate changes in society that necessitate different forms of government. Create illustrated flow charts documenting ways different forms of government have developed over time.</li><li>• compare in graphic organizers advantages and disadvantages of limited government with advantages and disadvantages of unlimited government. Construct t-charts to analyze effectiveness of different forms of government.</li><li>• trace development of the United States government into a democratic system. Create presentations to demonstrate different ways philosophies and ideals became incorporated into the government.</li><li>• create visual images of changing nature of government in response to meeting needs of people. Include images of changing role and growth of government.</li></ul>	<p>Susan was in all general education classes prior to sustaining a traumatic head injury. She now needs multiple exposures to concepts. To recognize change over time, Susan uses a cumulative time line documenting changes in American government and the societal needs that caused changes. The teacher uses a master time line, updating it each time there is a change in government. Susan records each change and reason for the change, using her personal time line (<i>Type of extension: procedures and routines</i>).</p>

**High School Social Studies  
Model II: Government**

**NOTES**

## **High School Social Studies**

### **Model II: Economics**

#### **Course Overview:**

This 1/2-credit economics course is a comprehensive study of economics with connections to the other areas of social studies, including history, geography, government, civics, culture and society.

Models are organized around guiding questions. Guiding questions direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

#### **Guiding Questions:**

- What role does the government play in a nation's economy?
  
- As a United States citizen, what role do I play in the economy?
  
- As a social institution, how does the economy meet the needs of its citizens?
  
- How do culture and belief systems affect consumers' decisions?
  
- Why is it important for me to study and understand economics?
  
- How does geography affect or impact a national and/or global economy?
  
- How and why has the economy of the United States changed?

**High School Social Studies  
Model II: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Government and Civics (2.14, 2.15)</b></p>	<p>What role does the government play in a nation's economy?</p> <p>As a United States citizen, what role do I play in the economy?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that voters influence economic policy and decision making through representatives they elect.</li> <li>• recognize that the United States has a market economy which is determined by the forces of supply and demand.</li> <li>• explore others economic systems (e.g., command, traditional) to determine the economic forces that control them.</li> <li>• analyze how decisions on the distribution of resources can be made by local, state, and/or federal levels of government.</li> </ul>

**High School Social Studies  
Model II: Economics**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• review information and events that contribute to election issues and results to determine if there is a correlation. Create illustrated time lines that analyze the influence of economics on elections in the United States.</li> </ul> <p style="text-align: center;"><i>Technology suggestion: Use software to create time lines.</i></p> <ul style="list-style-type: none"> <li>• select products at grocery stores, preferably perishable items, and chart changing prices throughout the year. Relate changes to concept of supply and demand. Create grocery ads for newspapers demonstrating changing prices over time.</li> <li>• investigate factors that influence consumer decisions. Create diagrams that resemble the spokes of a wheel, with consumers in the middle. Indicate factors (e.g., opportunity costs, prices, incentives) consumers consider when making choices on each spoke.</li> <li>• examine visual images (e.g., slides, pictures, posters) and news articles that reflect different economic systems. Compare a command economy (e.g., Cuba) with a market economy (e.g., U.S.). Chart differences and discuss findings. Write stories describing life in both systems.</li> <li>• analyze ways decisions on distribution of resources are made by different levels of government. Decide the level of government most effective in dealing with distribution of resources and debate findings. Create multimedia presentations to share information.</li> </ul>	<p>Freda works in a grocery store with a job coach. She reads prices and matches pictures to food items. She selects five perishable items and checks the prices daily for two weeks. She uses a chart to collect data. The chart is developed for her with pictures of the five items she chose, the dates for ten days, and boxes large enough for her to record prices. Freda presents the information to a small group who incorporate the information in the discussion of supply and demand. (<i>Types of extension: complexity, environment, purpose and appropriateness, motivation, demonstration of knowledge, resources and materials, participation, procedures and routines</i>).</p>



**High School Social Studies  
Model II: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Culture and Society (2.16, 2.17)</b></p>	<p>As a social institution, how does the economy meet the needs of its citizens?</p> <p>How do culture and belief systems affect consumers' decisions?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how the economic incentives of private ownership of property, business opportunities, and profit motives have attracted people from many nations to the United States.</li> <li>• recognize that the economy of the United States is a social institution that attempts to meet the needs of the citizenry.</li> <li>• analyze the role culture plays in economic issues of production, distribution, and consumption.</li> </ul>

**High School Social Studies  
Model II: Economics**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate how economic incentives have attracted people from many nations to the United States. Interview business proprietors representing various cultures to ascertain reasons for moving to the United States. Write news articles explaining incentives.</li> <li>• investigate impact of Sixteenth Amendment. Create charts showing goods and services provided by the U.S. government to its citizens before and after the Sixteenth Amendment (income tax) was ratified. Evaluate and debate whether income taxes have been positive or negative.</li> <li>• investigate how culture affects consumer choices and decisions. Create cartoons reflecting ways different cultures respond to economic issues of production, distribution, and consumption.</li> </ul> <p><i>Technology suggestion: Use integrated software packages to create cartoons.</i></p>	<p>Fernanda, Anel, Hank, and Fatina are highly creative students with limited English proficiency. Using their first language, they interview their parents, family friends, or others in their ethnic communities on reasons for coming to the U.S. They present their findings to the class in English (<i>Types of extensions: motivation, purpose and appropriateness</i>).</p> <p>Cameron has rheumatoid arthritis that significantly impacts his ability to participate in sustained writing activities. Gayla is a quadriplegic. To create cartoons, they will work with an assistant, multimedia technology, and peers. On days that Cameron’s arthritis is under control, he works independently (<i>Types of extensions: level of support, procedure and routines, time, resources and materials</i>).</p>

**High School Social Studies  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Economics (2.18)</b></p>	<p>Why is it important for me to study and understand economics?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that the basic economic problem confronting individuals, societies, and nations is scarcity or the imbalance between unlimited wants and limited resources available to satisfy those wants.</li> <li>• recognize that, as a result of scarcity, individuals, societies, and nations must make choices/decisions which result in consequences.</li> <li>• analyze economic concepts and understand their nature and relevance to different economic situations.</li> <li>• analyze how individuals and nations deal with the issues of production, distribution and consumption.</li> <li>• recognize that markets (e.g., national, international, global) and economic institutions exist to enable buyers and sellers to exchange goods and services.</li> <li>• recognize that economic systems are created by individuals and societies to achieve broad goals (e.g., security, growth, freedom, efficiency, equity).</li> </ul>

**High School Social Studies  
Model II: Economics**

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explain why scarcity is the basic economic problem. Study problems created when resources (e.g., oil, timber, water) are not available and responses of nations. In feature articles, discuss the impact that the lack of resources has had on communities in Kentucky (<i>WP-Transactive</i>).</li> <li>• identify opportunity costs when decisions on major purchases are made. Create contracts for major purchases including information on opportunity costs.</li> <li>• investigate basic economic concepts. Illustrate economic concepts through fables (<i>WP-Literary</i>).</li> <li>• examine the human and natural resources of developing countries. Create economic plans that address issues of production, distribution, and consumption.</li> <li>• examine different institutions in competition for services. Compare car loan rates at different banks and credit unions. Write news articles to help others make decisions about the best bank to use for their next car purchase (<i>WP-Transactive</i>).</li> </ul> <p><i>Technology suggestion: Use word processor to create bank service brochures.</i></p> <ul style="list-style-type: none"> <li>• investigate individual needs (e.g., housing) and societal goals (e.g., housing for all members). Construct flow charts that demonstrate ways economic systems are created by individuals and societies to achieve broad goals.</li> </ul> <p><i>Technology suggestion: Use integrated software packages to create flow charts.</i></p>	<p>Tim and Jesse, both highly creative students, need opportunities to develop entrepreneurial skills. They will research the status of aquaculture experiments in Kenton County as an alternative to raising tobacco. They will consult with the state aquacultural researchers as well as local business persons who can provide guidance in setting up business and marketing plans (<i>Types of extensions: purpose and appropriateness, complexity, level of support, demonstration of knowledge, participation, resources and materials, motivation, environment</i>).</p> <p>Melinda has a personal goal to develop self-advocacy strategies that will assist her in the future with accessing resources. She volunteers for the Legal Aid Society and is a mentor for younger students. She makes an oral presentation for the Legal Aid Society and for the students she mentors that illustrates the critical knowledge they need to be self-advocates. The presentation is videotaped and the tape is placed in the school library (<i>Types of extensions: purpose and appropriateness, demonstration of knowledge, motivation, environment</i>).</p>

**High School Social Studies  
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<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Geography (2.19)</b></p>	<p>How does geography affect or impact a national and/or global economy?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand that the problem of scarcity (unlimited wants and limited resources) must be addressed by all nations.</li> <li>• recognize that nations deal with scarcity by making choices that have consequences.</li> <li>• analyze how nations’ wealth and consequent trade potential are tied to their resources.</li> <li>• explore how international trade and multinational corporations have led to the emergence of a global economy.</li> </ul>

**High School Social Studies  
Model II: Economics**

<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• examine problems of scarcity and responses by different nations. Select a highly industrialized country, a moderately industrialized country, and a third-world country. Compare how the different countries have dealt with scarcity. Evaluate the choices each country has made relative to the issue of scarcity and debate their success. Present findings in oral presentations.</li><li>• evaluate economic advantages of nations. Simulate nations' wealth by using tokens or money to make purchases, demonstrating differences in economic power. Develop ways to equalize purchasing positions.</li><li>• explore international trade to examine the creation of a global economy. Hold mock international conferences, role-playing different nations' positions on whether international trade has been good or bad.</li></ul>	<p>Rick acquires information best when provided with memory and organizational devices to support his learning, especially when the tasks require integrating information. To help him organize information for his oral presentation, his teacher provides Rick with a pre-developed matrix that outlines issues and countries to research (<i>Types of extensions: complexity, magnitude, procedures and routines, level of support, resources and materials</i>).</p>

**High School Social Studies  
Model II: Economics**

<b>Academic Expectations</b>	<b>Guiding Questions</b>	<b>Correlations to the Program of Studies</b>
<p align="center"><b>Historical Perspective (2.20)</b></p>	<p>How and why has the economy of the United States changed?</p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• understand how the United States economy has changed from a rural economy to an industrial economy to a leader in the global economy.</li> <li>• recognize that the U.S. Constitution contains few economic guidelines; therefore, economic policies are determined by elected officials.</li> <li>• analyze how the number and complexity of economic issues have increased as the United States has entered the global economy.</li> </ul>

**High School Social Studies  
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<b>Sample Activities</b>	<b>Sample Extensions for Diverse Learners</b>
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine ways the U.S. economy has changed over time. Select economic issues from different time periods and assume roles of government officials and consumers. Role-play how different people were affected.</li> <li>• engage in academic scavenger hunts that uncover economic issues discussed in documents of United States history (e.g., governmental response to taxation will be analyzed through existing documents—the Constitution, federal statutes, Supreme Court cases). Create collages composed of news headlines indicating major economic developments.</li> <li>• identify important economic issues and events in U.S. history. Create multimedia presentations showing how economic issues have changed from internal issues (U.S. only) to those of a global nature.</li> </ul>	<p>Charlie learns at the same rate as his same-age peers except in the area of language. The teacher gives multiple examples of economic issues such as choices, prices, and needs prior to the assignment (<i>Types of extensions: order of learning, procedures and routines</i>).</p> <p>Luke, Sarah, Tillie, Rina and Agnes grasp concepts quickly and need opportunities to practice exerting effort in learning. They will research the impact of deregulation on the U.S. and world economy, present their findings, and predict the possible effects of further deregulation (<i>Types of extensions: purpose and appropriateness, complexity, participation, motivation, resources and materials, demonstration of knowledge, level of support</i>).</p>



**High School Social Studies  
Model II: Economics**

**NOTES**

## **High School English/Language Arts and Social Studies Interdisciplinary World Studies**

**Content Areas:** English II and World Civilization

**Prerequisite:** English I

**Credit:** 2 (1 English, 1 Social Studies)

### **Course Overview:**

This world studies course is a chronological, interdisciplinary survey of the history, culture, sociology, literature, art, music, and philosophies of cultures around the world. Students are engaged in critical inquiry throughout the course. They investigate historical and literary periods, gaining a better perspective of the universal human condition and man's role in the world. Students build communication and inquiry skills by focusing on the development of longer written compositions and oral presentations. In addition to reading and writing activities, students prepare a variety of creative projects, based on individual interests.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions, listed below the guiding questions, are included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair, are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the needs of all their students

### **Guiding and Essential Questions:**

#### **How have historical events influenced our understanding of the modern world?**

- How did Revolutions advance or stagnate the human experience?
- How did Industrialization bring about changes in the traditional European social structure?
- How do the effects of Colonialism cause tension for us today?
- How do wars reflect winners and losers?

#### **How do forms of expressions and communications (e.g., literature, art, music, dance, drama, philosophy, technology) reflect the human experience of a given period in world history?**

- How was Romanticism a reaction to Industrialization and the Enlightenment?
- How did technological advances impact the human experience?
- What are some experiences common to people over time?

## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.24, 2.25)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p style="text-align: center;"><b>Historical Perspective (2.20)</b></p> <p style="text-align: center;"><b>Government and Civics (2.14, 2.15)</b></p> <p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Renaissance, Reformation, Exploration</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p>	<p><b>Students will English II</b></p> <ul style="list-style-type: none"> <li>• respond critically and analyze literary genres.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• develop and apply verbal and nonverbal elements of delivery.</li> <li>• apply language structure and conventions when speaking.</li> <li>• interpret structure and organization from selected readings.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• analyze social, political, and economics characteristics of eras.</li> <li>• analyze causes and consequences of revolutions and rebellions.</li> <li>• explore ways in which cultures are defined.</li> </ul>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read and analyze Renaissance literature (e.g., Petrarch, Rostand, Shakespeare, de Cervantes, Marlowe, Machiavelli, Montaigne (essays), Erasmus, Luther, Boccaccio), including primary sources to identify ideas of humanistic thought.</li> <li>• research reforms of the Renaissance. Write letters from a period perspective describing how societal, economic, and technological changes (e.g., moveable type, partnerships, new types of food, new manufactured products) impacted life during the Renaissance.</li> <li>• write and deliver speeches that church reformers might have given in support of reform.</li> <li>• read about changes (e.g., political, social, scientific, economic) that occurred during the Reformation as reflected by writers (e.g., Swift, Dickens, Orwell, Shelley, Blake, de Maupassant, Pope). Discuss findings and record information in learning logs.</li> <li>• develop graphic organizers to compare the three religious movements (Lutheran, Calvinism, Anglican). Identify leaders, main beliefs, and geographical areas. Compare these movements to establishment of other religions (e.g., Buddhism, Hinduism). Write articles for social studies journals discussing one religion including how geography influenced its development. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> <li>• demonstrate how art helps define cultures. Create mini-museums displaying works of Renaissance visual artists (e.g., DaVinci, Michaelangelo, Raphael, Titan, Durer, Jan Van Eyck).</li> <li>• examine the Harlem Renaissance in America and compare it to the European Renaissance. Explore how differences in perception are tied to the development of nations' religious background and political struggles. Create dialogues between leaders of each period.</li> <li>• research important women of the Renaissance and examine their roles within society. Compare their lives with the lives of their male counterparts. Create visual images (e.g., collages, mobiles) illustrating differences in lifestyle.</li> </ul>	<p>Claude uses an interpreter to understand information presented orally. For this assignment, Claude will use the Internet to gather information on religious movements. Claude's interpreter voices his responses (<i>Types of extension: demonstration of knowledge</i>).</p> <p>Robin, Nevel, and Cole enjoy books. However, they have difficulty remembering what they have read and analyzing complex text to understand main ideas. They need multiple opportunities to learn new language and understand new concepts. To assist the students with their reading assignments, they are taught some strategies for reading (e.g., developing guided reading questions, graphic organizers, story mapping, retrieval strategies, context clues, familiar expression clues, synonym clues, example clues and definition clues, mnemonics, story grammar techniques and visual imagery). They will select works by two writers written to match their reading level. Prior to the assignment, they receive instructions on complex vocabulary that is paired with examples. They also receive instruction on the process of analyzing changes using graphic organizers (<i>Types of extensions: order of learning, complexity, magnitude, procedures and routines, resources and materials, level of support</i>).</p>

## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Speaking/Listening/Observing</b> (1.3, 1.4, 1.12)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Government and Civics</b> (2.14, 2.15)</p>	<p style="text-align: center;"><b>Revolutions</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p> <p>How did Revolutions advance or stagnate the human experience?</p>	<p><b>Students will</b></p> <p><b>English II</b></p> <ul style="list-style-type: none"> <li>• read and analyze persuasive materials.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• analyze persuasive techniques when listening and observing.</li> <li>• practice critical listening, observing, and thinking.</li> <li>• identify authors' point of view, persuasive, and propaganda techniques, and facts/opinions, especially in persuasive passages.</li> <li>• understand vocabulary in context.</li> <li>• apply appropriate source documentation.</li> <li>• use appropriate practices to access technology.</li> <li>• use technology to present information.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• analyze social, political, and economics characteristics of eras.</li> <li>• analyze causes and consequences of revolutions and rebellions.</li> <li>• recognize causes and consequences of nationalism, militarism, and imperialism.</li> <li>• analyze conflicts between different forms of government and examine the impact of these conflicts on historical events and changes.</li> </ul>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research the four major militaristic revolutions (e.g., American, British, French, Russian) to understand their causes and impact on societies, cultures, and governments. Compare to revolutions in other countries (e.g., Puerto Rico, Cuba). Work in collaborative groups to create illustrated books about one of the revolutions.</li> </ul> <p><i>Technology suggestions: Use online research tools to research revolutions. Use desktop publishing programs to create books.</i></p> <ul style="list-style-type: none"> <li>• analyze the rise of democracy. Read and evaluate persuasive primary documents (e.g., Declaration of the Rights of Man and Citizen, English Bill of Rights, Emancipation Proclamation, selections from Hobbes, Locke, Montesquieu, Voltaire, Rousseau, Marx, Engels). Create informative articles describing one of the philosophers and his beliefs (<i>WP-Transactive</i>).</li> <li>• compare primary documents (e.g., Declaration of the Rights of Man and Citizen, English Bill of Rights, <i>Declaration of Independence</i>). Create Venn diagrams to illustrate similarities and differences of primary sources.</li> <li>• read <i>A Tale of Two Cities</i>. Investigate Dicken’s point of view, specialized vocabulary, and historical portrayal of the French Revolution. Compare book to movie version. Write movie reviews for school newspapers (<i>WP-Transactive</i>).</li> <li>• prepare debates based on the statement, “Revolutions are justifiable.” Write persuasive letters to future generations explaining why (or why not) revolutions are justifiable and read to class. Critique each others’ letters (<i>WP-Transactive</i>).</li> </ul>	<p>Don uses low vision devices to obtain visual information. In order to explain his need to see information used in classroom discussions and demonstrations, he is taught self-advocacy skills and independence, which are part of his transition goals. He uses a monocle to read primary documents in text and chart form and accesses voice text to read information from computers. He previews visual information prior to class allowing him to follow the discussion (<i>Types of extensions: resources and materials, procedures and routines, level of support</i>).</p>

## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Economics</b> (2.18)</p> <p style="text-align: center;"><b>Culture and Society</b> (2.16, 2.17)</p>	<p style="text-align: center;"><b>Industrialization</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p> <p>How did Industrialization bring about changes in the traditional European social structure?</p> <p>How was Romanticism a reaction to Industrialization and the Enlightenment?</p>	<p><b>Students will</b></p> <p><b>English II</b></p> <ul style="list-style-type: none"> <li>• read and analyze persuasive materials.</li> <li>• respond critically and analyze literary genres.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• develop and apply verbal and nonverbal elements of delivery.</li> <li>• practice critical listening, observing, and thinking.</li> <li>• apply language structure and conventions when speaking.</li> <li>• read and analyze practical/workplace materials.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• analyze social, political, and economics characteristics of eras.</li> <li>• trace the impact of advances in research, science, and technology.</li> <li>• analyze the challenges and opportunities of an interdependent world.</li> <li>• understand the forces that affect economic systems.</li> <li>• examine how people in various civilizations made choices relating to economic growth.</li> <li>• analyze how increased productivity resulted in the accumulation of wealth.</li> <li>• explore ways in which cultures are defined.</li> </ul>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• investigate ways governments encourage research and development in the private and public sectors. Research copyright and patent laws of different countries governing new inventions, products, and ideas. Write editorials proposing incentives governments may implement to encourage innovation in individuals or groups. Support editorial positions with research data (<i>WP-Transactive</i>).</li> <li>• research how specialization, division of labor, and improvements in capital goods increase productivity. Investigate examples of different ways to increase productivity (e.g., Joseph Wedgwood and pottery industry, Eli Whitney and the cotton gin). Explore how one new technology led to development of others. Create illustrated time lines that trace history of technological developments. Read literature selections that illustrate how technology impacted quality of life for society.</li> <li>• design and create museum exhibits titled “The Industrial Revolution.” Include technological advancements, political leaders, and prominent people in arts and sciences.</li> <li>• examine the treatment and contributions of immigrants (e.g., Chinese work on the railroad system). Write feature articles detailing findings (<i>WP-Transactive</i>).</li> <li>• compare European social structure to that of other areas (e.g., America, Africa, Asia). Create graphic organizers to compare European social structure before and after the Industrial Revolution.</li> <li>• listen and respond to music of the Romantic period and narrate audiotapes that compare music of the Classical to Romantic periods (e.g., Classical: Mozart, Haydn; Romantic: Beethoven, Tchaikovsky, Wagner). Compare in graphic organizers European music of this time period to music from other continents.</li> <li>• examine changes in different cultures as a result of the Industrial Revolution. Investigate forerunners of labor unions (e.g., Hui Kuan). Investigate workplace rules and regulations, past and present. Explore concepts of child labor and education for children in different cultures. Write articles comparing children’s living conditions in different cultures, then and now.</li> <li>• read selections of Romantic literature (e.g., Goethe, Wordsworth, Heine, Keats, Whitman, Hugo). Craft encyclopedia articles explaining Romanticism in historical and cultural contexts.</li> </ul>	<p>Geneva is deaf. She can not hear sound, but she can feel vibrations. She watches dance videos set to music of the romantic and classical periods to show tempo and mood. Peers work with her to provide assistance with explanations during the video pieces. She uses a computer with voice text to write her presentation. The computer voices her presentation to the class. Her computer presentation is given to the local library and school library to benefit other individuals who are deaf (<i>Types of extensions: purpose and appropriateness, resources and materials, demonstration of knowledge, level of support</i>).</p>



## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.24, 2.25)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Historical Perspective (2.20)</b></p> <p style="text-align: center;"><b>Geography (2.19)</b></p> <p style="text-align: center;"><b>Government and Civics (2.14, 2.15)</b></p> <p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Imperialism</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p> <p>How do the effects of colonialism cause tension for us today?</p>	<p><b>Students will English II</b></p> <ul style="list-style-type: none"> <li>• respond critically and analyze literary genres.</li> <li>• select and read materials for enjoyment.</li> <li>• write personal pieces.</li> <li>• critique own and others' writing.</li> <li>• develop and apply verbal and nonverbal elements of delivery.</li> <li>• practice critical listening, observing, and thinking.</li> <li>• apply language structure and conventions when speaking.</li> <li>• use technology to present information.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• recognize the significance of geography and natural resources.</li> <li>• analyze the challenges and opportunities of an interdependent world.</li> <li>• examine how natural resources, perspectives, and relationships produce conflict and/or cooperation.</li> <li>• describe the movement of populations and its impact.</li> <li>• understand location and distribution of human features of the Earth.</li> <li>• understand how factors influence settlements and movement.</li> <li>• examine ways in which cooperation, conflict, and competition occur.</li> <li>• analyze problems of ethnocentrism, stereotyping, and cross-cultural misunderstandings.</li> <li>• recognize the role of cross-cultural understanding.</li> <li>• examine ways in which modern governments do or do not preserve and protect the rights and liberties of their constituents.</li> </ul>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• make generalizations about the culture and civilization of Africa before colonization based on passages from <i>Out of Africa</i>. View portions of the film. Respond in learning logs to the idea of “white man’s burden”.</li> <li>• read portions of <i>Cry, the Beloved Country</i> and view the film <i>Cry, Freedom</i> to gain an understanding of racial oppression in Africa. Investigate national and international laws written to protect citizens from discrimination and oppression.</li> <li>• work in pairs to create maps of Africa showing various stages of conquest by western powers.</li> <li>• research the development, history, and ownership of the Suez Canal. Prepare maps of the Eastern Hemisphere, using the Suez Canal as the central focus of the map. Prepare charts depicting statistical information on the impact of the canal on world trade. Debate which canal, Suez or Panama, is more important in terms of worldwide economy and strategic location.</li> <li>• investigate colonial rule under specific nations (e.g., Great Britain, France, Italy, Belgium, United States, Portugal, Cuba, Puerto Rico). Create bulletin boards of the world in 1914 showing European colonies, trade routes, and trade goods.</li> <li>• research influential persons in an era (e.g., Kaiser Wilhelm II, Tsar Nicholas II, General Erich Ludendorff, Georges Clemenceau, Woodrow Wilson, Vladimir Lenin).</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> After researching significant individuals, videotape round table interview segments with students answering questions in the role of their assigned individual.</i></p> <ul style="list-style-type: none"> <li>• read selections from <i>Nectar in a Sieve</i> to make connections between personal experiences and historical events in India under British rule. Read other literary selections about Indian history and make comparisons.</li> <li>• read selections from <i>Things Fall Apart</i> and <i>Kaffir Boy</i> to gain an understanding of the effects of colonialism on African cultures and individual Africans.</li> </ul>	<p>Abini recently moved to this country from South Africa. She loves to write stories and poetry. Abini will read her poetry to the class and ask them to critique her work (<i>Types of extensions: motivation, participation, purpose and appropriateness</i>).</p>

## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.24, 2.25)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Historical Perspective (2.20)</b></p> <p style="text-align: center;"><b>Geography (2.19)</b></p> <p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Defense of Democracy (1910 - 1945)</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p> <p>How do wars reflect winners and losers?</p> <p>How did technological advances impact the human experience?</p>	<p><b>Students will</b> <b>English II</b></p> <ul style="list-style-type: none"> <li>• respond critically and analyze literary genres.</li> <li>• select and read materials for enjoyment.</li> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write personal pieces.</li> <li>• use organizational signals.</li> <li>• use practices, skills, and strategies to access technology.</li> <li>• use technology to present information.</li> <li>• evaluate credibility of sources.</li> <li>• access, compare, and document multiple sources of print and nonprint resources for group, collaborative, and/or independent inquiry projects.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• analyze social, political, and economics characteristics of eras.</li> <li>• trace the impact of advances in research, science, and technology.</li> <li>• examine how natural resources, perspectives, and relationships produce conflict and/or cooperation.</li> <li>• explore how modifications of the environment affect life.</li> <li>• examine ways in which cooperation, conflict, and competition occur.</li> <li>• recognize the role of cross-cultural understanding.</li> </ul>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• read and analyze Russian literature (e.g., “The Death of Ivan Ilyich,” <i>The Cherry Orchard</i>) to understand plight of Russian people during Stalin’s rule. Write articles about social, political, and economic impact of Stalin’s rule. Share with local historical society (<i>WP-Transactive</i>).</li> <li>• research the Holocaust. Read firsthand accounts (e.g., <i>Night</i>, <i>The Diary of Anne Frank</i>). Compare different accounts of the Holocaust in both print and nonprint sources (e.g., Internet, magazines, books). Investigate ways to determine credibility of different accounts.</li> </ul> <p><i>Technology suggestion: Prepare multimedia presentations depicting personal experiences of those impacted by the Holocaust.</i></p> <ul style="list-style-type: none"> <li>• choose European countries involved in WWII and produce political cartoons expressing that country’s rationale for entering the war.</li> <li>• investigate literature to discover propaganda and persuasive techniques used during WWII. Create bulletin boards of posters, cartoons, and other visuals used during WWII.</li> <li>• read literature about nuclear bombing of Japan (e.g., <i>Hiroshima, No Pika</i>) to gain an understanding of devastation from victims’ points of view. Write persuasive letters to future generations about wars from the perspective of individuals who experienced the bombing of Japan.</li> <li>• produce fictional journals of civilian victims made homeless by WWII bombing based on written or photographic documentation.</li> <li>• view <i>All Quiet on the Western Front</i>. Write letters to French soldiers’ families from German soldiers’ point of view.</li> <li>• research technologies created for the war effort. Investigate impact of these on the war effort and society. Create catalogs of technological advances of WWI and WWII including illustrations and descriptions.</li> <li>• examine changes in civil rights in America after WW II. Investigate important events (e.g., Japanese internment), people (e.g., Tuskegee Airmen), and legislation (e.g., Johnson Reed National Origin and Immigration Act of 1924). Research media coverage of these events and people. Write time period news articles to describe events.</li> </ul>	<p>Felix is an outstanding artist. He is responsible for tutoring his peers in the use of the elements of art to create their illustrations (<i>Types of extensions: purpose and appropriateness, motivation, complexity</i>).</p> <p>Colleen sustained a spinal cord injury which has left her with limited use of her hands. She uses clip art and computer to complete her political cartoons. She is given extra time to complete her assignment and uses an adaptive device in place of the traditional mouse (<i>Types of extensions: resources and materials, time</i>).</p>

## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Government and Civics</b> (2.14, 2.15)</p> <p style="text-align: center;"><b>Culture and Society</b> (2.16, 2.17)</p>	<p style="text-align: center;"><b>Contemporary World</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p> <p>How has the human experience redesigned the modern world?</p>	<p><b>Students will</b></p> <p><b>English II</b></p> <ul style="list-style-type: none"> <li>• respond critically and analyze literary genres.</li> <li>• select and read materials for enjoyment.</li> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• analyze social, political, and economics characteristics of eras.</li> <li>• examine ways in which cooperation, conflict, and competition occur.</li> <li>• recognize the role of cross-cultural understanding.</li> <li>• compare and contrast different political systems and recognize their sources of power.</li> <li>• explore ways in which stability and peace are pursued in an interdependent world.</li> <li>• recognize ways in which social institutions influence and respond to human needs in various societies.</li> </ul> <p style="text-align: right;"><i>(Continued on page 142)</i></p>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• interview relatives or acquaintances about life in the 1950s or 1960s (e.g., events, styles, music, technology, jobs, entertainment, civil rights, education, attitudes). Write articles for school newspapers discussing similarities and differences between life in the present decade and life in the 1950s or 1960s (<i>WP-Transactive</i>).</li> <li>• conduct mock United Nations meetings with representatives from the five permanent members: United States, France, Great Britain, Commonwealth of Independent States, and China. Divide into small teams, one for each nation. Choose current world problems to debate from their nation’s perspective. Use non-fiction reading skills to research and prepare their nation’s view. Use effective persuasive strategies to present their nation’s perspective.</li> <li>• read literature selections from 1940 to present. Present literature selection to class to convince students that this piece should be included in an anthology to depict the time period. Research events and attitudes of the time period and write introductions for selections to explain how their chosen piece of literature reflects the time period.</li> <li>• plan postwar West European art festivals to illustrate art of period. Represent Great Britian, France, and West Germany. Use research skills to determine which music, theatre, literature, films, dance, and art of the 1950s and 1960s to include. Write reviews of the pieces chosen, present oral explanations to class, and construct displays.</li> </ul>	<p>Lula is a creative performer, but has difficulty organizing and communicating her ideas in written form. She researches the 50s and 60s using multimedia reference tools. She is provided models of various types of questions from which she selects and expands her set of questions for her interview. Instead of taking notes during the interview, she videotapes it. She works in a group to develop a living portrait as a vehicle for sharing her information. She does a “time and again” segment showing the influences between experiences of the 50s and 60s and those of today. Because there are other students with learning needs, the teacher develops a scoring guide that includes criteria for presenting information (<i>Types of extensions: purpose and appropriateness, complexity, magnitude, order of learning, procedures and routines, resources and materials, demonstration of knowledge, levels of support, participation, motivation</i>).</p>

## World Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Economics</b> (2.18)</p>	<p style="text-align: center;"><i>(Continued from page 140)</i></p> <p style="text-align: center;"><b>Contemporary World</b></p> <p><b>How have historical events influenced our understanding of the modern world?</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period in world history?</b></p> <p>What are some experiences common to people over time?</p>	<p><b>Students will</b></p> <p><b>English II</b></p> <ul style="list-style-type: none"> <li>• select and read materials for enjoyment.</li> <li>• use writing-to-learn strategies.</li> <li>• apply writing-to-demonstrate-learning strategies.</li> <li>• write transactive pieces.</li> <li>• use organizational signals.</li> <li>• use practices, skills, and strategies to access technology.</li> <li>• use technology to present information.</li> </ul> <p><b>World Civilization</b></p> <ul style="list-style-type: none"> <li>• understand the interpretive nature of world history.</li> <li>• use tools to explore world civilizations.</li> <li>• examine significant eras to develop chronological understanding.</li> <li>• examine the significance of individuals and groups.</li> <li>• trace the impact of advances in research, science, and technology.</li> <li>• explore ways that different peoples, civilizations, and nations in different time periods dealt with scarcity.</li> </ul>

## World Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• construct illustrated time lines of important events in each country’s history between WWI and the present. Include political, religious, economic, and cultural events.</li> </ul> <p><i>Technology suggestions: Work in groups to prepare video presentations on countries and/or regions studied. Use research sources, including library, Internet, textbooks, and class notes to prepare comprehensive videos. Collaborate to write scripts and film videos. Videotape role-playing interviews on the Cold War with Harry Truman, Dwight Eisenhower, John Kennedy, Richard Nixon, Joseph Stalin, Nikita Khrushchev, and Leonid Brezhnev. Produce and videotape mock news stories on the Arab-Israeli conflict.</i></p> <ul style="list-style-type: none"> <li>• research problems and challenges of 21st century. Construct collages to represent the 21st century focusing on modern problems and challenges. Develop and discuss possible solutions.</li> <li>• write feature articles to submit to popular news magazines (e.g., <i>Newsweek</i>, <i>Time</i>) about current events or individuals. Write for specific audiences and purposes (<i>WP-Transactive</i>).</li> <li>• prepare prospectuses for movie scripts. Choose topics studied during the course and develop movie plots. Base movie ideas on information studied in the course (<i>WP-Transactive</i>).</li> <li>• read materials to compare current world instability to similar historical problems. Respond to open-response questions on this topic.</li> <li>• investigate measures used by different types of governments to create products needed in times of war. Identify appropriate literature to portray examples of such efforts.</li> </ul>	<p>Jorge has only been in the U.S. for a few months and has limited English language skills and vocabulary. The teacher will provide Jorge with a list of essential vocabulary. He will work with a group of English-speaking students to create time lines, but he will be responsible for illustrations (<i>Types of extensions: level of support, resources and materials, order of learning</i>).</p>



**NOTES**

## World Studies Student Resources

Achebe, Chinua. *Things Fall Apart*  
Alighieri, Dante. *The Divine Comedy*  
*The Arthur Legend*  
*The Awakening of Osiris*  
*Bhagavad Gita*  
Boccaccio, Giovanni. *Decameron*  
*The Book of the Dead*  
*The Book of Ruth*  
*The Book of Songs*  
Brancato, Robin. *Fourth of July*  
Brancato, Robin. *Furlough 1944*  
Chekhov, Anton. "The Bet"  
Chekhov, Anton. *The Cherry Orchard*  
Chief Seattle. *American Indian Stories*  
Confucius, *The Analects*  
Crane, Stephen. *The Red Badge of Courage*  
de Maupassant, Guy. "The Necklace"  
Dickens, Charles. *A Tale of Two Cities*  
Dinesen, Isak. *Out of Africa*  
*The Epic of Gilgamesh*  
Euripedes. *Medea*  
Frank, Anne. *The Diary of Anne Frank*  
Genesis 1-3 (The Creation and the Fall)  
Genesis 6-9 (The Story of the Flood)  
Greene, Bette. *An Ordinary Woman*  
Helgi, Ursula. *Stones from the River*  
Hoff, Benjamin. *The Tao of Pooh*  
Homer. *The Iliad*  
"I Think I'll Go Home and Lie Very Still"  
*I Samuel 17 (David and Goliath)*  
Kenko. "Essays in Idleness"  
Knowles, John. *A Separate Peace*  
*The Koran* ("The Opening," "Power," "Daybreak")  
Lee, Harper. *To Kill a Mockingbird*  
Machiavelli, Niccolo. *The Prince*  
*Mahabharata* ("Sibi")  
Markandaya, Kamala. *Nectar in a Sieve*  
Marvki, Toshi. *Hiroshima, No Pika*  
Mason, Bobbie Ann. *In Country*  
Mathabane, M. *Kaffic Boy: The Story of a Black Youth's Coming of Age in Apartheid South Africa*  
Milosz, Czeslaw. *A Song on the End of the World*  
*New Testament parables*  
Ovid. *Metamorphosis*  
Paton, Alan. *Cry, The Beloved Country*  
Peck, Richard. *Priscilla and the Wimp*

## World Studies Student Resources

Plato. *The Apology*  
Poe, Edgar. "The Tell Tale Heart"  
Remarque, Eric. *All Quiet on The Western Front*  
*The Rig Veda*  
Rojas, Manuel. "The Glass of Milk"  
Shakespeare, William. *Julius Caesar*  
Shakespeare, William. *The Taming of the Shrew*  
*The Siegfried Legend*  
*The Song of Roland*  
Sophocles. *Antigone*  
Sophocles. *Oedipus Rex*  
Steinbeck, John. *Of Mice and Men*  
Strasser, Todd. *On The Bridge*  
Strasser, Todd. *The Wave*  
Tacitus. *Annals*  
T'ao Ch'en. *Book of Songs*  
Thucydides. *History of the Peloponnesian*  
Tolstoy, Leo. *Death of Ivan Ilyich*  
Tolstoy, Leo. "How Much Land Does a Man Need?"  
*Upanishad*  
Virgil. *Aeneid*  
"The Voice of the Swallow, Flittering, Calls to Me"  
Well, Simone. *What's So Amazing About Grace*  
Whitman, Walt. *Leaves of Grass*  
Wiesel, Elie. *Night*  
Wordsworth, William. "Ode: Intimations on Immortality"  
"Your Love, Dear Man, Is As Lovely to Me"  
Zeami. *The Deserted Crone*

**High School English/Language Arts and Social Studies  
Interdisciplinary American Studies**

**NOTES**

## **High School English/Language Arts and Social Studies Interdisciplinary American Studies**

**Content Areas:** English III, U.S. History, Government

**Prerequisite:** English II

**Credit:** 2 (one English, one Social Studies)

### **Course Overview:**

This American studies course is a chronological, interdisciplinary survey of the history, government, culture, sociology, literature, art, music, and of America. Students study each historical and literary period, gaining a better perspective of the universal human condition and an understanding of citizens' responsibilities to society. Students build inquiry and communication skills, focusing on the development of written compositions, oral presentations, and projects. Using a variety of print and nonprint materials, students research and evaluate issues related to the development of American culture.

In order to award two credits for this American studies, all content for English III and the content for two social studies strands, government and U.S. history (Reconstruction to the present), must be included. Additional social studies content is included to help students develop an understanding of trends, attitudes, and literature from different periods of American history.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions, listed below guiding questions, are included to further focus student learning. Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the *Program of Studies*. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address *Program of Studies* content, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding and Essential Questions:**

**How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?**

- To what degree does the media shape our social values?

### **How have historical events influenced our understanding of modern America?**

- Why did Europeans assume superiority over Native Americans? What could Europeans have learned had they been open to another culture?
- Do the economic, social, and political issues that split the country during the Civil War still exist today?
- What impact did Industrialization have on America?
- Was the Civil Rights Movement a success?

## **High School English/Language Arts and Social Studies Interdisciplinary American Studies**

- How did the social and economic changes of the Roaring Twenties create tensions in America?

### **How has our government reflected the needs and concerns of its people throughout history?**

- How did the formation of our government reflect the values of its citizenry?
- Do our Constitution and Bill of Rights serve the people?
- How do democratic principles of government and political thought, which are reflected in American culture, shape an American identity?
- How has the role of the United States in world affairs changed?
- Should the federal government provide more assistance to special groups?
- Did the U.S. make appropriate decisions during WW II?
- Should the United States be praised or condemned for its efforts in the Cold War?

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Historical Perspective (2.20)</b></p> <p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Birth of a Nation (Beginnings to 1800)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p>Why did Europeans assume superiority over Native Americans? What could Europeans have learned had they been open to another culture?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• read and analyze literature.</li> <li>• use writing-to-learn activities.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop personal and literary writing.</li> <li>• locate and analyze sources to obtain information.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• explore how people and cultures have contributed to the American experience.</li> <li>• analyze origins and consequences of stereotyping, prejudice, and discrimination.</li> <li>• examine impact of research, science, and technology on historical events.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• compare creation stories from Native American and European cultures. Construct Venn diagrams to illustrate similarities and differences in structure and culture. Write their own creation stories.</li><li>• research technological advances of Native Americans at the time of European Exploration and compare them to those of the Europeans. Create collages, bulletin boards, or multimedia presentations comparing technologies.</li><li>• analyze excerpts from Columbus’s journal. Identify his attitudes toward natives he encountered. Write new journal entries from the perspective of a more open-minded Columbus describing what he saw and people encountered.</li></ul>	



## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading (1.2)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p><b>Inquiry (1.1)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Historical Perspective (2.20)</b></p> <p><b>Government and Civics (2.14, 2.15)</b></p> <p><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Birth of a Nation (Beginnings to 1800)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>How did the formation of our government reflect the values of its citizenry?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• read and analyze literature.</li> <li>• apply analytical reading skills to make connections.</li> <li>• use writing-to-learn activities.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> <li>• develop personal and literary writing.</li> <li>• use effective speaking skills.</li> <li>• paraphrase and adapt information for specific purposes.</li> <li>• use a variety of multimedia tools to enhance presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• analyze different forms of government.</li> <li>• understand the foundations of democracy in the U.S.</li> <li>• understand the changing role of government.</li> <li>• understand the purposes of various forms of government.</li> <li>• analyze the importance of civic rights and responsibilities.</li> <li>• understand democratic principles.</li> <li>• analyze how cultures and belief systems are reflected in governments.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• trace the political development of the U.S.</li> <li>• examine rights and responsibilities of individuals.</li> </ul> <p style="text-align: right;"><i>(Continued on page 154)</i></p>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• prepare and deliver speeches to prospective citizens that explain democracy as America’s form of government and distinguish it from other forms of government. Incorporate visual aids (<i>WP-Transactive</i>).</li> <li>• research the role of the church as a form of government (theocracy) in colonial America. Read sermons of the time period (e.g., “Sinners in the Hands of an Angry God”). Use sermon as a model to write persuasive speeches about time period issues.</li> <li>• write analytical essays to compare persuasive techniques (e.g., tone, propaganda, bias) in <i>Crisis #1</i> and “Speech in the Virginia Convention.”</li> <li>• research how writing, art, and music incited revolutionary fervor. Create multimedia presentations to demonstrate findings.</li> <li>• compare colonial America’s and today’s court systems. Read <i>The Crucible</i>, then analyze court documents from Salem witch trials and documents from contemporary court cases. Compare findings in graphic organizers. Explain why the accused were singled out in the Salem witch trials. Write opening arguments defense attorneys would deliver today if the same trial were to occur. Remember to include references to the Bill of Rights.</li> <li>• examine economic impacts of the American Revolution on colonial society by creating cause-and-effect charts.</li> <li>• examine how the <i>Crisis #1</i> and “Speech in the Virginia Convention” led to America’s <i>Declaration of Independence</i>. Participate in class discussions to analyze impact. Use “Speech in the Virginia Convention” as a model to compose and deliver persuasive speeches on controversial topics (<i>WP-Transactive</i>).</li> <li>• examine connections between democracy as a political philosophy and capitalism as an economic philosophy. Explain how the introduction of capitalist economic systems are affecting communist systems around the world. Role-play an economic summit between government financial officers from a capitalist country and a communist country.</li> <li>• analyze parts of the <i>Declaration of Independence</i>. Explain democratic principles present in the document. Write personal essays, explaining their beliefs about personal independence (<i>WP-Personal</i>).</li> <li>• investigate motives (e.g., economic, religious) for founding American colonies. Compare forms of government that resulted from those motives. Create persuasive pieces convincing Europeans to follow them to the colonies.</li> </ul>	<p>Reanna understands information presented visually; however, she sometimes has difficulty with understanding vocabulary. She uses an interpreter if information is presented orally. Directions for the speech is provided in writing to Reanna with the date due, components required, and rubric. The written information is reviewed with her by her interpreter to ensure that she understands the vocabulary and the directions (<i>Types of extensions: resources and materials, level of support</i>).</p> <p>A cluster of students read and analyzed Franklin’s <i>Autobiography</i>, Paine’s <i>Common Sense</i>, <i>The Red Badge of Courage</i>, and <i>The Crucible</i> in their eighth-grade honors level social studies class. These students are outstanding writers and prepare entries for the Veterans of Foreign Wars Voice of Democracy Program Content or the Emerson History Essay Contest (<i>Types of extensions: purpose and appropriateness, participation, order of learning, motivation, demonstration of knowledge</i>).</p>

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Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading (1.2)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Historical Perspective (2.20)</b></p> <p><b>Government and Civics (2.14, 2.15)</b></p> <p><b>Culture and Society (2.16, 2.17)</b></p>	<p><i>(Continued from page 152)</i></p> <p style="text-align: center;"><b>Birth of a Nation (Beginnings to 1800)</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>How did the formation of our government reflect the values of its citizenry?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• read and analyze literature.</li> <li>• apply analytical reading skills to make connections.</li> <li>• use writing-to-learn activities.</li> <li>• use writing-to-demonstrate-learning strategies.</li> </ul> <p>• develop transactive writing.</p> <p>• develop personal and literary writing.</p> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• analyze different forms of government.</li> <li>• understand the foundations of democracy in the U.S.</li> <li>• understand the changing role of government.</li> <li>• understand the purposes of various forms of government.</li> <li>• analyze the importance of civic rights and responsibilities.</li> <li>• understand democratic principles.</li> <li>• analyze how cultures and belief systems are reflected in governments.</li> <li>• recognize how the United States government has changed over time to meet the needs of the society.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• trace the political development of the U.S.</li> <li>• examine rights and responsibilities of individuals.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• evaluate who was included in the drafting of the <i>Declaration of Independence</i>. Identify the audience and groups excluded. Read and analyze letters Abigail Adams wrote to her husband, John. Explain her perspective concerning the inclusion of women’s voices in the Declaration and later the Constitution.</li><li>• research issues advocated by first ladies throughout American history. Create illustrated time lines that demonstrate how issues have evolved over time.</li><li>• videotape newscasts representative of the Revolutionary period reflecting values and issues of the time.</li></ul> <p><i>Technology suggestion: Use computer simulations to explore Revolutionary issues.</i></p>	

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Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p style="text-align: center;"><b>Inquiry (1.1)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Historical Perspective (2.20)</b></p> <p style="text-align: center;"><b>Economics (2.18)</b></p> <p style="text-align: center;"><b>Government and Civics (2.14, 2.15)</b></p> <p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Birth of a Nation (Beginnings to 1800)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>Do our Constitution and Bill of Rights serve the people?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• apply analytical reading skills to make connections.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• use effective speaking skills and techniques.</li> <li>• locate and analyze sources.</li> <li>• collaborate to solve problems.</li> <li>• use multimedia tools to enhance presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• understand the changing role of government.</li> <li>• understand the purposes of various forms of government.</li> <li>• recognize the establishment of government by the U.S. Constitution.</li> <li>• analyze the importance of civic rights and responsibilities.</li> <li>• analyze events to determine how the Constitution allows change over time.</li> <li>• understand democratic principles.</li> <li>• analyze how cultures and belief systems are reflected in governments.</li> <li>• recognize different forms of government.</li> <li>• analyze different forms of government.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• trace the political development of the U.S.</li> <li>• recognize how the Constitution has impacted society.</li> <li>• analyze roles of political parties.</li> <li>• examine rights and responsibilities of individuals.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• identify purposes of various constitutions (e.g., U.S., KY, club, Native American) and analyze their impact on their constituents. Examine how cultures and beliefs are reflected in constitutions. Respond to open-response questions about how constitutions reflect cultures. Work in cooperative groups to compose model constitutions.</li> <li>• analyze U.S. Constitution to explain its impact on American society. Participate in mock trials to demonstrate understanding of the judicial process as outlined in the Constitution. Use Watergate scandal to illustrate recursive nature of “checks and balances” in federal government. Create flow chart to demonstrate analysis.</li> <li>• evaluate how Constitution prevents one group from usurping rights of others. Identify real-life situations in which the Constitution protected individual rights (e.g., Watergate). Write editorials about current individual rights, issues, using historical cases as basis for arguments (<i>WP-Transactive</i>).</li> <li>• research motives of the writers of the Constitution. List groups (e.g., political parties, minorities) who were not included in the process or protected by the document. Explain changes made later in the document to include these groups. Make cause-and-effect charts to explain how and why these amendments came about.</li> </ul> <p><i>Technology suggestion: Create photo essays illustrating how the Constitution affects their everyday lives.</i></p>	<p>Karen and Dan, who are interested in pursuing law careers, interview a university law professor with expertise in constitutional law to find out about career preparation and opportunities in the field. They also interview the law professor about resources useful in investigating issues of their choice. They present their findings to their class and other students in the school interested in a law career (<i>Types of extensions: purpose and appropriateness, complexity, level of support, magnitude, resources and materials, motivation, demonstration of knowledge, environment, procedures and routines</i>).</p>

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Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/Listening/Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Geography</b> (2.19)</p> <p><b>Government and Civics</b> (2.14, 2.15)</p> <p><b>Culture and Society</b> (2.16, 2.17)</p>	<p style="text-align: center;"><b>What is an American?</b> (1790 - 1860)</p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>How do democratic principles of government and political thought, which are reflected in American culture, shape an American identity?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• read and analyze literature.</li> <li>• respond critically to literary genres.</li> <li>• apply knowledge of literary terms and concepts.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• develop transactive writing.</li> <li>• critique own and others' works.</li> <li>• locate and analyze sources.</li> <li>• use effective speaking skills and techniques.</li> <li>• develop personal and literary writing.</li> <li>• use multimedia tools to enhance presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• analyze the importance of civic rights and responsibilities.</li> <li>• understand how government interacts with cultures.</li> <li>• examine how governments establish social institutions.</li> <li>• analyze how cultures and belief systems are reflected in governments.</li> <li>• analyze how cultures and belief systems are reflected in governments.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• understand physical and human characteristics of regions.</li> <li>• analyze roles of political parties and civic participation.</li> <li>• recognize the roles of social institutions.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create mini-museum displays for school or community libraries depicting how America’s identity emerged and is reflected by American writers and artists (e.g., Irving, Longfellow, Poe, Whitman, Audubon).</li> </ul> <p><i>Technology suggestions: Create video documentaries using still pictures, music, and voice-over that explain how the five themes of geography (location, place, region, movement, relationships) helped to shape American identity. Broadcast documentaries on community access channel.</i></p> <ul style="list-style-type: none"> <li>• read and analyze selections written by American Transcendentalists (e.g., Fuller, Emerson, Thoreau). Compare their themes to alternative American viewpoints. Create songs or poems that illustrate these themes.</li> <li>• read, listen to, and view American Romantic art (e.g., literature, paintings, music). Identify Romantic characteristics (e.g., love of nature, individualism, emotion over reason) of each piece. Create collages or posters that illustrate these themes in other ways.</li> <li>• research significance of early social reform efforts (e.g., schools, hospitals, prisons). Compare early efforts to today’s efforts. Compose editorials to support or refute implementation of one of these institutions (<i>WP-Transactive</i>).</li> <li>• read and analyze literary selections of the Anti-Transcendentalists (e.g., Hawthorne, Melville). Compare beliefs of the Anti-Transcendentalists with Transcendentalists in relation to man’s role in society. Record findings in graphic organizers. Use knowledge of literary devices and techniques to compose articles for school literary magazines that analyze Transcendental or Anti-Transcendental literary selections (<i>WP-Transactive</i>).</li> <li>• create annotated time lines that trace development of political parties in America and identify their major beliefs. Explain in annotations how political parties affected government policies.</li> <li>• read and analyze poetry of the Fireside poets (e.g., Longfellow, Lowell, Holmes, Whittier). Perform taped or live dramatic readings that convey poets’ meanings.</li> <li>• research founders of the women’s rights movement (e.g., Anthony, Stanton, Blackwell). Compare Declaration of Sentiments from the 1848 Seneca Falls Convention to Declaration of Independence of 1776. Write editorials or news articles comparing demands of women at the 1848 convention to those of women today (<i>WP-Transactive</i>).</li> <li>• read the poem “I too... .” Explain what it means to be American according to Hughes. Write their own poems about what it means to be American (<i>WP-Literary</i>).</li> </ul>	<p>Since Jackie’s car accident, she struggles with reading fluency problems, short-term memory loss, and ability to integrate information. In the assignment to examine alternatives in American political thought expressed by American Transcendentalists, Jackie reads only one author, identifies her version of political thought, and has extended time on the reading assignment. Highlighting important information while reading is taught before the assignment so she can identify examples of political thought (<i>Types of extensions: magnitude, time, order of learning, procedures and routine, resources and materials</i>).</p>



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Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Speaking/Listening/Observing</b> (1.3, 1.4, 1.12)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Geography</b> (2.19)</p> <p style="text-align: center;"><b>Economics</b> (2.18)</p> <p style="text-align: center;"><b>Culture and Society</b> (2.16, 2.17)</p>	<p style="text-align: center;"><b>A Nation Divided (1848-1876)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>Do the economic, social, and political issues that split the country during the Civil War still exist today?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• read and analyze literature.</li> <li>• apply analytical reading skills to make connections.</li> <li>• use writing-to-learn activities.</li> <li>• tailor use of conventions.</li> <li>• critique own and others' works.</li> <li>• use effective speaking skills and techniques.</li> <li>• use multimedia tools to enhance presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• understand the role of the U.S. government in the economy.</li> <li>• understand government regulation of resources.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• use tools to explore interpretive nature of history.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• recognize the impact of geography and natural resources.</li> <li>• examine the economic transformation of the U.S.</li> <li>• explore contributions of peoples and cultures.</li> <li>• understand resource needs and trade relationships.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• prepare charts and graphs that explore economic, social, and political differences between the North and South prior to the Civil War.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestions:</b> Use spreadsheet programs to chart or graph economic, social, and political differences.</i></p> <ul style="list-style-type: none"> <li>• explore how economies of the North and South changed after the Civil War. Create annotated maps of each region showing natural resources, economic centers, types of industries, goods and services provided, and distribution routes before and after the war. Write time-period news articles explaining the distribution of resources among regions (<i>WP-Transactive</i>). Explore economic differences that exist today. Investigate how local, state, and national governments influence economic changes.</li> <li>• read and analyze diaries (e.g., Mary Chestnut), journals, historical documents, and slave narratives (e.g., Sojourner Truth, Frederick Douglas) from the Civil War period. Compare how various groups experienced the Civil War period. Use selections as models to write personal pieces, tailoring use of language and style to reflect chosen models.</li> <li>• read and analyze impact of the 13th, 14th, and 15th Amendments of the Constitution on American economics, politics, and culture. Evaluate whether those amendments improved the position of African-Americans in this country. Debate impact of these Amendments on minorities.</li> <li>• compare writings of Frederick Douglas, Sojourner Truth, James Baldwin, Langston Hughes, Alice Walker, and Ralph Ellison and discuss experiences of African-Americans in this country since the Civil War. Write commentaries or editorials defending or refuting the statement that life is significantly better for African-Americans since the Civil War (<i>WP-Transactive</i>). Critique their own and others' work.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Create multimedia presentations that reflect human experiences during the Civil War.</i></p> <ul style="list-style-type: none"> <li>• read and analyze <i>The Red Badge of Courage</i>. Create collages or mobiles that depict students' interpretation of the theme of courage.</li> </ul>	<p>Alex uses Braille to read and Braille-n-speak to take notes. In preparation for any class involving visuals (e.g., reading, charts, diagrams), the teachers will make prior arrangements to have a Braille copy provided. Alex will use a Braille-n-speak to take notes (<i>Types of extensions: procedures and routines, resources and materials</i>).</p>

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/Listening/Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Historical Perspective</b> (2.20)</p> <p><b>Geography</b> (2.19)</p> <p><b>Economics</b> (2.18)</p> <p><b>Government and Civics</b> (2.14, 2.15)</p> <p><b>Culture and Society</b> (2.16, 2.17)</p>	<p><b>The American Dream (1890 - 1920)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>What impact did Industrialization have on America?</p>	<p><b>Students will English III</b></p> <ul style="list-style-type: none"> <li>• read and analyze literature.</li> <li>• apply knowledge of literary terms and concepts.</li> <li>• apply analytical reading skills to make connections.</li> <li>• use writing-to-learn activities.</li> <li>• develop transactive writing.</li> <li>• develop personal and literary writing.</li> <li>• paraphrase and summarize information.</li> <li>• collaborate to solve problems.</li> <li>• use multimedia tools to enhance presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• analyze how Constitution has allowed government to change.</li> <li>• understand democratic principles.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• use tools to explore interpretive nature of history.</li> <li>• examine significant eras of U.S. History to develop chronological understanding.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• examine the impact of advances in research, science, and technology.</li> <li>• understand physical and human characteristics of regions.</li> <li>• analyze the location and distribution of human features.</li> <li>• understand human settlements and patterns of movement.</li> <li>• examine the impact of immigration and movement.</li> <li>• examine the economic transformation of the U.S.</li> <li>• analyze the relationships among business, labor, and government.</li> <li>• illustrate how technology has changed the economy.</li> <li>• explore contributions of peoples and cultures.</li> <li>• examine cooperation, conflict and competition.</li> <li>• analyze stereotyping, prejudice, and discrimination.</li> </ul> <p style="text-align: right;"><i>(Continued on page 164)</i></p>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• examine immigration trends (e.g., reasons for immigration and movement of immigrants, Westward Expansion, rural to urban) and their impact on cultural, political, and economic developments. Summarize findings in notes. Research current information immigration data and predict future trends. Write proposals to President and Congress incorporating findings.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Use computer simulations to explore immigration issues.</i></p> <ul style="list-style-type: none"> <li>• read and analyze late 19<sup>th</sup> century literature by American authors (e.g., Twain, Bierce, London, Cather). Identify characteristics of Realism and Naturalism. Use selections as models to write realistic and/or naturalistic short stories incorporating appropriate literary elements (<i>WP-Literary</i>).</li> <li>• examine how artists reflected their times in art. Read and/or view <i>Our Town</i>, then view art of George Bellows and Grant Wood. Read or listen to poetry of Robinson and Masters. Write reviews for class or school magazines (<i>WP-Transactive</i>).</li> <li>• explore immigration issues of the late 1800s and early 1900s. Debate whether U.S. is a melting pot or salad bowl. Create visual displays (e.g., collages, mobiles, bulletin boards) depicting America as one or the other.</li> <li>• read literature from immigrants’ perspectives. Write personal narratives about their own experiences with new or different situations (<i>WP-Personal</i>).</li> <li>• read historical documents (e.g., 19th Amendment, speeches, songs) and works by American writers (e.g., Hurston, Hughes, Welty, O’Connor) to identify women’s and African- American issues. Participate in round-table discussions comparing themes of minority groups.</li> <li>• read and analyze imagist poetry by Americans (e.g., Pound, Williams, Stein). Identify themes. Create or choose illustrations to accompany these poems in anthologies.</li> </ul>	

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading (1.2)</b></p> <p><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p><b>Writing (1.11)</b></p> <p><b>Speaking/Listening/Observing (1.3, 1.4, 1.12)</b></p> <p><b>Technology as Communication (1.16)</b></p> <p><b>Historical Perspective (2.20)</b></p> <p><b>Geography (2.19)</b></p> <p><b>Economics (2.18)</b></p> <p><b>Culture and Society (2.16, 2.17)</b></p>	<p><i>(Continued from page 162)</i></p> <p><b>The American Dream (1890 - 1920)</b></p> <p><b>How do the humanities (e.g., literature, art, music, dance, drama, philosophy) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>What impact did Industrialization have on America?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• read and analyze literature.</li> <li>• apply knowledge of literary terms and concepts.</li> <li>• apply analytical reading skills to make connections.</li> <li>• use writing-to-learn activities.</li> <li>• develop transactive writing.</li> <li>• develop personal and literary writing.</li> <li>• paraphrase and summarize information.</li> <li>• collaborate to solve problems.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• analyze how Constitution has allowed government to change.</li> <li>• understand democratic principles.</li> <li>• analyze how the United States government deals with questions of production, distribution, and consumption of goods and services.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• use tools to explore interpretive nature of history.</li> <li>• examine significant eras of U.S. History to develop chronological understanding.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• examine the impact of advances in research, science, and technology.</li> <li>• understand physical and human characteristics of regions.</li> <li>• analyze the location and distribution of human features.</li> <li>• understand human settlements and patterns of movement.</li> <li>• examine the impact of immigration and movement.</li> <li>• examine the economic transformation of the U.S.</li> <li>• analyze the relationships among business, labor, and government.</li> <li>• illustrate how technology has changed the economy.</li> <li>• examine cooperation, conflict and competition.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create recruitment brochures for labor unions explaining how labor reform has improved the workplace.</li> <li>• examine the impact of inventors (e.g., Bell, Edison, Wright Brothers, Ford) and their technological inventions on economic and cultural development. Create catalogs complete with descriptions and illustrations of technological inventions of the time.</li> </ul> <p style="padding-left: 40px;"><i><b>Technology suggestion:</b> Use desktop publishing programs to design magazine layouts and set up art exhibit reflecting effects of Industrialization on America.</i></p> <ul style="list-style-type: none"> <li>• investigate effects of big business on the quality of life in America (e.g., class system, environment). Compare effects of Industrialization on life in America to life in its neighbors and territories. Role-play meetings between management and labor.</li> <li>• investigate impact of government on big business by reading and analyzing antitrust acts (e.g., Sherman, Clayton) and political cartoons. Write summaries of each act and interpretations of cartoons in learning logs.</li> <li>• identify technological advances made in WW I weaponry (e.g., submarines, machine guns, tanks, airplanes). Conduct debates on whether or not these were true advances.</li> </ul>	<p>Matt, Jan, Teri, and Nabil need opportunities to apply their advanced level reasoning ability to real and complex problems. Using multiple research strategies and resources, they prepare and present a formal debate on whether the U.S. government should be involved in the Microsoft controversy (<i>Types of extensions: purpose, appropriateness, complexity, motivation, resources and materials, demonstration of knowledge, time, magnitude, level of support, participation, procedures and routines</i>).</p>

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Historical Perspective</b> (2.20)</p> <p><b>Economics</b> (2.18)</p> <p><b>Culture and Society</b> (2.16, 2.17)</p>	<p><b>The American Dream (1890 - 1920)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>How has the role of the United States in world affairs changed?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• apply analytical reading skills to make connections.</li> <li>• analyze print and nonprint reading materials.</li> <li>• use writing-to-demonstrate-learning.</li> <li>• develop transactive writing.</li> <li>• develop literary writing.</li> <li>• use effective speaking skills.</li> <li>• locate and analyze sources.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• understand how governments interact with cultures.</li> <li>• analyze how cultures and belief systems are reflected in governments.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• examine significant eras of U.S. history to develop chronological understanding.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• trace the changing role of the U.S. in world affairs.</li> <li>• examine the economic transformation of the U.S.</li> <li>• trace the economic development of the U.S.</li> <li>• explore contributions of peoples and cultures.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• read and analyze Wilson’s Fourteen Points and the Treaty of Versailles. Create newspapers of that time with articles about how the Treaty of Versailles impacted America, its allies, and defeated countries. Include explanations on why the Treaty was written the way it was.</li><li>• research isolationist policies of the U.S. government. Explain in learning logs how isolationist views were reflected in government and by American writers (e.g., Eliot, Pound, Hemingway). Compare views in graphic organizers.</li><li>• analyze propaganda posters of WW I. Explain and compare the goals of each country as reflected in the posters. Prepare and deliver speeches that are either in favor of or against the war movement and create propaganda posters supporting their views.</li><li>• examine how the economies of the U.S. and other countries around the world were affected by WW I. Create lists of products that were available before, during, and after the war. Compare costs. Identify possible economic impacts and personal conflicts that resulted from product development. Write short stories from an “I was there” perspective. Build story plots around one of the identified economic impacts (<i>WP-Literary</i>).</li><li>• do cost analysis of WW I. Reflect on whether the achieved goals were worth the costs.</li></ul>	



## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading (1.2)</b></p> <p style="text-align: center;"><b>Arts and Humanities (2.22, 2.24, 2.25)</b></p> <p style="text-align: center;"><b>Writing (1.11)</b></p> <p style="text-align: center;"><b>Speaking/ Listening/ Observing (1.3, 1.4, 1.12)</b></p> <p style="text-align: center;"><b>Technology as Communication (1.16)</b></p> <p style="text-align: center;"><b>Historical Perspective (2.20)</b></p> <p style="text-align: center;"><b>Economics (2.18)</b></p> <p style="text-align: center;"><b>Culture and Society (2.16, 2.17)</b></p>	<p style="text-align: center;"><b>Defense of Democracy (1910 - 1945)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>How did the social and economic changes of the Roaring Twenties create tensions in America?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• apply analytical reading skills to make connections.</li> <li>• apply critical listening/observing skills.</li> <li>• use writing-to-demonstrate learning strategies.</li> <li>• analyze print and nonprint reading material.</li> <li>• develop transactive writing.</li> <li>• use multimedia tools to enhance multimedia presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• understand how governments interact with cultures.</li> <li>• recognize various regions in the United States and understand how their local and state governments may operate differently because of regional needs and differences.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• examine significant eras of U.S. history to develop chronological understanding.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• examine the economic transformation of the U.S.</li> <li>• trace the economic development of the U.S.</li> <li>• analyze the relationships among business, labor, and government.</li> <li>• explore contributions of peoples and cultures.</li> <li>• analyze stereotyping, prejudice, and discrimination.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• trace contributions and impact of the Harlem Renaissance by listening to jazz, reading poetry, and viewing pieces of visual art by African-American artists (e.g., Ellington, Holiday, Fitzgerald, Huston, Lawrence, Bearden). Create museum display highlighting Harlem Renaissance artists. Prepare supporting materials (e.g., scripts, brochures).</li> </ul> <p><i><b>Technology suggestions:</b> Create multimedia presentations that incorporate dramatic reading, visual arts, voice-over, and music.</i></p> <ul style="list-style-type: none"> <li>• read and analyze <i>The Great Gatsby</i>, identifying similarities between the novel and culture and society of the 20s. Identify various stereotypes and prejudices shown in the novel. Write letters to characters suggesting changes in their attitudes.</li> <li>• identify cultural, social, political, and economic implications of the 1929 stock market crash. Explore relationship among business, labor, and government. Role-play business leaders, investors, and laborers explaining how the crash affected them. Create T-charts to show regional differences.</li> <li>• read and analyze <i>Grapes of Wrath</i>. Draw parallels between narrative and historical events. View photographs by Dorothea Lange. Create scripts to accompany her photographs about the Depression.</li> <li>• research intolerance of the 1920s (e.g., Palmer Raids, evolution of the Klan, Scopes' Trial) and explain how events created tensions. Write journal entries as observers of events.</li> <li>• research the 19th Amendment. Compare ideas of those in favor of or opposed to women's suffrage. Discuss implications of 19th Amendment. Write prediction essays of what today's society would be like without the 19th Amendment.</li> </ul> <p><i><b>Technology suggestion:</b> Create media campaigns in favor of 19th Amendment.</i></p> <ul style="list-style-type: none"> <li>• research the Prohibition Amendment. Explore political, economic, and social motives for its passage. Explain social impacts of the amendment on America. Survey people today on opinions toward cigarettes. Create cartoons comparing attitudes. Write editorials for or against banning cigarettes (<i>WP-Transactive</i>).</li> </ul>	

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Speaking/Listening/Observing</b> (1.3, 1.4, 1.12)</p> <p style="text-align: center;"><b>Inquiry</b> (1.1)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Geography</b> (2.19)</p> <p style="text-align: center;"><b>Economics</b> (2.18)</p> <p style="text-align: center;"><b>Culture and Society</b> (2.16, 2.17)</p>	<p style="text-align: center;"><b>Defense of Democracy (1910 - 1945)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>Should the federal government provide more assistance to special groups?</p>	<p><b>Students will English III</b></p> <ul style="list-style-type: none"> <li>• locate and analyze sources.</li> <li>• apply analytical reading skills to make connections.</li> <li>• apply critical listening/observing skills.</li> <li>• use effective speaking skills and techniques.</li> <li>• use multimedia tools to enhance presentations.</li> <li>• evaluate appropriateness of material.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• understand how governments interact with cultures.</li> <li>• understand how cultures and belief systems are reflected in governments.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• examine significant eras of U.S. history to develop chronological understanding.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• trace the changing role of the U.S. in world affairs.</li> <li>• examine the economic transformation of the U.S.</li> <li>• trace the economic development of the U.S.</li> <li>• understand how factors influence settlements and patterns of movements.</li> <li>• understand how changing resource needs and trade relationships produce conflict and cooperation.</li> <li>• explore how modifications of the physical environment have impacted life in the United States.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use Internet and electronic archives to access writings developed by environmental groups (e.g., Sierra Club, Audubon Society) to prepare and conduct debates related to issues of conservation and preservation. Include government, special interest groups, and individual perspectives. Evaluate reliability of documents produced by special interest groups. Consider technological advances (e.g., Tennessee Valley Authority projects, Hoover Dam) and their environmental impacts.</li> <li>• listen to recordings of F. D. Roosevelt’s “Fireside chats”, identifying ideas on how to bring the country out of the Great Depression. Critique speeches in learning logs.</li> <li>• read works by American writers (e.g., Faulkner, Warren, Jarrell) of the era. Identify universal themes of personal relationships. Research art and music of the era that could accompany each selection. Prepare multimedia presentations that connect different artistic media.</li> <li>• compare programs of the New Deal. Chart relief, recovery, and reform programs. Evaluate success of programs. Write critiques of programs still in existence today.</li> <li>• compare goals and intent of welfare programs of Depression era with today’s welfare programs. Research and explain new welfare reforms. Write editorials to local papers concerning welfare reform and its impact on their communities (<i>WP-Transactive</i>).</li> <li>• explore how the Great Depression was a worldwide phenomenon. Compare life in the U.S. during the Depression to life in other countries. Create collages comparing conditions.</li> </ul>	

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p style="text-align: center;"><b>Reading</b> (1.2)</p> <p style="text-align: center;"><b>Arts and Humanities</b> (2.22, 2.24, 2.25)</p> <p style="text-align: center;"><b>Writing</b> (1.11)</p> <p style="text-align: center;"><b>Inquiry</b> (1.1)</p> <p style="text-align: center;"><b>Technology as Communication</b> (1.16)</p> <p style="text-align: center;"><b>Historical Perspective</b> (2.20)</p> <p style="text-align: center;"><b>Economics</b> (2.18)</p> <p style="text-align: center;"><b>Culture and Society</b> (2.16, 2.17)</p>	<p style="text-align: center;"><b>Defense of Democracy</b> (1910 - 1945)</p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>Did the U.S. make appropriate decisions during WW II?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• respond critically to literary genres.</li> <li>• interpret vocabulary.</li> <li>• develop transactive writing.</li> <li>• develop literary writing.</li> <li>• locate and analyze sources.</li> <li>• evaluate appropriateness of materials accessed through technology.</li> <li>• use multimedia tools for presentation.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• recognize different forms of government over time.</li> <li>• understand the changing role of government.</li> <li>• understand how cultures and belief systems are reflected in governments.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• examine significant eras of U.S. History to develop chronological understanding.</li> <li>• examine impact of individuals and groups.</li> <li>• analyze the social, political, and economic characteristics of various eras.</li> <li>• trace the changing role of the U.S. in world affairs.</li> <li>• explore contributions of peoples and cultures.</li> <li>• use tools to explore interpretive nature of history.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research relationships between philosophies and leadership styles of various world leaders (e.g., Hitler, Stalin, Churchill, Roosevelt, Truman, Mussolini). Prepare inquiry papers with source documentation on philosophies and leadership style of leaders.</li> <li>• critique persuasive and propaganda techniques used by periodicals to influence American society. Use these techniques to prepare bulletin boards or propaganda posters.</li> <li>• research internment camp conditions in the U.S. during WW II. Write journal entries as if they were someone living in the camp. Incorporate colloquial language. Write editorials arguing for or against America’s use of internment camps or research accounts of Holocaust victims and survivors.</li> <li>• critically assess advice Truman received on whether or not to use the atomic bomb. Use graphic organizers to record findings. Use findings to role-play mock trial of Truman.</li> <li>• examine objective and subjective reporting of WW II through literature (e.g., <i>Hiroshima</i>), poetry, and primary sources (e.g., oral histories, journals). Create children’s storybooks based on WW II events.</li> <li>• create multimedia presentations depicting their experiences.</li> </ul> <p style="margin-left: 2em;"><i><b>Technology suggestion:</b> Use desktop publishing programs to create books.</i></p> <ul style="list-style-type: none"> <li>• research contributions of women during WW II. Evaluate their roles in the war effort. Write articles for popular women’s magazines explaining how changes brought about during the war have affected the lives of women today (<i>WP-Transactive</i>).</li> <li>• read Truman’s Executive Order desegregating the military. Explain factors that prompted the order and the impact on the U.S. military. Evaluate and debate impact of the decision.</li> <li>• compare gains of D-Day invasion with losses. Respond to open-response questions, analyzing benefits and losses.</li> </ul>	<p>Angie, Billie, Gary, Brad, Justin, and Sarah address their leadership styles by analyzing the personality, attitudes, and decision-making patterns of Hilter, Stalin, Churchill, Roosevelt, Truman and Mussolini, respectively. They assume the roles of their assigned leaders and participate in round-table discussions. They respond to questions and issues, presenting opinions congruent with documented data. Tyrone, who exhibits strong leadership characteristics, serves as moderator (<i>Types of extensions: purpose and appropriateness, complexity, motivation, magnitude, participation, resources and materials, demonstration of knowledge, level of support, procedures and routines</i>).</p>

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
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## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research causes of the Cold War. Develop time line of Cold War events.</li> <li>• examine United States' need to be superior by focusing on the former U.S.S.R.1 vs. U.S. Arms and Space Races. Investigate how these races disguised true battles of ideologies. Explore how the Arms and Space Races affected world economies. Create parallel time lines depicting U.S. and U.S.S.R. climb to superpower status.</li> <li>• examine United States involvement in Korea and Vietnam by developing outlines of key military events, and policies of the Korean conflict. Write editorials relating lessons learned from U.S. involvement in Korea and Vietnam conflict to current foreign policies.</li> <li>• research factors that led to McCarthy hearings. Compare to earlier witch hunts. Create mock trials based on hysteria and anticommunist sentiments of McCarthy Era.</li> <li>• research views of different segments of American society during Vietnam War. Investigate different positions taken by governments around the world. Examine U.S. government policies as they reflect differing views. Listen to protest music from Vietnam War. Discuss attitudes of anti-war movement as reflected in songs. Write songs or poems protesting current government policy.</li> <li>• explore leadership role of U.S. in bringing down communism. Identify impact of each U.S. President since Eisenhower on fall of communism. Select one President who made significant strides toward eliminating communism in Soviet Union. Write articles focusing on the selected President and his contributions toward eliminating communism. Publish articles in class magazines to be placed in school media centers (<i>WP-Transactive</i>).</li> <li>• evaluate role of United States in post-Cold War world. Research and trace relations between former Soviet Union, China, and United States. Outline and compare foreign policies of United States concerning these nations. Debate usefulness of giving countries Most Favored Nation trading status.</li> </ul>	



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Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
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## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• research development and current practices of National Association for the Advancement of Colored People (NAACP). Create multimedia presentations to illustrate history, philosophy, and initiatives of the organization. Compare what others say about organization to what the organization says. Write journal reflections on source credibility.</li> <li>• research leaders of the Civic Rights Movement (e.g., Martin Luther King Jr., Malcolm X, Rosa Parks). Summarize and paraphrase research to prepare biographical sketches to use as a quick-facts reference file.</li> <li>• read and listen to speeches from Martin Luther King Jr., and Malcolm X. Analyze effectiveness of persuasive techniques. Compare power of written and oral persuasion.</li> <li>• research Civil Rights Act of 1964. Create posters to depict atmosphere of the time. Debate merits of results of the legislation.</li> <li>• discuss effectiveness of nonviolent confrontation during early Civil Rights Movement. Compare confrontations to those that occurred in other parts of the world (e.g., India). Write feature articles comparing styles and results of conflicts and lessons for future protests (<i>WP-Transactive</i>).</li> </ul> <p style="text-align: center;"><i><b>Technology suggestion:</b> Use film clips to create presentation on the Civil Rights Movement.</i></p> <ul style="list-style-type: none"> <li>• analyze <i>A Raisin in the Sun</i> to examine society’s treatment of minorities. Write TV scripts based on similar themes in contemporary society.</li> <li>• read <i>Neighbors</i>. Evaluate local schools’ compliance with the intent of <i>Brown v. Board of Education</i> decision of 1954. Prepare presentation to local board of education evaluating programs and recommending any needed changes.</li> <li>• read “In the Kitchen” from <i>Colored People: A Memoir</i> and “Shades of Black.” Compare authors’ perspectives on race. Write dialogues between the two authors illustrating differing viewpoints.</li> <li>• research affirmative action legislation and evaluate its impact on African-Americans. Discuss how current negative attitudes toward affirmative action may affect opportunities for minorities. Write letters to appropriate national leaders expressing their opinions on affirmative action programs. Select language to suit audience (<i>WP-Transactive</i>).</li> <li>• select modern writings (e.g., novels, short stories, magazine articles) to read for additional insight into world community.</li> </ul>	

## American Studies

Academic Expectations	Guiding and Essential Questions	Correlations to the Program of Studies
<p><b>Reading</b> (1.2)</p> <p><b>Writing</b> (1.11)</p> <p><b>Speaking/ Listening/ Observing</b> (1.3, 1.4, 1.12)</p> <p><b>Inquiry</b> (1.1)</p> <p><b>Technology as Communication</b> (1.16)</p> <p><b>Historical Perspective</b> (2.20)</p> <p><b>Geography</b> (2.19)</p> <p><b>Economics</b> (2.18)</p> <p><b>Government and Civics</b> (2.14, 2.15)</p>	<p style="text-align: center;"><b>Faces of America (1945 - Present)</b></p> <p><b>How do forms of expression and communication (e.g., literature, art, music, dance, drama, media) reflect the human experience of a given period of American history?</b></p> <p><b>How have historical events influenced our understanding of modern America?</b></p> <p><b>How has our government reflected the needs and concerns of its people throughout history?</b></p> <p>To what degree does the media shape our social values?</p>	<p><b>Students will</b></p> <p><b>English III</b></p> <ul style="list-style-type: none"> <li>• analyze print and nonprint reading materials.</li> <li>• apply analytical reading skills to make connections.</li> <li>• develop transactive writing.</li> <li>• interpret vocabulary.</li> <li>• use writing-to-demonstrate-learning strategies.</li> <li>• use effective speaking skills.</li> <li>• apply critical listening/observing skills.</li> <li>• locate and analyze appropriate sources.</li> <li>• use criteria to evaluate appropriateness of material.</li> <li>• use multimedia tools to enhance presentations.</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>• recognize how the U.S. government has changed to meet needs.</li> <li>• analyze how technology influenced the operation of government.</li> </ul> <p><b>U.S. History</b></p> <ul style="list-style-type: none"> <li>• use tools to explore interpretive nature of history.</li> <li>• examine impact of individuals and groups.</li> <li>• examine the impact of advances in research, science, and technology.</li> <li>• illustrate how technology has changed the economy.</li> <li>• examine rights and responsibilities of individuals.</li> </ul>

## American Studies

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• view news footage of Vietnam War. Discuss how this footage helped fuel the anti-war movement at home. Write entries for class essay.</li> <li>• research Kennedy/Nixon debates. Write how-to guides for political candidates for successful TV debates. Use historical references to document guidelines. Prepare video teaching guides to demonstrate principles.</li> <li>• view printed ads for products targeted for teenagers. Survey teens to discover reasons they purchase particular brands or products. Discuss strategies advertisers use to entice teenagers to buy their products. Discuss ramifications of using these techniques. Write articles for school newspaper analyzing purchasing habits of young people (<i>WP-Transactive</i>).</li> <li>• identify candidates or issues and create political campaigns with brochures, posters, and commercials. Track campaign results including how people learned of candidates. Discuss how media coverage can affect outcome of campaigns. Write proposals for other candidates' use of various media outlets, based on success of this campaign.</li> <li>• research media coverage of government reform initiatives (e.g., health care, education, welfare). Debate outcome of initiatives if media had provided different or more balanced views.</li> <li>• explore use of photographs, videos, and newsclips to influence public sentiments about global events (e.g., Bosnian War, conflict in Somalia, natural catastrophes in China). Cover local events and alter visual images. Survey viewers about perceptions. Compare responses in graphic organizers or learning logs. Write textbook chapter on choosing visuals for news coverage for student journalists.</li> <li>• explore how economies have been affected by globalization and computerization of stock markets. Create flow chart of stock from issue to international purchase. Attach glossary of technical language.</li> </ul>	

**NOTES**

## American Studies Student Resources

Benet, Stephen. "We Aren't Superstitious"  
Chopin, Kate. *The Awakening*  
Crane, Stephen. *The Red Badge of Courage*  
Crane, Stephen. *War Is Kind*  
*Crisis #1*  
Cooper, James. *Leatherstocking Tales*  
*Declaration of Independence*  
Earle, Alice Morse. *Life in Colonial New England*  
Edwards, Jonathan. "Sinners in the Hands of an Angry God"  
Fitzgerald, F. Scott. *The Great Gatsby*  
Fleischer, Jane. *Pontiac: Chief of the Ottawas*  
Fleischer, Jane. *Tecumseh: Shawnee War Chief*  
Franklin, Benjamin. *The Autobiography*  
Franklin, Benjamin. *Poor Richard's Almanac*  
Frazier, Charles. *Cold Mountain*  
Gates, Jr., Henry Louis. *Colored People: A Memior*  
Hamsberry, Lorraine. *A Raisin in the Sun*  
Hawthorne, Nathaniel. *The House of Seven Gables*  
Hawthorne, Nathaniel. "The Minister's Black Veil"  
Hawthorne, Nathaniel. *The Scarlet Letter*  
Hawthorne, Nathaniel. "Young Goodman Brown"  
Hemingway, Ernest. *The Old Man and the Sea*  
Henry, Patrick. "Speech to the Virginia Convention"  
Hersey, John, *Hiroshima*  
Hughes, Lanston. "I too..."  
Hunt, Irene. *Across Five Aprils*  
Irving, Washington. "The Devil and Tom Walker"  
Jassem, Kate. *Chief Joseph: Leader of Destiny*  
Joseph, Chief. "I Will Fight No More"  
Kantor, MacKinley. *Andersonville*  
Kennedy, John F. *A Nation of Immigrants*  
Lincoln, Abraham. "Gettysburg Address"  
Mibrane, Mary. "Shades of Black"  
Michener, James. *Hawaii*  
Miller, Arthur. *The Crucible*  
Mitchell, Margaret. *Gone with the Wind*  
Oliver, Diane. "Neighbors"  
Poe, Edgar. "The Bells"  
Poe, Edgar. "Annabelle Lee"  
Poe, Edgar, "The Raven"  
Santoli, Al. *Everything We Had: An Oral History of the Vietnam War by Thirty-Three American Soldiers*  
Seattle, Chief. "This We Know"  
Steinbeck, John. *The Grapes of Wrath*  
Steinbeck, John. *Of Mice and Men*  
Stowe, Harriet. *Uncle Tom's Cabin*  
Tunis, Edsin. *Indians*  
Twain, Mark. *Adventures of Huckleberry Finn*

## **Social Studies Glossary**

### **Geography**

**Absolute location:** The location of a point on Earth's surface that can be expressed by a grid reference (e.g., latitude and longitude).

**Accessibility:** The relative ease with which places can be reached from other places.

**Acculturation:** The process of adopting traits of cultural groups.

**Aerial photograph:** A photograph of part of Earth's surface usually taken from airplanes.

**Aquifer:** An underground permeable rock layer within which water is stored and can flow and from which water can be extracted for use at the surface.

**Artifacts:** The material manifestations of a culture such as tools, clothing, and foods.

**Assimilation:** The acceptance, by one culture group or community, of cultural traits normally associated with another.

**Biomes:** Very large ecosystems made up of specific plant and animal communities interacting with the physical environment (e.g., tropical rain forest).

**Cardinal Directions:** The four main points of the compass - north, east, west, and south.

**Cartographer:** A person who designs and creates maps and other geographic representations.

**Cultural landscape:** The human imprint on the physical environment; the humanized landscape as created or modified by people.

**Demography:** The study of population statistics, changes, and trends.

**Developed country:** an area of the world that is technologically advanced, highly urbanized, and wealthy.

**Diffusion:** The spread of people, ideas, technology, and products among places.

**Elevation:** The height of points or places above sea level.

**Formal region:** A region defined by the uniformity of certain characteristics such as precipitation, landforms, subculture, or type of economic production.

**Globe:** A scale model of Earth that correctly represents area, relative size and shape of physical features, distance between points, and true compass directions.

**Grid:** A pattern of lines on charts or maps, such as those representing latitude and longitude, that help determine absolute location.

## **Social Studies Glossary**

### **Geography**

**Hemisphere:** Half a sphere. Cartographers and geographers divide Earth into the Northern and Southern Hemispheres at the Equator, and the Eastern and Western hemispheres at the prime meridian.

**Interdependence:** People relying on each other in different places or in the same place for ideas, goods, and/or services.

**Intermediate directions:** The points of the compass that fall between cardinal directions (e.g., NE, SW, NW).

**Landform:** The shape, form, or nature of specific physical features of Earth's surface (e.g., hill, mountain, plateau).

**Latitude:** Angular distance, measured in degrees, north or south from the equator.

**Legend:** An explanatory description or key to features on maps or charts.

**Location:** The position of a point on Earth's surface expressed by means of grids (absolute location) or in relation (relative location) to the position of other places.

**Longitude:** The position of a point on Earth's surface expressed as its angular distance, east to west, from the prime meridian to 180 degrees.

**Map:** A graphic representation of a portion of Earth that is usually drawn to scale on a flat surface.

**Mental map:** A map that represents mental images people have of areas, including knowledge of features and spatial relationships. Mental maps are also called cognitive maps.

**Migration:** The act of people moving from one place to another with the intent of staying at the destination permanently or for a relatively long period of time.

**Nonrenewable resource:** A finite resource that cannot be replaced once it is used (e.g., petroleum, minerals).

**Physical feature:** An aspect of places or areas that derive from the physical environment.

**Places:** Locations having distinctive characteristics that give them meaning and character and distinguish them from other locations.

**Pull factors:** In migration theory, the social, political, economic, and environmental attractions of new areas that draw people away from their previous locations.

**Push factors:** In migration theory, the social, political, economic, and environmental forces that drive people from their previous locations to search for new ones.



## **Social Studies Glossary**

### **Geography**

**Region:** An area with one or more common characteristics or features that give it a measure of homogeneity and make it different from surrounding areas.

**Relative location:** The location of places or regions in relation to other places or regions (e.g., northwest of downtown Louisville, downstream from the dam).

**Renewable Resource:** A resource that can be regenerated if used carefully (e.g., timber).

**Resource:** An aspect of the physical environment that people value and use to meet needs for fuel, food, industrial products, or something else of value.

**Spatial:** Pertains to space on Earth's surface.

**Thematic map:** A map representing specific spatial distributions, themes, or topics (e.g., population density, cattle production, climates of the world).

**Topographic map:** A detailed map illustrating selected physical and human features of places.

**Topography:** The shape of Earth's surface.

## **Social Studies Glossary**

### **Government and Civics**

**Amendment (constitutional):** Changes in, or additions to, a constitution.

**Anarchy:** Absence of formal legal order; also the social context in which legitimate political authority does not exist.

**Authority:** Right to control or direct the actions of others, legitimized by law, morality, custom, or consent.

**Bureaucracy:** Organizations that implement government policies.

**Cabinet:** Secretaries or chief administrators of the major departments of the federal government.

**Checks and Balances:** Constitutional mechanisms that authorize each branch of government to share powers with the other branches and thereby check their activities.

**Citizen:** Member of a political society who therefore owes allegiance to and is entitled to protection by and from the government.

**Civil law:** Body of law that deals with private rights of individuals as distinguished from criminal law.

**Civil liberties:** Areas of personal freedom with which governments are constrained from interfering.

**Civil rights:** Protections and privileges given to all U.S. citizens by the Constitution, and Bill of Rights.

**Class system:** System in which members of social classes are prevented from moving into other classes.

**Common good:** Benefit or interest of politically organized societies as a whole.

**Common law:** Body of unwritten law developed in England from judicial decisions based on customs and earlier judicial decisions.

**Concurrent powers:** Powers that may be exercised by both the federal government and state governments (e.g., taxes, borrowing money).

**Criminal law:** Branch of law that deals with disputes or actions involving criminal penalties.

## **Social Studies Glossary**

### **Government and Civics**

**Democracy:** Form of government in which political control is exercised by all people, either directly or through elected representatives.

**Divine Right:** Theory of government that holds that a monarch receives the right to rule directly from God and not from the people.

**Executive Power:** Power of the president to implement and enforce laws.

**Federalists:** Advocates of a strong national government and supporters of adoption of the U.S. Constitution.

**Feudalism:** Political and economic system in which kings or queens shared power with the nobility who required services from the common people in return for allowing them to use the noble's land.

**Founders or Founding Fathers:** People who played important roles in the development of the national government of the United States.

**Framers:** Delegates to the Philadelphia Convention held in 1787 and those who wrote and ratified the Bill of Rights.

**Freedom of Assembly:** Freedom of people to gather together in public.

**Freedom of Expression:** Refers to the freedoms of speech, press, assembly, and petition that are protected by the First Amendment.

**Fundamental Rights:** Rights considered to be essential.

**General Welfare:** Good of society as a whole; common or public good.

**Government:** Institutions and procedures through which territories and their people are ruled.

**Higher Law:** When describing legal systems, refers to the superiority of one set of laws over another. For example, the U.S. Constitution is a higher law than any federal or state law.

**Judicial Power:** Power to manage conflicts about the interpretation and application of the law.

## **Social Studies Glossary**

### **Government and Civics**

**Judicial Review:** Doctrine that permits the federal courts to declare unconstitutional, and thus null and void, acts of the Congress, the executive, and the states.

**Legislative Power:** Power to make laws.

**Majority Rule:** Rule by more than half of those participating in a decision.

**Monarchy:** Government in which political power is exercised by a single ruler under the claim of divine or hereditary right.

**Natural Law (or law of nature):** As used by natural rights philosophers, a moral rule discovered by the use of reason that everyone should obey at all times and places.

**Political party:** Any group, however loosely organized, that seeks to elect government officials under a given label.

**Preamble:** Introduction to a formal document that explains its purpose.

**Private Domain:** Areas of an individual's life that are not subject to governmental control.

**Representative Democracy:** Form of government in which power is held by the people and exercised indirectly through elected representatives who make decisions.

**Republican Government:** System of government in which power is held by the voters and is exercised by elected representatives responsible for promoting the common welfare.

**Rule of Law:** Principle that every member of a society, even rulers, must follow the law.

**Separation of Powers:** Division of governmental power among several institutions that must cooperate in decision making.

**Social contract:** Agreement among all the people in a society to give up part of their freedom to a government in return for protection of their natural rights. A theory developed by Locke to explain the origin of legitimate government.

**Sovereignty:** Ultimate, supreme power in a state; in the United States, sovereignty rests with the people.

**Suffrage:** Right to vote.

**Treaty:** Formal agreement between sovereign nations to create or restrict rights and responsibilities.

**“Unalienable” Rights:** Fundamental rights of the people that may not be taken away.

## **Social Studies Glossary**

### **Government and Civics**

**Unenumerated Rights:** Rights that are not specifically listed in the Constitution or the Bill of Rights, but which have been recognized and protected by the courts.

**Veto:** Constitutional power of the president to refuse to sign bills passed by Congress, thereby preventing them from becoming law. The president's veto may be overridden by a two-thirds vote of both the Senate and House of Representatives.

## Social Studies Glossary

### History

**Artifacts:** The material manifestations of a culture such as tools, clothing, and foods.

**Cultural assimilation:** Process by which people of one culture merge into and become indistinguishable from the people of another culture.

**Cultural diffusion:** Process by which people of one culture spread to other places.

**Data:** Facts or figures from which inferences can be made.

**Economic characteristics:** Characteristics of different economies, people, and places relating to the economy.

**Eras:** An event or date marking the beginning of important or new periods of history.

**Ethnocentrism:** The belief in the inherent superiority of one's own group and culture; a tendency to view all other groups or cultures in terms of one's own.

**Historical perspective:** Historical perspective involves different interpretations by those who have experienced, observed, or studied various aspects of history. These interpretations may reflect intended or unintended bias. Sometimes thinking about historical events and persons will change as new information is discovered or revealed.

**Human characteristics:** Human activities help shape Earth's surface, human settlements, and structures. Human characteristics of places also includes language, religion, political systems, economic systems, population distribution, and quality of life.

**Interdependence:** People relying on each other in different places or in the same place for ideas, goods, and services.

**Multiple causation:** A term used in history to suggest that most events are the result of several factors (multiple causes).

**Natural resources:** Any physical material that constitutes part of the Earth and which people need and value.

**Physical characteristics:** Physical characteristics of places include climate, landforms, soils, hydrology, vegetation, and animal life.

**Primary sources:** First-hand, original information such as letters, autobiographies, interviews with people who experienced events first-hand, or diary entries.

## **Social Studies Glossary**

### **History**

**Secondary sources:** Information derived from or about primary sources such as encyclopedias, documentary films, biographies, history books, or interviews with historians.

**Social Institutions:** Forms and organizations of society designed to meet the needs of different people and groups. The five most common social institutions are family, education, government, religion, and economics.

## **Social Studies Glossary**

### **Economics**

**Absolute Advantage:** This occurs when one nation can produce items with fewer resources or more efficiently than another nation can.

**Aggregate Demand:** The total quantity of goods and services people are willing and able to buy at different possible price levels.

**Aggregate Supply:** The total quantity of goods and services produced at different possible price levels.

**Assembly Line:** A manufacturing system in which products are assembled by moving them from one worker or machine to another.

**Asset:** Something of value owned by firms, households, or individuals; what companies own after debts are paid.

**Balance of Trade:** The difference between the export and import of merchandise.

**Barter:** A money-less exchange of goods or services.

**Budget:** A financial plan that summarizes income and expenditures over a period of time.

**Capital Resources:** Buildings, tools, and machines people use to create goods and services; one of the factors of production.

**Capitalism:** Another term for market economy or free enterprise system. In Capitalist economies, private individuals own productive resources.

**Command Economy:** A system in which the basic economic questions of what to produce, how to produce, and who should receive what is produced are generally answered by the government.

**Comparative Advantage:** The ability to produce items at lower opportunity costs.

**Competition:** The rivalry among buyers and sellers in the purchase and sale of resources and products.

**Consumers:** People who buy goods and/or services for personal use.

**Credit:** A debt system enabling people to acquire goods and/or services before fully paying for them.

**Currency:** Paper money and coins issued by the federal government.

**Deficit:** When expenditures exceed income.

**Deflation:** The opposite of inflation; a period of falling prices when the purchasing power of the dollar is rising.



## **Social Studies Glossary**

### **Economics**

**Demand:** The quantities of particular goods or services consumers are willing and able to buy at different possible prices at a particular time.

**Economic Growth:** Increases in an economy's total output over a period of time.

**Economics:** The study of people producing and exchanging to get the goods and services they want.

**Economy:** The system that results from choices we make as consumers, workers, business owners and managers, and government officials.

**Entrepreneur:** A person who takes risks to create new products or to develop better ways of operating businesses.

**Entrepreneurship:** Imaginative, innovative thinking, and management skills needed to start and operate businesses.

**Exchange rate:** The price of one currency in terms of another.

**Factors of Production:** The natural, human, and capital resources required to produce any good or service. These factors are sometimes called land, labor, and capital.

**Federal Reserve System:** The nation's banking system.

**Free Enterprise:** Another term for market economy or Capitalism.

**Goods:** Physical products businesses produce; tangible items of value.

**Gross Domestic Product (GDP):** The market value of goods and services produced within a country during a given time.

**Gross national product (GNP):** A measure of the nation's total output of goods and services produced within a country during a given time.

**Human resources:** Labor or the physical and mental efforts people use to create goods and services.

**Import:** A good or service purchased from a seller in another country.

**Incentive:** A reason for doing something. In market economies, profit, interest, wages, and rents provide economic incentives.

**Inflation:** A period of rising prices when the purchasing power of the dollar is falling.

**Interest:** Payment for using someone else's money; income from allowing someone else to use one's capital.

## **Social Studies Glossary**

### **Economics**

**Investment:** The purchase of capital resources used to produce goods and services.

**Labor:** Human resources or the physical and mental efforts people use to create goods and services.

**Macroeconomics:** The study of the economy as a whole.

**Market:** Whenever and wherever people voluntarily make exchanges with one another.

**Market Economy:** Using markets as the primary means of organizing and coordinating production; also called Capitalism or Free Enterprise.

**Microeconomics:** The study of individual consumers and businesses.

**Mixed Economy:** An economic system in which the basic economic questions are answered by a mixture of market, command, and traditional approaches.

**Money:** Anything that is generally accepted as payment for goods and services; legal tender.

**Monopoly:** A market in which there is only one seller.

**Nationalization:** Government takeover of a privately owned industry.

**Natural Resources:** A natural resource is any physical material that constitutes part of the Earth and which people need and value.

**Opportunity Cost:** The best alternative given up when making choices.

**Profit:** What remains after the costs of doing business have been met; the difference between a firm's total revenues and its total costs.

**Recession:** Two quarters of a fiscal year with a decline of real gross domestic product.

**Revenue:** Sales income.

**Scarcity:** The basic economic problem of unlimited wants and limited resources to satisfy those wants.

**Specialization:** Production of a limited variety of products by businesses, regions, or countries.

**Standard of Living:** A measure of the amount of goods and services available to citizens.

## **Social Studies Glossary**

### **Economics**

**Supply:** The various amounts of something a producer is willing and able to sell at different possible prices at a particular time.

**Tariff:** A tax or duty on imports.

**Tax:** A payment to the government.

**Trade barrier:** A measure designed to slow or prevent trading between countries.

**Trade deficit:** Occurs when imports are greater than exports.

**Trade-off:** A choice that involves giving up some of one thing to have more of another.

**Traditional Economy:** A system in which the basic economic questions are generally answered by traditions and customs.

**Unemployment Rate:** The percentage of those in the labor force, over the age of 16, actively seeking jobs but unable to find work.

**Wages:** The earnings of workers paid by the hour or unit of production.

**Wealth:** The total value of one's tangible assets.

## **Social Studies Glossary**

### **Culture and Society**

**Acculturation:** The process of adopting traits of cultural groups.

**Cultural assimilation:** Process by which people of one culture merge into and become indistinguishable from people of another culture.

**Cultural diffusion:** Process by which people of one culture spread to other places.

**Cultural landscape:** The human imprint on the physical environment; the humanized landscape as created or modified by people.

**Discrimination:** Treatment or consideration of a person or thing based on the group, class, or category to which that person or thing belongs rather than on individual merit.

**Ethnocentrism:** The belief in the inherent superiority of one's own group and culture; a tendency to view all other groups or cultures in terms of one's own.

**Interdependence:** People relying on each other in different places or in the same place for ideas, goods, and services.

**Prejudice:** Unreasonable feelings, opinions, or attitudes regarding racial, national, or religious groups.

**Social Institutions:** Forms and organizations of society designed to meet the needs of different people and groups. The five most common social institutions are family, education, government, religion, and economics.

**Stereotype:** An oversimplified view, usually negative, of people or group.

## Social Studies Teacher Resources Programs

### *Geography Bee*

Kate Fischer, Coordinator, 2819 Eleanor Avenue, Louisville, KY 40205, (502) 454-4733.

### *Kentucky Mock Trial Competition*

Chris Cecil, Coordinator, Administrative Office of the Courts, Frankfort, KY 40601.

### *Kentucky United Nations Assembly (KUNA)*

State YMCA, 402 Broadway, Frankfort, KY 40601.

### *The Stock Market Game*

EconomicsAmerica in Kentucky, 203 East Jefferson Street, Louisville, KY 40202.

## Publications: Books

### National Standards For Social Studies

#### **Integrated Social Studies K-12:**

National Council for the Social Studies. *Expectations of Excellence*. Washington, DC: Author, 1994.

3501 Newark St., NW

Washington, DC 20016

Telephone: 1-800-683-0812

Cost: \$15.00 plus \$4.00 shipping and handling

Web site: [www.ncss.org](http://www.ncss.org)

#### **Geography Standards:**

National Geographic Research and Exploration. *Geography for Life*. Indiana, PA: Author, 1994.

16A Leonard Hall, IUP

Indiana, PA 15705

Telephone: 412-357-6290 Fax: 412-357-7708

Cost: \$7.00 plus shipping and handling

Web site: [www.ncge.org](http://www.ncge.org)

#### **History Standards:**

National Center for History in the Schools. *Expanding Children's World in Time and Space (K-4)*.

University of California: Author, 1994.

1100 Glendon Ave., Suite 927

Box 951588

Los Angeles, CA 90095-1588

Telephone: 310-206-0788

Cost: \$15.95 per copy plus \$5.00 shipping and handling

## **Social Studies Teacher Resources**

National Center for History in the Schools. *U.S. History: Exploring the American Experience (5-12)*. University of California: Author, 1994.

1100 Glendon Ave., Suite 927

Box 951588

Los Angeles, CA 90095-1588

Telephone: 310-206-0788

Cost: \$15.95 per copy plus \$5.00 shipping and handling

National Center for History in the Schools. *World History: Exploring Paths to the Present (5-12)*. University of California: Author, 1994.

1100 Glendon Ave., Suite 927

Box 951588

Los Angeles, CA 90095-1588

Telephone: 310-206-0788

Cost: \$15.95 per copy plus \$5.00 shipping and handling

### **Economics Standards:**

National Council on Economic Education. *Voluntary National Content Standards in Economics*. New York: Author, 1997.

Contact: National Council on Economic Education

Telephone: 1-800-338-1192 Fax: 212-730-1793

Cost: \$19.95

Web site: [www.economicamerica.org](http://www.economicamerica.org)

### **Civics/Government Standards:**

Contact: Center for Civic Education

5146 Calabasas, CA 91302-1467

Telephone: 818-591-9321

Cost: \$13.20 (includes shipping and handling)

Web site: [www.civiced.org](http://www.civiced.org)

## **Publications: Periodicals**

### *Multicultural Review*

Greenwood Publishing Group, Inc., 88 Post Road West, P.O. Box 5007,  
Westport, CT 06881-5007

### *Social Education*

National Council for the Social Studies, 3501 Newark Street NW,  
Washington, D.C. 20016, (202)-966-7840

### *Social Studies and the Young Learner*

National Council for the Social Studies 3501 Newark Street NW,  
Washington, D.C. 20016, (202)-966-7840

### *Southern Social Studies Journal*

Kentucky Council for the Social Studies, PO Box 1604,  
Frankfort, KY 40601

## Social Studies Teacher Resources Professional Organizations

### Kentucky Council for the Social Studies

Marsha Hurt, President  
Livingston County Schools  
PO Box 219  
Smithland, KY 42081  
Phone: 502-928-2111 FAX: 502-928-2112  
E-Mail: mhurt@livingston.k12.ky.us  
Membership: \$10.00 per year (includes newsletter and Southern Social Studies Journal)  
To join KCSS, send a check for \$10.00 to KCSS, P.O. Box 1604, Frankfort, KY 40602.

### EconomicsAmerica in Kentucky

(Formerly known as the Kentucky Council for Economic Education)

Dr. Jack Morgan, Executive Director  
Jan Mester, Associate Executive Director  
203 E. Jefferson Street  
Louisville, KY 40202  
(office) 1-800-IDO-ECON (fax) 502-584-2106  
E-Mail: info@econky.win.net  
(Contact above address to receive newsletter and information on other opportunities)

### Kentucky Geographic Alliance (KGA)

Dr. Keith Mountain, Coordinator  
University of Louisville  
Department of Geography  
Louisville, KY 40292  
502-852-6844 (office) 502-852-4560 (fax)  
E-Mail: KRMOUN01@ulkyvm.louisville.edu  
(KGA publishes a free newsletter. For information, contact Dr. Mountain)

### Kentucky Association for Teachers of History (KATH)

Kevin Simons  
Sayre School  
194 N. Limestone St.  
Lexington, KY 40507  
Telephone: 606-254-1361 Fax: 606-231-0508  
Membership: \$25.00 per year (includes annual conference)

### National Council for the Social Studies (NCSS)

3501 Newark Street, NW  
Washington, DC 20016  
202-966-7840  
202-966-2061 (fax)  
Web site: [www.ncss.org](http://www.ncss.org)

For additional resources, see the Kentucky Department of Education's Web Site at [www.kde.state.ky.us](http://www.kde.state.ky.us) and the *State Multiple List of Textbooks and Instructional Materials, Adoption Groups I - VI, Grades Primary through 12*.

# **ELECTIVE CONTENT AREAS**



# **World Languages**



## High School World Languages

### Program Overview:

The guiding principles for world language instruction are five interwoven goals that are based on Kentucky academic expectations and the national standards for world languages. The five national goals are to

- **communicate** in languages other than English;
- gain knowledge and understanding of other **cultures**;
- **connect** with and acquire information from other disciplines;
- develop insight into the nature of language and culture through **comparisons**; and
- participate in multilingual **communities** at home and around the world.

According to Kentucky's learner goals and academic expectations, all students must demonstrate competency in foreign languages. The five goals of communication, culture, connections, comparisons, and communities support this vision and reinforce the following academic expectations:

- 2.17 students interact effectively and work cooperatively with the diverse ethnic and cultural groups of our nation and world;
- 2.27 students complete tasks, make presentations, and create models that demonstrate awareness of the diversity of forms, structures, and concepts across languages and how they may interrelate; and
- 2.28 students understand and communicate in a second language.

### Content Charts:

The world languages content charts outline minimum content and process skills expected for all languages, both modern and classical. These charts guide curriculum development. They are a resource that can have a far reaching impact on Kentucky students. The charts provide consistent, minimum content for students studying world languages and help ensure that all world language students have opportunities to learn at high levels.

The content charts are organized around the five world language national goals and Kentucky's academic expectations. Under each goal, content knowledge and process skills are outlined according to stages of student knowledge and ability. Knowledge and abilities acquired by students at the entry stage are built upon and extended in subsequent stages. Thus, what was learned in one stage forms the foundation for what will be learned in the next. During the entry stage, students have no proficiency in foreign language skills. The next stages represent increasing proficiency in the four language skills of listening, speaking, reading, and writing. As students proceed through the stages, they become more fluent, internalizing the language until they achieve mastery at the exit stage.

## High School World Languages

### GOAL ONE: Communicate in Languages Other Than English

*Standard 1.1 Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• express basic needs, basic courtesies, states of being, likes and dislikes, and agreements and disagreements.</li> <li>• respond to one-on-one interactions, simple questions, and simple requests.</li> <li>• ask simple questions and make simple requests.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• elaborate on needs.</li> <li>• interact in basic survival situations.</li> <li>• incorporate appropriate gestures into conversations.</li> <li>• create simple descriptions within contexts.</li> <li>• exchange information with peers and others.</li> <li>• give and follow directions in familiar contexts.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• qualify likes and dislikes.</li> <li>• support opinions.</li> <li>• provide and request clarifications.</li> <li>• use different ways to express the same idea (circumlocution).</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• create detailed oral descriptions within contexts.</li> <li>• ask and respond to open-ended questions in target language.</li> <li>• give and follow directions in unfamiliar situations.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• attempt to persuade others through exchanging personal feelings and ideas.</li> <li>• express individual perspectives and defend opinions.</li> <li>• negotiate compromises (e.g., curfews) with families and friends.</li> <li>• initiate, sustain, and conclude conversations on a variety of topics.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• manage unforeseen circumstances and complicated situations.</li> <li>• converse using language and behaviors that are appropriate to particular settings.</li> <li>• collaborate to develop and propose solutions to problems.</li> <li>• use a variety of language strategies to convey meaning (e.g., short responses, pause fillers, circumlocution).</li> </ul>

## High School World Languages

*Standard 1.2 Students understand and interpret written and spoken language on a variety of topics.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• respond appropriately to directions, instructions, and commands.</li> <li>• make identifications based on oral and/or written descriptors.</li> <li>• read and respond to developmentally appropriate material.</li> <li>• demonstrate listening comprehension.</li> <li>• identify aural, visual, and contextual clues.</li> <li>• comprehend and respond to simple written communications (e.g., notes, invitations).</li> <li>• identify main ideas and key words in oral and print material.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• respond appropriately to series of directions, instructions, and commands.</li> <li>• derive meaning from selected authentic materials.</li> <li>• respond to language of persons sympathetic to second-language learners.</li> <li>• use aural, visual, and contextual clues to derive meaning.</li> <li>• comprehend language on familiar topics.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• respond appropriately to complex oral and/or written descriptors.</li> <li>• comprehend and respond to formal written communications (e.g., want ads, job applications).</li> <li>• identify main ideas and supporting details in print materials.</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• respond appropriately to directions, instructions, and commands intended for native speakers.</li> <li>• analyze information based on complex oral and/or written descriptors.</li> <li>• respond to language of native speakers who are not accustomed to communicating with second-language learners.</li> <li>• apply diverse strategies to derive meaning and detail from unfamiliar material (e.g., signs, magazines, guides, maps).</li> <li>• interpret and analyze main ideas and significant details from authentic materials (e.g., magazines, radio broadcasts) and literary samples.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• summarize or restate conversations.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• interpret and analyze cause and effect relationships and sequences in authentic materials.</li> <li>• respond appropriately to mood and implied meaning (e.g., sarcasm, humor, irony) of written communication.</li> <li>• research and synthesize information from a variety of authentic sources.</li> </ul>

## High School World Languages

*Standard 1.3 Students present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.*

Academic Expectations	Content/Process	
<p><b>Multiculturalism (2.17)</b></p> <p><b>Similarities and Differences Among Languages (2.27)</b></p> <p><b>Second Language (2.28)</b></p>	<b>Entry Stage</b>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• give directions, commands, and instructions.</li> <li>• give descriptions orally and in writing.</li> <li>• write personal communications (e.g., notes, letters, invitations).</li> <li>• summarize main ideas of selected authentic and/or contextualized material (e.g., weather reports, TV commercials).</li> <li>• present prepared material (e.g., poems, dialogues, songs) to audiences.</li> </ul>
	<b>Stage Two</b>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• produce informal written communications (e.g., letters to pen pals).</li> <li>• speak or write spontaneously.</li> </ul>
	<b>Stage Three</b>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explain processes based on prior knowledge and/or experiences.</li> <li>• give descriptions, using complex sentences, orally and/or in writing.</li> <li>• produce formal written communications (e.g., business letters).</li> <li>• interpret and present information from authentic material to audiences.</li> <li>• narrate present, past, and future events.</li> </ul>
	<b>Stage Four &amp; Stage Five</b>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• explain complex processes incorporating detailed instruction.</li> <li>• give descriptions, using complex, detailed paragraphs, orally and/or in writing.</li> <li>• produce written samples (e.g., editorials) to convey moods, imply meaning, and/or abstract ideas.</li> </ul>
	<b>Exit Stage</b>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• create analyses of authentic media (e.g., film) or literary samples and present to audiences.</li> <li>• formulate and defend positions on research topics.</li> <li>• elaborate on present, past, and future events.</li> </ul>

## High School World Languages

### GOAL TWO: Gain Knowledge and Understanding of Other Cultures

*Standard 2.1 Students demonstrate an understanding of the relationship between practices and perspectives of cultures studied.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify and react to cultural perspectives and practices in target cultures.</li> <li>• recognize and interpret language and behaviors (e.g., signs of greeting, body language) appropriate to target cultures.</li> <li>• identify some commonly held generalizations about target cultures.</li> <li>• identify social, geographic, and political factors that impact cultural practices.</li> <li>• identify common words, phrases, and idioms that reflect target cultures.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify differences in cultural practices among same-language cultures.</li> <li>• produce language and behaviors appropriate to target cultures.</li> <li>• discuss social (e.g., dating) and geographic (e.g., climate) factors that impact cultural practices.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• describe and analyze cultural characteristics and behaviors of everyday life.</li> <li>• analyze some commonly held generalizations about target cultures.</li> <li>• compare and contrast cultural practices among same-language cultures.</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• interpret cultural connotations of common words, phrases, and idioms.</li> <li>• analyze development of different cultural practices.</li> <li>• evaluate some commonly held generalizations about target cultures.</li> <li>• analyze social, geographic, and political factors that impact cultural practices.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• apply language and behaviors appropriate to target cultures in authentic situations.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• integrate culturally embedded words, phrases, and idioms into everyday communication.</li> </ul>

## High School World Languages

*Standard 2.2 Students demonstrate an understanding of the relationships between products and perspectives of culture studied.*

Academic Expectations		Content/Process
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify products (e.g., artwork) of target cultures.</li> <li>• identify expressive forms of target cultures.</li> <li>• identify objects, images, and symbols of target cultures.</li> <li>• recognize contributions of target cultures.</li> <li>• identify relationships between cultural perspectives and products as represented in target cultures’ expressive forms (e.g., art, literature, music, dance, drama).</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify and explain needs, behaviors, and beliefs as reflected in products and contributions of target cultures.</li> <li>• explain objects, images, and symbols of target cultures.</li> <li>• identify contributions of target cultures.</li> <li>• identify economic and social impact of products (e.g., music, soccer) on world markets.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• discuss and explain external factors that impact products and contributions.</li> <li>• describe expressive forms of culture (e.g., art, literature, music, dance, drama).</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• analyze relationships between cultural perspectives and products as represented in expressive forms (e.g., art, literature, music, dance, drama).</li> <li>• analyze contributions of diverse groups within target cultures.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use target language to describe cultures through their visual arts, architecture, literature, music, and drama.</li> <li>• evaluate expressive forms of cultures (e.g., art, literature, music, dance, drama).</li> <li>• analyze significance of objects, images, and symbols of cultures.</li> <li>• evaluate effects of cultures’ contributions on other societies.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• assess economic and social impacts of products on world market.</li> </ul>



## High School World Languages

### GOAL THREE: Connect with Other Disciplines and Acquire Information

*Standard 3.1 Students reinforce and further their knowledge of other disciplines through the target language.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify information and skills acquired from other disciplines and apply them in language classrooms to reinforce and further their knowledge.</li> <li>• identify, through target language resources, information for use in other disciplines.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• transfer and apply, within limited contexts, information and skills common to world language classrooms and other disciplines.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• analyze information gathered through target language resources for use in other disciplines.</li> </ul>
	<b>Stage Four &amp; Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• apply, within unfamiliar contexts, information and skills common to world language classrooms and other disciplines.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• locate target language resources and synthesize information for use in other disciplines.</li> </ul>

## High School World Languages

*Standard 3.2 Students acquire information and recognize distinctive viewpoints only available through target language and its cultures.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• extract information from sources intended for native speakers.</li> <li>• use authentic sources (e.g., newspapers, magazines, TV programs) to identify perspectives of target cultures.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• analyze and apply information from sources intended for native speakers.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• acquire and synthesize information from sources intended for native speakers.</li> </ul>
	<b>Stage Four &amp; Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use authentic sources to analyze perspectives of different cultures.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use authentic sources to synthesize perspectives of different cultures.</li> </ul>

## High School World Languages

### GOAL FOUR: Develop Insight into Own Language and Culture

*Standard 4.1 Students demonstrate understanding of nature of language through comparisons of language studied and their own.*

Academic Expectations	Content/Process	
<b>Multiculturalism</b> (2.17)  <b>Similarities and Differences Among Languages</b> (2.27)  <b>Second Language</b> (2.28)	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify sound patterns of target language and compare them to students' own languages.</li> <li>• identify structural patterns of target language and compare them to students' own languages.</li> <li>• identify idiomatic expressions of language.</li> <li>• identify linguistic connections among languages.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• apply, within limited contexts, sound patterns of target language.</li> <li>• apply, within limited contexts, structural patterns of target language.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• compare and contrast idiomatic expressions of target language and students' own languages.</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• explain changing nature of languages.</li> <li>• apply, in a variety of contexts, sound patterns of target language.</li> <li>• use knowledge of structural patterns in both target language and students' own languages.</li> <li>• describe how languages influence each other.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify and explain historical connections among languages.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use figurative expressions (e.g., poetry) of target language in correct contexts.</li> </ul>

## High School World Languages

*Standard 4.2 Students demonstrate understanding of concept of culture through comparisons of cultures studied and their own.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use evidence from authentic sources to identify similarities and differences between target cultures and students’ own cultures.</li> <li>• identify similar and different behavioral patterns between target cultures and students’ own cultures.</li> <li>• identify contributions of target cultures to students’ own cultures.</li> <li>• identify signs (e.g., road signs) and symbols of target cultures.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• compare and contrast target cultures and students’ own cultures using evidence from authentic sources.</li> <li>• compare behavioral patterns between target cultures and students’ own cultures.</li> <li>• identify impacts of contributions from target cultures on students’ own cultures.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• compare signs and symbols of other cultures and students’ own cultures.</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• analyze impacts of contributions from other cultures on students’ own cultures.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use signs of target cultures and students’ cultures appropriately.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use evidence from authentic sources to explain significance of similarities and differences between target cultures and students’ own cultures.</li> <li>• use knowledge of language and behavioral patterns to interact in a variety of social and cultural contexts (e.g., welcoming parties for exchange students) in target cultures and students’ own cultures.</li> <li>• analyze how cultural patterns of interaction are reflected in products (e.g., film, TV programs) of target cultures and students’ own cultures.</li> </ul>

## High School World Languages

### GOAL FIVE: Participate in Multilingual Communities at Home and Around the World

*Standard 5.1 Students use the language both within and beyond the school setting.*

Academic Expectations	Content/Process	
<b>Multiculturalism (2.17)</b>  <b>Similarities and Differences Among Languages (2.27)</b>  <b>Second Language (2.28)</b>	<b>Entry Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• identify target language in students’ lives.</li> <li>• share knowledge of target language with others.</li> <li>• locate connections with target cultures through technology, media, and authentic sources.</li> <li>• locate community resources to research target cultures.</li> </ul>
	<b>Stage Two</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• respond to target language encountered in students’ lives.</li> <li>• establish connections with target cultures through technology, media, and other authentic sources.</li> <li>• use community resources to research target cultures.</li> </ul>
	<b>Stage Three</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• maintain connections with target culture through technology, media, and authentic sources.</li> <li>• collaborate with community members.</li> </ul>
	<b>Stage Four</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• analyze interdependence that exists between students’ own cultures and the world.</li> </ul>
	<b>Stage Five</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use target language in real-life situations.</li> </ul>
	<b>Exit Stage</b>	<b>Students will</b> <ul style="list-style-type: none"> <li>• use authentic sources (e.g., newspapers, web sites) to analyze U.S. role in world as viewed by other cultures.</li> </ul>

## High School World Languages

### GOAL FIVE: Participate in Multilingual Communities at Home and Around the World

*Standard 5.2 Students show evidence of becoming lifelong learners by using the language for personal enjoyment and enrichment.*

Academic Expectations	Content/Process	
<p><b>Multiculturalism (2.17)</b></p> <p><b>Similarities and Differences Among Languages (2.27)</b></p> <p><b>Second Language (2.28)</b></p>	<p><b>Entry through Exit Stages</b></p>	<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• host foreign exchange students.</li> <li>• view films in target language.</li> <li>• read magazines, short stories, or novels in target language.</li> <li>• travel to target country.</li> <li>• use target language search engine or chat room.</li> <li>• perform community service with people from target culture.</li> </ul>

## **High School World Languages Beginning Language Course**

### **Course Overview:**

In this one-credit, beginning world language course, students gain a fundamental understanding of language functions, communicative tasks, and the culture of their target-language peers. Sample activities were designed to promote student learning of all entry-stage bullets outlined in the World Languages content chart. The activities are embedded within real-life contexts and address national standards. They can be used in any beginning language course including French, Spanish, German, or Russian.

Although seven units were designed to organize student learning, neither they nor suggested activities are comprehensive; that is they are starting points to plan instruction for content outlined in the world languages content chart and may be adjusted for individual student needs and school situations. The seven units include foods, shopping and communities, transportation, families, leisure activities, clothes, and daily routines.

Models are organized around guiding questions. Guiding questions (in bold print) direct teachers' choices of activities and are the questions students should be able to answer at the end of the course. Essential questions may be included to further focus student learning.

Pages of models are arranged in pairs. On the left-hand page of each pair are guiding and essential questions along with related academic expectations and correlations to the world languages content charts. Sample activities and sample extensions for diverse learners are found on the right-hand page. While sample activities address content from the world languages content chart, they are not intended to be comprehensive. Teachers still are responsible for planning instruction to meet the diverse needs of all their students.

### **Guiding Questions:**

- How can I effectively communicate using language?
- How are the target cultures' practices and products reflective of their life-styles and philosophies?
- How can I use foreign languages to enhance, reinforce, and further my knowledge of other disciplines?
- What is the nature of language? What is the concept of culture? How do languages and cultures compare?
- How can I use foreign languages to participate in multilingual communities?

## High School World Languages

Academic Expectations	Guiding and Essential Questions	Correlations to the World Languages Content Chart
<p style="text-align: center;"><b>Multiculturalism (2.17)</b></p> <p style="text-align: center;"><b>Similarities and Differences Among Languages (2.27)</b></p> <p style="text-align: center;"><b>Second Language (2.28)</b></p>	<p style="text-align: center;"><b>Unit: Foods</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>How can I use foreign languages to enhance, reinforce, and further my knowledge of other disciplines?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p><b>How can I use foreign languages to participate in multilingual communities?</b></p> <p>What are the practices and products associated with food in different cultures?</p>	<p><b>Students will</b></p> <p><b>Standard 1.1</b></p> <ul style="list-style-type: none"> <li>• express basic needs, basic courtesies, states of being, likes and dislikes, and agreements and disagreements.</li> <li>• respond to one-on-one interactions, simple questions, and simple requests.</li> <li>• ask simple questions and make simple requests.</li> </ul> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• respond appropriately to directions, instructions, and commands.</li> <li>• read and respond to developmentally appropriate material.</li> <li>• demonstrate listening comprehension.</li> <li>• identify aural, visual, and contextual clues.</li> <li>• identify main ideas and key words in oral and print material.</li> </ul> <p><b>Standard 2.1</b></p> <ul style="list-style-type: none"> <li>• identify and react to cultural perspectives and practices in target cultures.</li> <li>• recognize and interpret language and behaviors (e.g., signs of greeting, body language) that are appropriate to target cultures.</li> <li>• identify some commonly-held generalizations about target cultures.</li> <li>• identify common words, phrases, and idioms that reflect target cultures.</li> </ul> <p><b>Standard 2.2</b></p> <ul style="list-style-type: none"> <li>• identify products (e.g., artwork) of target cultures.</li> <li>• identify objects, images, and symbols of target cultures.</li> </ul> <p><b>Standard 4.2</b></p> <ul style="list-style-type: none"> <li>• use evidence from authentic sources to identify similarities and differences between target cultures and students' own cultures.</li> <li>• identify similar and different behavioral patterns between target cultures and the students' own cultures.</li> </ul>



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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• use authentic recipes from target language to identify ingredients and write shopping lists. Prepare recipes for class.</li> <li>• use food guide pyramids to categorize ingredients of authentic recipes.</li> <li>• plan menus in target language for authentic celebrations.</li> <li>• use food guide pyramid to compare one day’s meals in own culture and target culture.</li> <li>• present skits depicting restaurant scenes.</li> <li>• identify food practices and products that appear in art works from target cultures.</li> <li>• conduct interviews with peers and community resource people to explore and compare food practices and products.</li> <li>• visit authentic restaurants and order in target language. Write reviews for school newspapers describing restaurants’ use of art and materials to create an atmosphere representative of the target culture. Include descriptions of foods and trace the origin of recipes. <i>Use this activity to develop possible writing portfolio entries (WP - Transactive).</i></li> </ul>	<p>Patty learns best when provided with organizational devices. When preparing recipes, provide Patty with numbered cards that clearly illustrate procedures. She needs to prepare recipes that require few steps (<i>Types of extensions: complexity, magnitude, resources and materials</i>).</p>

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<p><b>Multiculturalism (2.17)</b></p> <p><b>Similarities and Differences Among Languages (2.27)</b></p> <p><b>Second Language</b></p>	<p><b>Unit: Shopping and Communities</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>How can I use foreign languages to enhance, reinforce, and further my knowledge of other disciplines?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p><b>How can I use foreign languages to participate in multilingual communities?</b></p> <p>How do buyers and sellers exchange goods and services in different cultures?</p>	<p><b>Students will</b></p> <p><b>Standard 1.1</b></p> <ul style="list-style-type: none"> <li>• express basic needs, basic courtesies, states of being, likes and dislikes, and agreements and disagreements.</li> <li>• respond to one-on-one interactions, simple questions, and simple requests.</li> <li>• ask simple questions and make simple requests.</li> </ul> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• make identifications based on oral and/or written descriptors.</li> <li>• demonstrate listening comprehension.</li> </ul> <p><b>Standard 1.3</b></p> <ul style="list-style-type: none"> <li>• give directions, commands, and instructions.</li> <li>• write personal communications (e.g., notes, letters, invitations).</li> <li>• present prepared material (e.g., poems, dialogues, songs) to audiences.</li> </ul> <p><b>Standard 2.1</b></p> <ul style="list-style-type: none"> <li>• identify and react to cultural perspectives and practices in target cultures.</li> <li>• recognize and interpret language and behaviors (e.g., signs of greeting, body language) that are appropriate to target cultures.</li> <li>• identify some commonly held generalizations about target cultures.</li> <li>• identify common words, phrases, and idioms that reflect target cultures.</li> </ul> <p><b>Standard 2.2</b></p> <ul style="list-style-type: none"> <li>• identify products (e.g., artwork) of target cultures.</li> </ul> <p><b>Standard 3.2</b></p> <ul style="list-style-type: none"> <li>• use authentic sources (e.g., newspapers, magazines, TV programs) to identify perspectives of target cultures.</li> </ul> <p><b>Standard 4.2</b></p> <ul style="list-style-type: none"> <li>• identify similar and different behavioral patterns between target cultures and the students' own cultures.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• write and publish community shopping guides for target-language visitors. Distribute through appropriate community center (<i>WP-Transactive</i>).</li><li>• choose favorite cars. Research costs and mileage statistics in their own and target culture.</li><li>• identify and react to cultural perspectives and practices in target cultures by forming small groups that produce, advertise, and sell goods and services in a class market day.</li><li>• conduct interviews with peers and community resource people to identify and compare practices regarding the exchange of goods and services in target cultures.</li></ul> <p><i>Technology suggestion: Audiotape or videotape interviews.</i></p> <ul style="list-style-type: none"><li>• create lists of school supplies, including snack foods and clothing. Describe stores where items can be purchased.</li></ul>	<p>Fran has taken a newspaper class in which she developed advanced publishing skills. Fran will be the team leader of a group that develops an illustrated shopping guide, complete with maps and description of goods and services (<i>Types of extensions: motivation, complexity, purpose and appropriateness</i>).</p>

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<p><b>Multiculturalism (2.17)</b></p> <p><b>Similarities and Differences Among Languages (2.27)</b></p> <p><b>Second Language (2.28)</b></p>	<p style="text-align: center;"><b>Unit: Transportation</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p>How are people and products transported in different countries?</p> <p>How do various factors influence</p>	<p><b>Students will</b></p> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• make identifications based on oral and/or written descriptors.</li> <li>• read and respond to developmentally appropriate material.</li> <li>• identify aural, visual, and contextual clues.</li> <li>• identify main ideas and key words in oral and print material.</li> </ul> <p><b>Standard 1.3</b></p> <ul style="list-style-type: none"> <li>• give directions, commands, and instructions.</li> <li>• write personal communications (e.g., notes, letters, invitations).</li> <li>• present prepared material (e.g., poems, dialogues, songs) to audiences.</li> </ul> <p><b>Standard 2.1</b></p> <ul style="list-style-type: none"> <li>• identify and react to cultural perspectives and practices in target cultures.</li> <li>• identify social, geographic, and political factors that impact cultural practices.</li> <li>• identify common words, phrases, and idioms that reflect target cultures.</li> </ul> <p><b>Standard 3.2</b></p> <ul style="list-style-type: none"> <li>• extract information from sources intended for native speakers.</li> </ul>

## High School World Languages

Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write directions, using local maps, to guide visitors to points of interest in their city, region, or country. Publish and distribute through chamber of commerce or visitors centers (<i>WP-Transactive</i>).</li> </ul> <p style="padding-left: 40px;"><i>Technology suggestion: Use desktop publishing software to create guides.</i></p> <ul style="list-style-type: none"> <li>• identify key words and visual clues necessary for reading maps from target cultures. Plan trips to visit major points of interest and identify modes of transportation.</li> <li>• track transportation route of products not produced in the U.S. and identify various factors (e.g., social, geographic, and political) that influence modes of transportation.</li> <li>• create target language coloring picture dictionary of modes of transportation in target cultures to be shared with day care centers that service the needs of children from target cultures (<i>WP-Transactive</i>).</li> </ul>	<p>Sasha has traveled extensively with her family and is accustomed to planning itineraries. She will contact friends in other countries and compile a booklet of itineraries for the cities she has visited (<i>Types of extensions: complexity, magnitude, motivation, resources and materials</i>).</p>

## High School World Languages

Academic Expectations	Guiding and Essential Questions	Correlations to the World Languages Content Chart
<p style="text-align: center;"><b>Multiculturalism (2.17)</b></p> <p style="text-align: center;"><b>Similarities and Differences Among Languages (2.27)</b></p> <p style="text-align: center;"><b>Second Language (2.28)</b></p>	<p style="text-align: center;"><b>Unit: Families</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p><b>How can I use foreign languages to participate in multilingual communities?</b></p> <p>Who are the family members in different cultures?</p>	<p><b>Students will</b></p> <p><b>Standard 1.1</b></p> <ul style="list-style-type: none"> <li>• respond to one-on-one interactions, simple questions, and simple requests.</li> <li>• ask simple questions and make simple requests.</li> </ul> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• demonstrate listening comprehension.</li> </ul> <p><b>Standard 1.3</b></p> <ul style="list-style-type: none"> <li>• give directions, commands, and instructions.</li> <li>• write personal communications (e.g., notes, letters, invitations).</li> <li>• summarize main ideas of selected authentic and/or contextualized material (e.g., weather reports, TV commercials).</li> </ul> <p><b>Standard 2.1</b></p> <ul style="list-style-type: none"> <li>• identify and react to cultural perspectives and practices in target cultures.</li> <li>• identify some commonly-held generalizations about target cultures.</li> <li>• identify social, geographic, and political factors that impact cultural practices.</li> <li>• identify common words, phrases, and idioms that reflect target cultures.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• create surveys about family members and their roles. Survey peers and analyze results.</li><li>• conduct interviews of classmates and community members from target cultures about family members and their roles.</li><li>• create graphs comparing family sizes of different cultures to identify generalizations. Write feature articles for school newspapers explaining how families from various cultures differ (<i>WP-Transactive</i>).</li><li>• examine greeting cards from target culture to identify social factors that impact cultural practices. Write personal communications on birthday or saint's day cards created for family members.</li><li>• assemble family albums that identify and describe family members.</li><li>• present family albums orally to classmates, using common words, phrases, and idioms that reflect the target culture.</li></ul>	<p>Fine motor coordination is difficult for Brian. He will work with a peer tutor to create cards. Brian will be responsible for dictating birthday messages to his tutor (<i>Types of extensions: level of support, demonstration of learning</i>).</p>

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<p><b>Multiculturalism (2.17)</b></p> <p><b>Similarities and Differences Among Languages (2.27)</b></p> <p><b>Second Language (2.28)</b></p>	<p style="text-align: center;"><b>Unit: Leisure Activities</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p>What are the leisure activities of my culture and the target culture?</p> <p>How do the leisure activities of my culture and the target culture compare?</p>	<p><b>Students will</b></p> <p><b>Standard 1.1</b></p> <ul style="list-style-type: none"> <li>• express basic needs, basic courtesies, states of being, likes and dislikes, and agreements and disagreements.</li> <li>• respond to one-on-one interactions, simple questions, and simple requests.</li> <li>• ask simple questions and make simple requests.</li> </ul> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• read and respond to developmentally appropriate material.</li> <li>• demonstrate listening comprehension.</li> <li>• identify aural, visual, and contextual clues.</li> <li>• comprehend and respond to simple written communications (e.g., notes, invitations).</li> <li>• identify main ideas and key words in oral and print material.</li> </ul> <p><b>Standard 1.3</b></p> <ul style="list-style-type: none"> <li>• present prepared material (e.g., poems, dialogues, songs) to audiences.</li> </ul> <p><b>Standard 3.2</b></p> <ul style="list-style-type: none"> <li>• use authentic sources (e.g., newspapers, magazines, TV programs) to identify perspectives of target cultures.</li> </ul>



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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"> <li>• write letters to pen pals expressing likes and dislikes and leisure time activities. Use simple questions to request similar information.</li> <li>• use Venn diagrams to compare their own leisure activities with leisure activities in the target culture. Present findings to the class.</li> <li>• read entertainment pages of target language publications. Identify and select activities to attend, using key words and contextual clues. Communicate via phone or e-mail in the target language to make plans to attend. Write reviews for entertainment section of school newspapers describing events (<i>WP-Transactive</i>).</li> <li>• use common words, phrases, and images from the target language to create advertisements for leisure time activities Display on class bulletin boards.</li> <li>• create memory card games to match names of famous people from target cultures with their contributions to areas of sports, music, art, drama, dance, literature, cinema, and television.</li> </ul>	<p>Genie learns at a slower pace than her peers. She learns best when concepts are presented in small increments and when activities are modeled. Teachers will model steps in creating advertisements for Genie. She will use only common words to create an advertisement (<i>Types of extensions: pace, purpose and appropriateness, complexity, magnitude, level of support, procedures and routines, demonstration of knowledge</i>).</p>

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<p><b>Multiculturalism (2.17)</b></p> <p><b>Similarities and Differences Among Languages (2.27)</b></p> <p><b>Second Language (2.28)</b></p>	<p style="text-align: center;"><b>Unit: Clothes</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p><b>How can I use foreign languages to participate in multilingual communities?</b></p> <p>What types of clothing do people in different cultures wear?</p>	<p><b>Students will</b></p> <p><b>Standard 1.1</b></p> <ul style="list-style-type: none"> <li>• express basic needs, basic courtesies, states of being, likes and dislikes, and agreements and disagreements.</li> </ul> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• read and respond to developmentally appropriate material.</li> <li>• demonstrate listening comprehension.</li> <li>• identify aural, visual, and contextual clues.</li> <li>• identify main ideas and key words in oral and print material.</li> </ul> <p><b>Standard 1.3</b></p> <ul style="list-style-type: none"> <li>• give directions orally and in writing.</li> <li>• present prepared material (e.g., poems, dialogues, songs) to audiences.</li> </ul> <p><b>Standard 2.1</b></p> <ul style="list-style-type: none"> <li>• identify some commonly-held generalizations about target cultures.</li> <li>• identify common words, phrases, and idioms that reflect target cultures.</li> </ul> <p><b>Standard 3.2</b></p> <ul style="list-style-type: none"> <li>• use authentic sources (e.g., newspapers, magazines, TV programs) to identify perspectives of target cultures.</li> </ul> <p><b>Standard 4.2</b></p> <ul style="list-style-type: none"> <li>• use evidence from authentic sources to identify similarities and differences between target cultures and students' own cultures.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• create shopping lists in target language identifying basic items of their school wardrobe.</li><li>• view photographs of children from target cultures. Prepare back-to-school shopping lists that could be used by children in target cultures.</li><li>• select destinations in target countries. Describe items that should be taken to accommodate weather conditions and activities in target countries.</li><li>• work in cooperative groups to present fashion shows, giving descriptions orally in target language.</li><li>• use authentic print material to compile gift lists for family and friends.</li><li>• make wallet-sized reference cards of clothing sizes in the target language and culture for two members of your family.</li><li>• create two clothing store window displays: one for their own culture and one for target culture. Display at foreign language fair or parents' night.</li></ul>	<p>Sarah works at a clothing store and is active in the school's DECA club. She will be responsible for overseeing the development of store displays (<i>Types of extensions: complexity, magnitude, pace</i>).</p>

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<p style="text-align: center;"><b>Multiculturalism</b> (2.17)</p> <p style="text-align: center;"><b>Similarities and Differences Among Languages</b> (2.27)</p> <p style="text-align: center;"><b>Second Language</b> (2.28)</p>	<p style="text-align: center;"><b>Unit: Daily Routines</b></p> <p><b>How can I effectively communicate using a foreign language?</b></p> <p><b>How are the target cultures' practices and products reflective of their lifestyles and philosophies?</b></p> <p><b>How can I use foreign languages to enhance, reinforce, and further knowledge of other disciplines?</b></p> <p><b>What is the nature of language? What is the concept of culture? How do languages and cultures compare?</b></p> <p><b>How can I use foreign languages to participate in multilingual communities?</b></p> <p><b>How can I use foreign languages to participate in multilingual communities?</b></p> <p>How do students in different cultures spend their time?</p>	<p><b>Students will</b></p> <p><b>Standard 1.1</b></p> <ul style="list-style-type: none"> <li>• express basic needs, basic courtesies, states of being, likes and dislikes, and agreements and disagreements.</li> <li>• respond to one-on-one interactions, simple questions, and simple requests.</li> </ul> <p><b>Standard 1.2</b></p> <ul style="list-style-type: none"> <li>• demonstrate listening comprehension.</li> </ul> <p><b>Standard 1.3</b></p> <ul style="list-style-type: none"> <li>• present prepared material (e.g., poems, dialogues, songs) to audiences.</li> </ul> <p><b>Standard 2.1</b></p> <ul style="list-style-type: none"> <li>• identify some commonly-held generalizations about target cultures.</li> <li>• identify social, geographic, and political factors that impact cultural practices.</li> </ul> <p><b>Standard 3.2</b></p> <ul style="list-style-type: none"> <li>• use authentic sources (e.g., newspapers, magazines, TV programs) to identify perspectives of target cultures.</li> </ul> <p><b>Standard 4.2</b></p> <ul style="list-style-type: none"> <li>• use evidence from authentic sources to identify similarities and differences between target cultures and students' own cultures.</li> <li>• identify similar and different behavioral patterns between target cultures and the students' own cultures.</li> </ul>

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Sample Activities	Sample Extensions for Diverse Learners
<p><b>Students will</b></p> <ul style="list-style-type: none"><li>• give oral and written descriptions of their school schedules, including times, subjects, and days.</li><li>• give oral and written descriptions of their after school and weekend activities. Design weekly calendars.</li><li>• interview community members from target cultures to identify daily routines of students in these cultures. Prepare spreadsheets and graphs to compare use of time in different cultures. Give oral descriptions of their findings. Write feature news articles for school papers explaining how people in different cultures spend their time (<i>WP-Transactive</i>).</li><li>• write children's books illustrating daily routines. Make audio recordings of books to share with other classes (<i>WP-Transactive</i>).</li></ul>	