Warren County School District

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: **Applying Technology 7**

Course Number: 00731

Course Description and Prerequisites:

Applying Technology is an activity-based course that focuses on the application of the tools, materials and processes of communication, manufacturing, construction and transportation, and biotechnologies. Students will study the ways materials, energy and information are processed to transmit information, build structures, make products, move passengers and freight, and explore the areas of bio-related technologies. No pre-requisite.

Final exam required.

Suggested Grade Level: 7th

Length of Course: X One Semester ____Two Semesters ____Other

Units of Credit: .2

PDE *Certification and Staffing Policies and Guidelines (CSPG)* Required Teacher Certification(s) Technology Education CPSG #65

Certification verified by WCSD Human Resources Department:

X Yes ____No

Board Approved Textbooks, Software, Materials:

Book Title: Introduction to Technology
Publisher: Glencoe
ISBN #: (Student Edition) 0-07-861219-5
(Teacher Annotated Edition) 0-07-861407-4
(Lab Manual) 0-07-861408-2
(Lab Manual Teacher Annotated Edition) 0-07-861409-0
(Teacher Resource Guide) 0-07-86140-4
(Teacher Productivity CD-ROM) 0-07-861411-2
Copyright: 2005

Date of WCSD Board Approval:

BOARD APPROVAL:

Date Written: October 9, 2006

Date Approved: 12/4/06

Implementation Year: 2007-2008

Suggested Supplemental Materials:

None

Course Standards

PA Academic Standards:

3.1.7 (A,B,C,D,E) Unifying Themes
3.2.7 (A,B,D) Inquiry and Design
3.4.7 (A,B,C) Physical Science, Chemistry and Physics
3.5.7 (B) Earth Sciences
3.6.7 (A,B,C) Technology Education
3.7.7 (A,B,C,D,E) Technological Devices
3.8.7 (A,B,C) Science, Technology and Human Endeavors

WCSD Academic Standards:
None

Industry or Other Standards:
Common Core

Common Core Reading Standards for Literacy in History/ Social Studies/ Technology: Grades 6 -8
Key Ideas and Details
1. Cite specific textual evidence to support analysis of primary and secondary sources.
2. Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.
3. Identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).
Craft and Structure

4. Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.
5. Describe how a text presents information (e.g., sequentially, comparatively, causally).
6. Identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).
Integration of Knowledge and Ideas
7. Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
8. Distinguish among fact, opinion, and reasoned judgment in text.
9. Analyze the relationship between a primary and secondary source on the same topic.
Range of Reading and Level of Text Complexity
10. By the end of grade 8, read and comprehend history/social studies texts in the grades 6-8 text complexity band independently and proficiently.

Common Core Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects Grades 6 - 8
Text Types and Purposes
1. Write arguments focused on *discipline-specific* content.
a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrates an understanding of the topic or text, using credible sources.
c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
d. Establish and maintain a formal style.

e. Provide a concluding statement or section that follows from and supports the argument presented.
2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
e. Establish and maintain a formal style and objective tone.
3. The standards require that students be able to incorporate narrative elements effectively into arguments and informative/ explanatory texts. In history/ social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import.
Production and Distribution of Writing
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
6. Use technology, including the internet, to produce and publish writing and present the relationships between information ad ideas clearly and efficiently.
Research to Build and Present Knowledge
7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
8. Gather relevant information from multiple print and digital sources, using search terms

effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
9. Draw evidence from informational texts to support analysis, reflection, and research.
Range of Writing
10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

WCSD EXPECTATIONS

WCSD K-12 Expectations for instruction in writing, reading, mathematics and, technology have been developed and revised annually. The teacher will integrate all WCSD Expectations into this planned instruction

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (I.E.P.) or Gifted Individual Education Plan (G.I.E.P.).

SPECIFIC EDUCATIONAL OBJECTIVES/CORRESPONDING STANDARDS AND ELIGIBLE CONTENT WHERE APPLICABLE

3.1.7 Unifying Themes

x – performance assessed during that semester

	Performance Indicator	1	2	Assessment
A.	Explain the parts of a simple system and their relationship to each other.			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation • Quizzes Summative
B.	Describe the use of models as an application of scientific or technological concepts.			
C.	Identify patterns as repeated processes or recurring elements in science and technology.			

D.	Explain scale as a way of relating concepts and ideas to one another by some measure.			Assessments: • Completed Projects • Written Exams
E.	Identify change as a variable in describing natural and physical systems.			

3.2.7 Inquiry and design

	Performance Indicator	1	2	Assessment
A.	Explain and apply scientific and technological knowledge.			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation • Quizzes Summative Assessments: • Completed Projects • Written Exams
B.	Apply process knowledge to make and interpret observations.			
D.	Know and use the Technological design process to solve problems.			

3.4.7 Physical Science, Chemistry and Physics

	Performance Indicator	1	2	Assessment
A.	Describe concepts about the structure and properties of matter.			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation • Quizzes Summative Assessments: • Completed Projects • Written Exams
B.	Relate energy sources and transfers to heat and temperature.			
C.	Identify and explain the principles of force and motion.			

3.5.7Earth Sciences

	Performance Indicator	1	2	Assessment

B.	Recognize earth resources and how they affect everyday life.			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation • Quizzes Summative Assessments: • Completed Projects • Written Exams

3.6.7Technology Education

	Performance Indicator	1	2	Assessment
A.	Explain biotechnologies that relate to related technologies of propagating, growing, maintaining, adapting, treating and converting.			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation • Quizzes Summative Assessments: • Completed Projects • Written Exams
B.	Explain information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.			
C.	Explain physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research and design.			

3.7.7 Technological Devices

	Performance Indicator	1	2	Assessment
A.	Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation
B.	Use appropriate instruments and apparatus to study materials.			

C.	Explain and demonstrate basic computer operations and concepts.			• Quizzes Summative Assessments: • Completed Projects • Written Exams
D.	Apply computer software to solve specific problems.			
E.	Explain basic computer communications systems.			

3.8.7 Science Technology and Human Endeavors

	Performance Indicator	1	2	Assessment
A.	Explain how science and technology are limited in their effects and influences on society.			Formative Assessments: • Rubrics • Teacher Observation • Peer Evaluation • Quizzes Summative Assessments: • Completed Projects • Written Exams
B.	Explain how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.			
C.	Identify the pros and cons of applying technological and scientific solutions to address problems and the effect upon society.			

ASSESSMENTS

PSSA Assessment Anchors Addressed: The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at pde@state.pa.us.

Formative Assessments: The teacher will develop and use standards-based assessments throughout the course.

Portfolio Assessment: ____ Yes __X__ No

District-wide Final Examination Required: __X__ Yes ____ No

Course Challenge Assessment: None

REQUIRED COURSE SEQUENCE AND TIMELINE

Content Sequence	Dates
Unit 1 The Nature of Technology	15 hours
Why Study Technology?	
Concepts of Technology	
Processes Tools and Materials of Technology	
Energy and Power for Technology	
Electricity to Electronics	
Technology Connections	
Unit 2 Engineering Design	7 hours
Design and Problem Solving	
From Drawings to Prototypes	
Unit 3 Information and Communication Technologies	10 hours
Communications Systems	
Computer Technologies	
Graphic Communication	
Photographic Technologies	
Multimedia Technologies	
Unit 4 Biotechnologies	5 hours
Medical Biotechnologies	
Agricultural Biotechnologies	
Unit 5 Manufacturing Technologies	19 hours
Manufacturing Systems	
Manufacturing in the 21st Century	
Unit 6 Construction Technologies	9 hours
The World of Construction	
Building a Bridge	
Heavy Construction	
Unit 7 Transportation Technologies	6 hours

Transportation Power

Transportation Systems

WRITING TEAM: John Victor, Arthur Anderson, Elizabeth Anderson, David Krack, Patrick Cronmiller, Andrew Perlstein

WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination? _X___ Yes ____ No
2. Does this course issue a mark/grade for the report card?
   ___X_ Yes____ No
3. Does this course issue a Pass/Fail mark? ____ Yes __X__ No
4. Is the course mark/grade part of the GPA calculation?
   __X__ Yes ___ No
5. Is the course eligible for Honor Roll calculation? _X___ Yes ____ No
6. What is the academic weight of the course?
   __ __ No weight/Non credit __X__ Standard weight
   ____ Enhanced weight (Describe)_____