WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Applying Technology 8
Course Number: 00740
Course Prerequisites: N/A

Course Description: Applying Technology 8 is a semester long activity-based course in which students will focus 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, and explore the areas of bio-related technologies.

Suggested Grade Level: Grade 8
Length of Course: One Semester
Units of Credit: .5
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:
CSPG 65 Technology Education
To find the CSPG information, go to CSPG
Certification verified by the WCSD Human Resources Department: ☒Yes ☐No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic
Mark Types: Check all that apply.
☒F – Final Average ☒MP – Marking Period ☐EXM – Final Exam

GPA Type: ☐ GPAEL-GPA Elementary ☒ GPAML-GPA for Middle Level ☐ NHS-National Honor Society
☐ UGPA-Non-Weighted Grade Point Average ☐ GPA-Weighted Grade Point Average

State Course Code: 21052
To find the State Course Code, go to State Course Code, download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title:	Introduction to Technology
Publisher:	Glencoe/McGraw-Hill
ISBN #:	0-07-861219-5
Copyright Date:	2005
WCSD Board Approval Date:	2007

Supplemental Materials: CREO Parametrics, Jeep materials (wood, cutting guides, hand tools, drill presses, wooden pegs, nails, nail set, rulers, sandpaper, wheels), clock construction materials (wood, clock mechanism, glue), drafting materials (drafting paper, clear rulers, 3D rulers, drafting boards), wooden box materials (wood, nails, hinges, glue), TinkerCAD, Pro Desktop (where applicable), measuring apparati (rulers, tape measures, yard/meter sticks, protractors)

Curriculum Document

WCSD Board Approval:

Date Finalized:	2/19/2025
Date Approved:	3/10/2025
Implementation Year:	2024-2025

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS

Marking Period 1

- Introduction to Technology
- Design Engineering
- Production Engineering

Marking Period 2

- Production Engineering (continued)
- Manufacturing Products
- Enterprise Unit

Marking Period 3

- Introduction to Technology
- Design Engineering
- Production Engineering

Marking Period 4

- Production Engineering (continued)
- Manufacturing Products
- Enterprise Unit

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Apply strategies to understand complex directions.	BCIT.15.3.8.C	MP1, MP2, MP3, MP4
Explore pathways to becoming an entrepreneur.	BCIT.15.5.8.A	MP2, MP4
Identify management and organizational skills needed for entrepreneurship.	BCIT.15.5.8.B	MP2, MP4
Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly.	CC.1.4.8.A	MP2, MP4
Develop and analyze the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples; include graphics and multimedia when useful to aiding comprehension.	CC.1.4.8.C	MP2, MP4
Use precise language and domain-specific vocabulary to inform about or explain the topic.	CC.1.4.8.E.1	MP1, MP2, MP3, MP4
Write arguments to support claims.	CC.1.4.8.G	MP2, MP4
Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.	CC.1.4.8.U	MP2, MP4
Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.	CC.1.5.8.A	MP1,MP2, MP3, MP4
Research information from various sources to use and maintain technological products or systems.	SCI.3.5.6-8.A	MP1, MP2, MP3, MP4
Use instruments to gather data on the performance of everyday products.	SCI.3.5.6-8.B	MP1,MP2 , MP3, MP4
Analyze how the creation and use of technologies consumes renewable, non-renewable, and inexhaustible resources; creates waste; and may contribute to environmental challenges.	SCI.3.5.6-8.D	MP1,MP2 , MP3, MP4
Consider the impacts of a proposed or existing technology and devise strategies for reducing, reusing, and recycling waste caused by its creation.	SCI.3.5.6-8.E	MP1,MP2 , MP3, MP4
Analyze examples of technologies that have changed the way people think, interact, live, and communicate.	SCI.3.5.6-8.F	MP1,MP2 , MP3, MP4
Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors.	SCI.3.5.6-8.H	MP1,MP2, MP3, MP4
Examine the ways that technology can have both positive and negative effects at the same time.	SCI.3.5.6-8.I	MP1, MP3
Use tools, materials, and machines to safely diagnose, adjust, and repair systems.	SCI.3.5.6-8.J	MP1,MP2 , MP3, MP4
Use devices to control technological systems.	SCI.3.5.6-8.K	MP1,MP2 , MP3, MP4

Performance Indicator	**PA Core Standard and/or Eligible Content**	**Marking Period Taught**
Design methods to gather data about technological systems.	SCI.3.5.6-8.L	MP1, MP2 MP3, MP4
Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	SCI.3.5.6-8.M	MP1, MP2 MP3, MP4
Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	SCI.3.5.6-8.N	MP2, MP4
Interpret the accuracy of information collected.	SCI.3.5.6-8.O	MP1, MP3
Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	SCI.3.5.6-8.P	MP1, MP2 MP3, MP4
Apply a technology and engineering design thinking process.	SCI.3.5.6-8.Q	MP1, MP2 MP3, MP4
Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants.	SCI.3.5.6-8.R	MP1, MP2 MP3, MP4
Illustrate the benefits and opportunities associated with different approaches to design.	SCI.3.5.6-8.S	MP1, MP2 MP3, MP4
Create solutions to problems by identifying and applying human factors in design.	SCI.3.5.6-8.T	MP1, MP2 MP3, MP4
Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design.	SCI.3.5.6-8.U	MP1, MP2 MP3, MP4
Refine design solutions to address criteria and constraints.	SCI.3.5.6-8.V	MP1, MP2 MP3, MP4
Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	SCI.3.5.6-8.W	MP1, MP2 MP3, MP4
Defend decisions related to a design problem.	SCI.3.5.6-8.X	MP1, MP2 MP3, MP4
Demonstrate how knowledge gained from other content areas affects the development of technological products and systems.	SCI.3.5.6-8.BB	MP2 , MP4
Consider historical factors that have contributed to the development of technologies and human progress.	SCI.3.5.6-8.CC	MP1, MP2 MP3, MP4
Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements.	SCI.3.5.6-8.DD	MP2, MP4
Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.	SCI.3.5.6-8.FF	MP1, MP2 MP3, MP4
Predict outcomes of a future product or system at the beginning of the design process.	SCI.3.5.6-8.II	MP1, MP2 MP3, MP4

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Apply informed problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.	SCI.3.5.6-8.JJ	MP1, MP2 MP3, MP4
Compare how different technologies involve different sets of processes.	SCI.3.5.6-8.LL	MP1, MP2 MP3, MP4

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include: (not limited to) Bell ringers, exit tickets, worksheets, quizzes, lab assignments, practice tests, writing prompts, teacher questioning, class discussions, individual and team-based projects, classroom polls, think-pair-share

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include: Essays, tests, projects, performance tasks, presentations, portfolios