Sept. Gr. 7 Unit 1: Applied Technology

Content Area:

Technology

Course(s): Time Period:

Length:

Status:

September 6-8 Weeks Published

Unit Overview

Students will review basics of CAD software.

Students will use orthographic drawings to create products.

Students will be able to draw an orthographic drawing.

Enduring Understandings

How do we use technology to better our lives.

How can we use technology to better the lives of others.

Essential Questions

When is good enough truly good enough?

What is the difference between an invention and an innovation?

Instructional Strategies & Learning Activities

Objective: Intro to MS Technology

To review clearly defined applied tech lab rules and procedures with middle school students as well as ensuring that all students can log in to Computers, create directories, understand file extensions, copy and paste from one subdirectory to another.

Differentiation: N/A

Assessment: observation and demonstration

Objective: Intro to CAD software

The student will be able to use skills from last year to create objects.

Differentiation:

Group work, student choosen task.

Assessment:

Rubric

Objective: Complete an orthographic drawing

The student will be able to create an orthographic drawing to begin designs from.

Differentiation:

Content for each group

Assessment:

Rubric

Integration of Career Readiness, Life Literacies and Key Skills

WRK.9.2.8.CAP	Career Awareness and Planning
WRK.9.2.8.CAP.1	Identify offerings such as high school and county career and technical school courses, apprenticeships, military programs, and dual enrollment courses that support career or occupational areas of interest.
WRK.9.2.8.CAP.2	Develop a plan that includes information about career areas of interest.
WRK.9.2.8.CAP.3	Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income.
WRK.9.2.8.CAP.10	Evaluate how careers have evolved regionally, nationally, and globally.
WRK.9.2.8.CAP.11	Analyze potential career opportunities by considering different types of resources, including occupation databases, and state and national labor market statistics.
WRK.9.2.8.CAP.12	Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential.
TECH.9.4.8.CI	Creativity and Innovation
TECH.9.4.8.CI.1	Assess data gathered on varying perspectives on causes of climate change (e.g., cross-cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).
TECH.9.4.8.CI.2	Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3).
TECH.9.4.8.CI.3	Examine challenges that may exist in the adoption of new ideas (e.g., 2.1.8.SSH, 6.1.8.CivicsPD.2).
TECH.9.4.8.CI.4	Explore the role of creativity and innovation in career pathways and industries.
TECH.9.4.8.CT	Critical Thinking and Problem-solving
TECH.9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
TECH.9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).

TECH.9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the
	factors that led to a positive or negative outcome.

Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.

Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking.

An essential aspect of problem solving is being able to self-reflect on why possible solutions for solving problems were or were not successful.

An individual's strengths, lifestyle goals, choices, and interests affect employment and income.

Multiple solutions often exist to solve a problem.

Technology and Design Integration

See activities above and standards below.

Interdisciplinary Connections

LA.RI.7.1	Cite several pieces of textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text.
LA.RI.7.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.
LA.RI.7.10	By the end of the year read and comprehend literary nonfiction at grade level text-complexity or above, with scaffolding as needed.
LA.W.7.1	Write arguments to support claims with clear reasons and relevant evidence.
LA.W.7.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
LA.W.7.6	Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.
LA.W.7.7	Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.
LA.SL.7.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
LA.SL.7.5	Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
LA.L.7.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
LA.L.7.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
LA.L.7.3	Use knowledge of language and its conventions when writing, speaking, reading, or

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.
- Definitions of Differentiation Components:
 - Content the specific information that is to be taught in the lesson/unit/course of instruction.
 - o Process how the student will acquire the content information.
 - o Product how the student will demonstrate understanding of the content.
 - Learning Environment the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

Differentiation will be offered as listed in the above activities.

Modifications & Accommodations

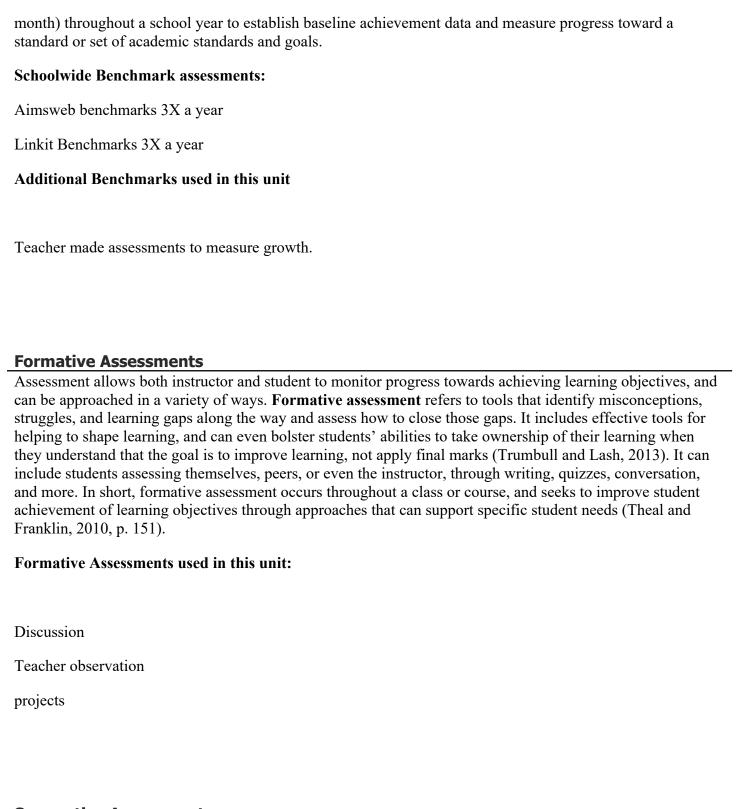
Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

IEP and 504 Accommodations will be utilized.

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per



Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

Projects

Assessments listed above

Instructional Materials

Materials as needed for projects

Standards

TEC	CH.8.2.8.D.1	Design and create a product that addresses a real world problem using a design process under specific constraints.
TEC	CH.8.2.8.D.3	Build a prototype that meets a STEM-based design challenge using science, engineering, and math principles that validate a solution.
TEC	CH.8.2.8.D.5	Explain the impact of resource selection and the production process in the development of a common or technological product or system.
TEC	CH.8.2.8.D.6	Identify and explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment.
TEC	CH.8.2.8.E.1	Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.
TEC	CH.8.2.8.E.2	Demonstrate an understanding of the relationship between hardware and software.
TEC	CH.8.2.8.E.4	Use appropriate terms in conversation (e.g., programming, language, data, RAM, ROM, Boolean logic terms).
TEC	CH.8.2.8.E.CS1	Computational thinking and computer programming as tools used in design and engineering.