P.Cert.Applied Tech Unit 2 Copied from: Grade 8, Copied on: 09/15/21

Content Area: **Technology**
Course(s):
Time Period: **October**
Length: **4-6 Weeks**
Status: **Published**

Unit Overview

Students will use tools to prototype a product.

Students will use create their prototype on the 3D printer.

Enduring Understandings

How do we use technology to better our lives.

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

Essential Questions

What rules do we follow when we use hand tools?

What are the important points to consider when creating a product from a prototype?

Instructional Strategies & Learning Activities

Objective: Create a drawing of the fix for the broken easel.

Have students identify what needs to be fixed on the broken easel. Students will then create drawings of their idea.

Differentiation: N/A

Assessment: student drawings

Objective: Create a working prototype out of balsa wood.

Have students create their prototype.

Differentiation:

Group work, student choosen task.

Assessment:
Rubric

Objective: Create their finished product.
The student will be able to create their product using prototype as a guide.

Differentiation:
Content for each group

Assessment:
Rubric

Integration of 21st Century Themes and Career Exploration

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP7	Employ valid and reliable research strategies.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
CRP.K-12.CRP11	Use technology to enhance productivity.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Technology 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 listening.
LA.L.7.4	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

Differentiation will be offered as listed in the above activities.

Modifications & Accommodations

IEP and 504 Accommodations will be utilized.

Benchmark Assessments

Teacher made assessments to measure growth.

Formative Assessments

Discussion

Teacher observation

projects

Summative Assessments

Projects

Assessments listed above

Instructional Materials

Materials as needed for projects

Standards

TECH.8.2.8.D.1	Design and create a product that addresses a real world problem using a design process under specific constraints.
TECH.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.
TECH.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.
TECH.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.
TECH.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.
TECH.8.2.8.E.2	Demonstrate an understanding of the relationship between hardware and software.
TECH.8.2.8.E.4	Use appropriate terms in conversation (e.g., programming, language, data, RAM, ROM, Boolean logic terms).
TECH.8.2.8.E.CS1	Computational thinking and computer programming as tools used in design and engineering.