Unit 8 - Creative Problem Solving with Computers and Robots

Content Area: **Unified Arts**
Course(s): **Tech Apps 8**
Time Period: **December**
Length: **25 Days**
Status: **Published**

Unit Summary

Students will use their problem solving & programming skills to complete a technology challenge. Challenges vary.

Standards

CAEP.9.2.8.B.3	Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.
TECH.8.1.8.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.8.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.

Student Learning Objectives

- Students will learn to use a programming language to create authentic, interactive technical products, such as video games and animations.
- Students will learn to communicate in writing complete technical specifications.
- Students will learn to incorporate feedback from a target audience to improve and enhance a product.
- Students will learn to create pseudo-code to identify the logical process needed to solve a problem.

Essential Questions

- How can you innovate and problem solve with digital technologies?
- How does your audience or targeted consumer play a role in your design and your product?
- How can digital technologies aid in the understanding of scientific processes or models?

Enduring Understandings

- Students will understand that technology systems can be used to create, invent, and design products.
- Students will understand that planning and reflecting are essential skills in the design and development process.
- Students will understand that getting input from your target audience/consumer throughout the product development lifecycle is important in building a successful product.
- Students will understand that knowing how a tool, such as a programming language, works is essential to being able to use it to design and innovate products.

- Students will understand that simulation and modeling can aid in the process of scientific discovery.

Application

- Students will be able to independently use their learning...

Skills

Students will be skilled at:

- Collaborating to use the design loop to innovate, create, prototype, test, reflect on and improve technical products, such as video games, animations, or robotics based on specifications and design parameters.
- Evaluating technology systems and share their evaluations for public comment.
- Creating detailed specification, design, and testing documents.
- Creating an interactive model or simulation of a scientific process.