Unit: Design and Creation of Multimedia	Concept: Design Process

Standard

- 3.5.9-12.N Analyze and use relevant and appropriate design thinking processes to solve technological and engineering problems.
- 3.5.9-12.P Apply a broad range of design skills to a design thinking process.
- 3.5.9-12.Y (ETS) Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
- 3.5.9-12.X Implement the best possible solution to a design using an explicit process.

Key Learning

- (LTTG) Students will be able to employ hands-on problem solving, i.e., designing, making/building, producing, and evaluating outcomes.
- (LTTG) Students will be able to collaborate as part of a team, valuing the contributions of all members.

Unit Essential Question

- How can I employ hands-on problem solving, i.e., designing, making/building, producing, and evaluating outcomes?
- How can I collaborate as part of a team, valuing the contributions of all members?

Essential Question

- How can I apply the design process to create effective multimedia designs?

Key Vocabulary

- Design Process and Systems Thinking

Learning Experience

- Students will form ideas, gather information, create or gather design elements, organize and arrange design elements, and convert their ideas into design solutions that solve multimedia design problems.

(Big Idea) Technology & Engineering Curriculum Framework Big Ideas

- A system is a group of interrelated components designed collectively to achieve a desired goal.

(SEP) Science and Engineering Practices

- Constructing Explanations and Designing Solutions - Design, evaluate, and/or refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and trade-off considerations.

(DCI) Disciplinary Core Ideas

- ISTE 4A - Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- NAEP D.12.8 - Meet a sophisticated design challenge by identifying criteria and constraints, predicting how these will affect the solution, researching and generating ideas, and using trade-offs to balance competing values in selecting the best solution.

(TEP) Technology and Engineering Practices

- Systems Thinking - Designs and troubleshoots technological systems in ways that consider the multiple components of the system.

Terms

- (ETS) Engineering, Technology, and Applications of Science – Standards applicable across the Science, Environmental Literacy & Sustainability, and Technology & Engineering content areas.
- (LTTG) PDE Technology & Engineering Long Term Transfer Goals
- (Learning Experience) A learning experience refers to any interaction, activity, or other experience in which students acquire new understanding, knowledge, behaviors, or skills.
- (Big Idea #) PDE Technology & Engineering Curriculum Framework Big Ideas
- (SEP) PDE Science and Engineering Practices
- (DCI) PDE Disciplinary Core Ideas
- (TEP) PDE Technology and Engineering Practices