Unit: Multimedia Experimentation and Development	Concept: Design Solution

Standard
- 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.

Unit Essential Question
- How can I employ hands-on problem solving, i.e., designing, making/building, producing, and evaluating outcomes?

Essential Question
- Why is there no single correct solution in design?

Key Vocabulary
- Optimization, Explicit Process, and Design

Learning Experience
- Students who demonstrate understanding can implement the best possible solution to a design using an explicit process.
- Clarifying Statement: Students design within provided criteria and constraints and recognize trade-offs associated with optimization.

(Big Idea) Technology & Engineering Curriculum Framework Big Ideas
- There is no single, best solution as designs can always be improved and refined.

(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
- 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.
- ISTE 4C - Students develop, test and refine prototypes as part of a cyclical design process.

(TEP) Technology and Engineering Practices
- Making and Doing - Demonstrates the ability to regulate and improve making and doing skills.
- Optimism - Shows persistence in addressing technological problems and finding solutions to those problems.

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