# **Unit: Applying Design Principles**

### **Concept: Design Skills**

#### **Standard**

• 3.5.9-12.P Apply a broad range of design skills to a design thinking process.

### **Key Learning**

 (LTTG) Students will be able to demonstrate integrity and conscientiousness, considering ethical issues involved.

#### **Unit Essential Question**

 How can I demonstrate integrity and conscientiousness, considering ethical issues involved?

#### **Essential Question**

Why is there no single correct solution in design?

#### **Key Vocabulary**

Creativity, Collaboration, Resourcefulness, Ideation, and Design Thinking

### **Learning Experience**

- Students who demonstrate understanding can apply a broad range of design skills to a design thinking process.
- Clarifying Statement: Students engage in meaningful discourse about the essential skills they have applied
  when engaged in designing, constructing, and implementing a solution. These include creativity,
  collaboration, resourcefulness, ideation, learning through failure, and many other essential skills of design.

#### (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

• ISTE 4A - Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

## (TEP) Technology and Engineering Practices

Making and Doing - Demonstrates the ability to regulate and improve making and doing skills.

#### **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