

Unit: Applying Design Principles	Concept: Design Principles
<p>Standard</p> <ul style="list-style-type: none"> 3.5.9-12.Q Implement and critique principles, elements, and factors of design. 	
<p>Key Learning</p> <ul style="list-style-type: none"> (LTTG) Students will be able to demonstrate integrity and conscientiousness, considering ethical issues involved. 	<p>Unit Essential Question</p> <ul style="list-style-type: none"> How can I demonstrate integrity and conscientiousness, considering ethical issues involved?
<p>Essential Question</p> <ul style="list-style-type: none"> How are designs influenced by universal principles and elements of design? 	
<p>Key Vocabulary</p> <ul style="list-style-type: none"> Line, Shape, Space, Value, Form, Texture, Color, Balance, Rhythm, Pattern, Emphasis, Contrast, Unity, and Movement 	
<p>Learning Experience</p> <ul style="list-style-type: none"> Students who demonstrate understanding can implement and critique principles, elements, and factors of design. Clarifying Statement: Students independently select, evaluate, and implement principles, elements, and other factors to improve their designs. The principles of design include balance, rhythm, pattern, emphasis, contrast, unity, and movement. The elements of design include line, shape, space, value, form, texture, and color. Additional design factors that can be applied to physical objects include ergonomics, energy efficiency, reliability, durability, safety, ease of manufacture, and aesthetics. 	
<p>(Big Idea) Technology & Engineering Curriculum Framework Big Ideas</p> <ul style="list-style-type: none"> There are universal principles and elements of design. 	
<p>(SEP) Science and Engineering Practices</p> <ul style="list-style-type: none"> 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. 	
<p>(DCI) Disciplinary Core Ideas</p> <ul style="list-style-type: none"> Developing Possible Solutions - When evaluating solutions it is important to take into account a range of constraints including cost, safety, reliability and aesthetics and to consider social, cultural and environmental impacts. 	
<p>(TEP) Technology and Engineering Practices</p> <ul style="list-style-type: none"> Attention to Ethics - Assesses technological products, systems, and processes through critical analysis of their impacts and outcomes. 	

- Critical Thinking - Uses evidence to better understand and solve problems in technology and engineering, including applying computational thinking.

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