



## **Graphic Communications Technology - Grade 8**

**Course Information**

<b>Grade(s):</b>	8th Grade
<b>Discipline/Course:</b>	Technology Education
<b>Course Title:</b>	Graphic Communications Technology
<b>Prerequisite(s):</b>	None
<b>Course Description:</b> <i>Program of Studies</i>	Students use the principles of design and the engineering process to solve various challenges. Units of study introduce students to the graphic design process, the creation of messages through visual communication and engineering principles with an emphasis on CADD software, 3D printing, digital photography and audio/video digital storytelling. Vertical alignment of the middle school Technology Education program prepares students for advanced approaches to STEM careers at the high school level.
<b>Course Essential Questions:</b>	<ul style="list-style-type: none"> <li>● How do people use design technology to communicate ideas and concepts?</li> <li>● How does using design technology differ from creating art?</li> <li>● What are the universal principles and elements of design?</li> <li>● How does the engineering design process apply to creating effective communications?</li> <li>● What skills are needed to carry out technology and engineering design?</li> </ul>
<b>Course Enduring Understandings:</b>	<ul style="list-style-type: none"> <li>● Design is a fundamental human activity.</li> <li>● There is no single, correct solution in technology design.</li> <li>● Design in technology and engineering is iterative; designs can always be improved and refined, and failure is an inherent part of the process.</li> <li>● There are universal principles and elements of design</li> <li>● Design optimization is governed by criteria and constraints.</li> </ul>
<b>Duration:</b> <b>Credit:</b>	10 weeks (1 marking period) NA

<b>Course Materials/Resources:</b>	Equipment and consumable materials
<b>FPS Course Academic Expectation(s):</b>	SE - Synthesizing and Evaluating CC - Creating and Constructing
<b>Year at a Glance (Units)</b>	Unit 1 - Introduction to Design Technology Unit 2 - Graphic Design and CAD Unit 3 - Audio and Video

<b>Unit Number and Title:</b>	Unit 1 - Introduction to Design Tech
<b>Duration:</b>	1 week
<b>Resource(s):</b>	N/A
<b>Unit Overview:</b>	Students will learn how using design in technology differs from creating art. Students will explore technology and engineering design processes in order to understand how different approaches apply to different types of design challenges.
<b>Learning Goals</b>	
<b>Standard(s):</b>	ITEEA (International Technology and Engineering Educators Association) Standards for Technological and Engineering Literacy (STEL) STEL-7P. Illustrate the benefits and opportunities associated with different approaches to design.
<b>Essential Question(s):</b>	<ul style="list-style-type: none"> <li>• How do people use design technology to communicate ideas and concepts?</li> <li>• How does using design technology differ from creating art?</li> <li>• How does the engineering design process apply to creating effective communications?</li> </ul>
<b>Enduring Understanding(s):</b>	<ul style="list-style-type: none"> <li>• Design is a fundamental human activity.</li> <li>• There are universal principles and elements of design.</li> <li>• Design optimization is governed by criteria and constraints.</li> </ul>
<b>Learning Goal(s):</b> <i>Students will know and will be able to use their learning to:</i> (Content/ Skills)	<p><b>Content:</b> (Students will know...)</p> <ul style="list-style-type: none"> <li>• various approaches to design.</li> <li>• basic design elements and principles.</li> </ul> <p><b>Skills:</b> (Students will be able to...)</p> <ul style="list-style-type: none"> <li>• identify criteria and constraints in a design challenge</li> <li>• identify human factors that impact design.</li> <li>• communicate ideas and concepts using visual representations</li> </ul>

<b>Unit Number and Title:</b>	Unit 2 - Graphic Design and CAD
<b>Duration:</b>	6 weeks
<b>Resource(s):</b>	N/A
<b>Unit Overview:</b>	Students will apply the technology and engineering design process to a design challenge. They will learn to use CAD software to create orthographic and isometric plans for their designs, as well as to 3D print. They will also learn to use graphic design applications and tools to create design solutions.
<b>Learning Goals</b>	
<b>Standard(s):</b>	ITEEA (International Technology and Engineering Educators Association) Standards for Technological and Engineering Literacy (STEL) STEL-7Q. Apply the technology and engineering design process. STEL-7R. Refine design solutions to address criteria and constraints. STEL-7S. Create solutions to problems by identifying and applying human factors in design. STEL-7T. Assess design quality based upon established principles and elements of design. STEL-7U. Evaluate the strengths and weaknesses of different design solutions. STEL-7V. Improve essential skills necessary to successfully design.
<b>Essential Question(s):</b>	<ul style="list-style-type: none"> <li>● How do people use design technology to communicate ideas and concepts?</li> <li>● What are the universal principles and elements of design?</li> <li>● How does the engineering design process apply to creating effective communications?</li> <li>● What skills are needed to carry out technology and engineering design?</li> </ul>
<b>Enduring Understanding(s):</b>	<ul style="list-style-type: none"> <li>● There is no single, correct solution in technology design.</li> <li>● Design in technology and engineering is iterative; designs can always be improved and refined, and failure is an inherent part of the process.</li> <li>● There are universal principles and elements of design</li> <li>● Design optimization is governed by criteria and constraints.</li> </ul>
<b>Learning Goal(s):</b>	<b>Content:</b> (Students will know...)

*Students will know and will be able to use their learning to:*  
(Content/ Skills)

- the technology and engineering design process is an iterative way to solve design challenges.
- basic design elements and principles.

**Skills:** (Students will be able to...)

- use CADD software to produce orthographic and isometric plans of their designs.
- solve a design problem using graphic design tools/software.
- design within provided criteria and constraints and make appropriate trade-offs for optimization.
- revisit steps in the design process to avoid fixation on a single solution.
- evaluate design solutions based on design principles, constraints and criteria.

<b>Unit Number and Title:</b>	Unit 3 - Audio and Video
<b>Duration:</b>	3 weeks
<b>Resource(s):</b>	N/A
<b>Unit Overview:</b>	Students will apply the technology and engineering design process to a design challenge. They will learn to use audio and video software and applications to communicate ideas and concepts (digital storytelling).
<b>Learning Goals</b>	
<b>Standard(s):</b>	ITEEA (International Technology and Engineering Educators Association) Standards for Technological and Engineering Literacy (STEL) STEL-7Q. Apply the technology and engineering design process. STEL-7R. Refine design solutions to address criteria and constraints. STEL-7S. Create solutions to problems by identifying and applying human factors in design. STEL-7T. Assess design quality based upon established principles and elements of design. STEL-7U. Evaluate the strengths and weaknesses of different design solutions. STEL-7V. Improve essential skills necessary to successfully design.
<b>Essential Question(s):</b>	<ul style="list-style-type: none"> <li>• How do people use design technology to communicate ideas and concepts?</li> <li>• How does the engineering design process apply to creating effective communications?</li> <li>• What skills are needed to carry out technology and engineering design?</li> </ul>
<b>Enduring Understanding(s):</b>	<ul style="list-style-type: none"> <li>• There is no single, correct solution in technology design.</li> <li>• Design in technology and engineering is iterative; designs can always be improved and refined, and failure is an inherent part of the process.</li> <li>• There are universal principles and elements of design</li> <li>• Design optimization is governed by criteria and constraints.</li> </ul>
<b>Learning Goal(s):</b> <i>Students will know and will</i>	<b>Content:</b> (Students will know...) <ul style="list-style-type: none"> <li>• the technology and engineering design process is an iterative way to solve design challenges.</li> </ul>

<p><i>be able to use their learning to:</i> (Content/ Skills)</p>	<ul style="list-style-type: none"> <li>● basic design elements and principles</li> </ul> <p><b>Skills:</b> (Students will be able to...)</p> <ul style="list-style-type: none"> <li>● use audio/video software and/or applications to communicate a concept or idea (digital storytelling).</li> <li>● design within provided criteria and constraints and make appropriate trade-offs for optimization.</li> <li>● revisit steps in the design process to avoid fixation on a single solution.</li> <li>● evaluate design solutions based on design principles, constraints and criteria.</li> </ul>
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