



Bristol Public Schools
Office of Teaching & Learning

Department	Career and Technical Education (CTE)
Department Philosophy	Bristol schools believe in providing students with rich opportunities to ensure career and college readiness. These opportunities include development of skills, practices, and exploration within several career clusters and pathways, beginning at the middle school level. Each CTE curriculum enables students to acquire and strengthen leadership, literacy, numeracy, decision-making, computer skills, and technology skills through 11 career clusters and pathways: (1) architecture and construction, (2) business management, (3) education and training, (4) finance, (5) health science, (6) hospitality and tourism, (7) information technology, (8) manufacturing, (9) marketing, (10) transportation, distribution and logistics, and (11) STEM. Each career cluster provides students with access to hand-on experiences that will allow for students development of skills that will support successful transition to their post secondary experiences.
Course	Technology III-Engineering, Construction, Graphic Communications
Course Description for Program of Studies	8th Grade Technology is an elective course designed to provide students further exploration and experience in technical career pathways. Students will deepen their understanding of the building blocks of society through Engineering, Construction, and an introduction to Graphic Communications. Project based learning will guide students to a deeper understanding of technical career field opportunities. Students will comprehend their individually unique skill sets in relation to industry and how their distinct skills are beneficial to industry and society.
Grade Level	8
Pre-requisites	None
Credit (if applicable)	

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Module 1: Engineering

UNWRAPPED STANDARDS

Advance CTE Standard	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL 1 Nature and Characteristics of Technology and Engineering	<ul style="list-style-type: none"> ● 1J. Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants. ● 1K. Compare and contrast the contributions of science, engineering, mathematics, and technology in the development of technological systems. ● 1L. Explain how technology and engineering are closely linked to creativity, which can result in both intended and unintended innovations. ● 1M. Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches. 	<ul style="list-style-type: none"> ● Understand the components of the design process. ● Consider constraints and limitations in design and prototype. ● Communicate the specifications of the design and product. ● Define the ways in which the design meets the constraints and limitations of the problem. ● Generate and assess a prototype. ● Record and reflect on the design process in the google portfolio. 	<ul style="list-style-type: none"> ● Accuracy ● Analysis ● Argument ● Assessment ● Causation ● Claim ● Communicate ● Constraints ● Control ● Correlation ● Criteria Design (v.) ● Error Diagram (n.) ● Effectiveness ● Efficiency ● Function ● Evaluate ● Evidence ● Failure ● Inference ● Hypothesis ● Impact (n.) ● Implication ● Model ● Observation ● Investigate Limit ● Performance ● Plan (n.) ● Parallax ● Patterns ● Problem ● Process ● Precision ● Predict ● Quantitative Reasoning
STEL 5 Influence of Society on Technological Development	<ul style="list-style-type: none"> ● 5F. Analyze how an invention or innovation was influenced by its historical context. ● 5G. Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors. 		
STEL 7 Design in Technology and Engineering Education	<ul style="list-style-type: none"> ● 7P. Illustrate the benefits and opportunities associated with different approaches to design. ● 7Q. Apply the technology and engineering design process. ● 7R. Refine design solutions to address criteria and constraints. ● 7S. Create solutions to problems by identifying and applying human factors in design. ● 7T. Assess design quality based upon established principles and elements of design. ● 7U. Evaluate the strengths and weaknesses of different design solutions. ● 7V. Improve essential skills necessary to 		

	successfully design.		
ISTE 1.4 Innovative Designer Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.	<ul style="list-style-type: none"> ● 1.4.a-Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems. ● 1.4.b-Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks. ● 1.4.c-Students develop, test and refine prototypes as part of a cyclical design process. ● 1.4.d-Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems. 		<ul style="list-style-type: none"> ● Prototype ● Qualitative ● Relevance ● Reliability ● Refine ● Reflect ● Requirements ● Scale ● Repeatability ● Reproducibility ● Test (v.) ● Theory ● Simulation ● Specifications (Specs) ● Uncertainty ● Variability ● Trade-Off ● Trueness
Advance CTE ACC01 Architecture and Construction	<ul style="list-style-type: none"> ● ACC01.01.04 Use appropriate formulas to determine ratios, fractions, and proportion measures. ● ACC01.01.05 Use appropriate formulas to determine measurements of dimensions, spaces and structures. 		

Module 1: Engineering

Essential Questions:

- What are the different types of engineering careers?
- How does the design process support innovation?
- How does the design process ensure a product that solves the problem?
- What are the safety protocols for the makerspace?
- What is the importance of design specifications and measurements?
- What engineering opportunities are available to me at the high school level?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy		Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
STEL ISTE	<ul style="list-style-type: none">• I can explore the careers in engineering and explain their importance.• I can understand the opportunities available for the continued study of engineering at the high school level.		<table><tr><td></td><td>Selected Response (SR)</td></tr><tr><td>x</td><td>Constructed Response (CR)</td></tr><tr><td></td><td>Performance (P)</td></tr><tr><td>X</td><td>Observation (O)</td></tr></table>		Selected Response (SR)	x	Constructed Response (CR)		Performance (P)	X	Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none">• <i>1K. Compare and contrast the contributions of science, engineering, and technology in the development of technological systems.</i>• <i>3G. Explain how knowledge gained from other content areas affects the development of technological products and systems.</i>• <i>6E. Verify how specialization of function has been at the heart of many technological improvements.</i>	Mandatory Lessons/Activities: <ul style="list-style-type: none">• <i>Explanation and research of different careers and research.</i>
	Selected Response (SR)												
x	Constructed Response (CR)												
	Performance (P)												
X	Observation (O)												
Pacing:	1 block			CCSS Connections: <ul style="list-style-type: none">•	Assessments: <ul style="list-style-type: none">• <i>Portfolio Addition</i>								
STEL ISTE	<ul style="list-style-type: none">• I can demonstrate safe behaviors and actions within the makerspace.• I can explain and accomplish safety procedures in the event of an emergency.• I can locate and describe how to use the essential safety equipment in the makerspace.		<table><tr><td></td><td>Selected Response (SR)</td></tr><tr><td>x</td><td>Constructed Response (CR)</td></tr><tr><td>x</td><td>Performance (P)</td></tr><tr><td>x</td><td>Observation (O)</td></tr></table>		Selected Response (SR)	x	Constructed Response (CR)	x	Performance (P)	x	Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none">• <i>TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects.</i>• <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i>	Mandatory Lessons/Activities: <ul style="list-style-type: none">• <i>Students will receive a review of the safety protocols necessary to work in the makerspace.</i>• <i>Students will complete a safety contract.</i>
	Selected Response (SR)												
x	Constructed Response (CR)												
x	Performance (P)												
x	Observation (O)												
Pacing:	1 Block			CSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.3</i>	Assessments: <ul style="list-style-type: none">• <i>Safety Contract completion</i>								

			<ul style="list-style-type: none">Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	and safety quiz								
STEL ISTE	<ul style="list-style-type: none">I can apply the engineering design process to solve a problem.I can understand the criteria and constraints related to the problem I need to solve.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance (P)</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response		Constructed Response	x	Performance (P)		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">1.4.a-Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.1.4.d-Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.7Q. Apply the technology and engineering design process.7R. Refine design solutions to address criteria and constraints.7S. Create solutions to problems by identifying and applying human factors in design.7T. Assess design quality based upon established principles and elements of design.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will design a mock-up of a prototype using the engineering design process.
	Selected Response											
	Constructed Response											
x	Performance (P)											
	Observation											
Pacing:	1 block		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.3 <ul style="list-style-type: none">Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	Assessments: <ul style="list-style-type: none">Completion of prototype design								
STEL ISTE	<ul style="list-style-type: none">I can accurately measure to the nearest 1/16 " using a measuring device.I can create a physical prototype of my design and accurately communicate its measurements using the 1/16" scale.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>		Selected Response		Constructed Response	x	Performance	x	Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">ACC01.01.04 Use appropriate formulas to determine ratios, fractions, and proportion measures.ACC01.01.05 Use appropriate formulas to determine measurements of dimensions, spaces and structures.1.4.c-Students develop, test and refine prototypes as part of a cyclical design process.1.4.d-Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will use measuring devices to accurately measure their prototypes.
	Selected Response											
	Constructed Response											
x	Performance											
x	Observation											
Pacing:	2 Blocks		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.3 <ul style="list-style-type: none">Follow precisely a multistep procedure when	Assessments: <ul style="list-style-type: none">Build prototypeProvide specifications for the								

			<i>carrying out experiments, taking measurements, or performing technical tasks.</i>	<i>prototype within 1/16 of an inch accuracy.</i>								
STEL ISTE	<ul style="list-style-type: none">● I can construct, safely test, and evaluate a prototype.● I can explain how my design and prototype meet the criteria and constraints of the problem	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr><tr><td>X</td><td>Performance</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response	x	Constructed Response	X	Performance		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● 7U. Evaluate the strengths and weaknesses of different design solutions.● 7V. Improve essential skills necessary to successfully design.● 1.4.a-Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.● 1.4.b-Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.● 1.4.c-Students develop, test and refine prototypes as part of a cyclical design process.● 1.4.d-Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.	Mandatory Lessons/Activities: <ul style="list-style-type: none">● Students will test their prototypes to evaluate their design.
	Selected Response											
x	Constructed Response											
X	Performance											
	Observation											
Pacing:	5 Blocks		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.3</i> <ul style="list-style-type: none">● Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	Assessments: <ul style="list-style-type: none">● Successful completion of testing.								
STEL ISTE	<ul style="list-style-type: none">● I can record my learning on my google site portfolio.● I can complete a reflection about engineering and define my interest in future study of the topic.	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr><tr><td>X</td><td>Performance</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response	x	Constructed Response	X	Performance		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● (3c)-Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.● (6C)-Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.● (6D)-Students publish or present content that customizes the message and medium for their intended audiences.	Mandatory Lessons/Activities: <ul style="list-style-type: none">● Students will create a document that will demonstrate their knowledge of the Engineering Design Process.
	Selected Response											
x	Constructed Response											
X	Performance											
	Observation											
Pacing:	1 Block		CCSS Connections:	Assessments:								

			<ul style="list-style-type: none">•	<ul style="list-style-type: none">• Document showcasing the components of the design process and its application to the design problem.
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Module 2: Graphic Communications

UNWRAPPED STANDARDS

Advance CTE Standard	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL 2 Core Concepts of Technology and engineering	<ul style="list-style-type: none"> ● 2N. Illustrate how systems thinking involves considering relationships between every part, as well as how the system interacts with the environment in which it is used. ● 2Q. Predict outcomes of a future product or system at the beginning of the design process. ● 2S. Defend decisions related to a design problem. 	<ul style="list-style-type: none"> ● Students will apply elements of graphic design to constructing a marketing brochure for a home. ● Students will ensure the use of the design elements in their marketing piece. ● Students will use software to develop and publish their graphic design piece. ● Students will assess their marketing pieces to ensure the use of the elements of graphic design. ● Students will reflect on the use of the elements of design and how they improved the final marketing product. 	<ul style="list-style-type: none"> ● <i>Alignment</i> ● <i>Bleed</i> ● <i>DPI</i> ● <i>Focal Point</i> ● <i>Grid</i> ● <i>Illustrator (Adobe)</i> ● <i>PhotoShop (Adobe)</i> ● <i>Kerning</i> ● <i>Line</i> ● <i>Negative Space</i> ● <i>Raster images</i> ● <i>RGB</i> ● <i>Six elements of design</i> ● <i>Typography</i> ● <i>Texture</i> ● <i>Vector image</i> ● <i>GIF</i> ● <i>Gradient</i> ● <i>Pixelation</i> ● <i>Asymmetrical</i> ● <i>Symmetrical</i> ● <i>Baseline</i> ● <i>Contrast</i> ● <i>Copy</i> ● <i>Crop</i> ● <i>Drop shadow</i> ● <i>Element</i> ● <i>Fill</i> ● <i>Font</i> ● <i>Gradient</i> ● <i>Gutter</i> ● <i>Mock up</i> ● <i>Sharpen</i> ● <i>Spread</i>
STEL 7 Design in Technology and Engineering Education	<ul style="list-style-type: none"> ● 7Q. Apply the technology and engineering design process. ● 7R. Refine design solutions to address criteria and constraints. ● 7T. Assess design quality based upon established principles and elements of design. ● 7V. Improve essential skills necessary to successfully design. 		
Technology and Engineering Practices	<ul style="list-style-type: none"> ● TEP-2 (creativity)-Exhibits innovative and original ideas in the context of design-based activities. ● TEP-6 (collaboration)-Demonstrated productive teamwork in design-based projects. ● TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills. 		
ISTE 1.5 Computational Thinker Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.	<ul style="list-style-type: none"> ● 1.5.a-Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions. ● 1.5.b-Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making. 		

	<ul style="list-style-type: none"> ● 1.5.c-Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving. ● 1.5.d-Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions. 		<ul style="list-style-type: none"> ● <i>Text wrap</i>
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Module 2: Graphic Communications

Essential Questions:

- What careers require graphic design skills?
- How does software and technology support graphic designers?
- How does the incorporation of the elements of design improve the final product?
- What is the relationship between marketing and graphic design?
- What engineering opportunities are available to me at the high school level?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
STEL ISTE	<ul style="list-style-type: none">● I can explore the careers in graphic design and explain their importance.● I can understand the opportunities available for the continued study of graphic design at the high school level.	<table><tr><td></td><td>Selected Response (SR)</td></tr><tr><td></td><td>Constructed Response (CR)</td></tr><tr><td></td><td>Performance (P)</td></tr><tr><td></td><td>Observation (O)</td></tr></table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)		Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● <i>1K.Compare and contrast the contributions of science, engineering, and technology in the development of technological systems.</i>● <i>3G. Explain how knowledge gained from other content areas affects the development of technological products and systems.</i>	Mandatory Lessons/Activities: <ul style="list-style-type: none">● <i>Explanation and research of different careers in graphic design.</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
	Observation (O)											
Pacing:	1 Block		CCSS Connections: <ul style="list-style-type: none">●	Assessments: <ul style="list-style-type: none">● <i>Portfolio</i>								
STEL ISTE	<ul style="list-style-type: none">● I can explore graphic design software.● I can use the graphic design software to complete a simple project.	<table><tr><td></td><td>Selected Response (SR)</td></tr><tr><td></td><td>Constructed Response (CR)</td></tr><tr><td></td><td>Performance (P)</td></tr><tr><td>X</td><td>Observation (O)</td></tr></table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)	X	Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● <i>7Q. Apply the technology and engineering design process.</i>● <i>1.5.a-Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</i>● <i>1.5.c-Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.</i>	Mandatory Lessons/Activities: <ul style="list-style-type: none">● <i>Introduction to graphic design lessons and software exploration.</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
X	Observation (O)											
Pacing:	1 Blocks		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.7</i> <ul style="list-style-type: none">● <i>Integrate quantitative or technical information</i>	Assessments: <ul style="list-style-type: none">● <i>Final product.</i>								

			<i>expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</i>									
STEL ISTE	<ul style="list-style-type: none">I can use graphic design software to complete an introductory project.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance (P)</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response		Constructed Response	x	Performance (P)		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">7Q. Apply the technology and engineering design process.7T. Assess design quality based upon established principles and elements of design.7V. Improve essential skills necessary to successfully design.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will design a document that will demonstrate their knowledge of graphic design.
	Selected Response											
	Constructed Response											
x	Performance (P)											
	Observation											
Pacing:	2 Blocks		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.7</i> <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Document displaying the criteria for the graphic design project.								
STEL ISTE	<ul style="list-style-type: none">I can accurately find the value of the home based on a house of my choice.I can create a brochure advertising a home that is for sale.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>		Selected Response		Constructed Response	x	Performance	x	Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">TEP-2 (creativity)-Exhibits innovative and original ideas in the context of design-based activities.TEP-6 (collaboration)-Demonstrated productive teamwork in design-based projects.TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.7Q. Apply the technology and engineering design process.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Research of various home prices in the area.Creation of brochures in graphic design software.
	Selected Response											
	Constructed Response											
x	Performance											
x	Observation											
Pacing:	3 Blocks		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.7</i> <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Spreadsheet of houses that list the locations and price of various homes.Construct brochure draft								
STEL ISTE	<ul style="list-style-type: none">I can assess my home sale brochure for elements of design.I can use my knowledge of the elements of design to refine my home sale brochure.	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr></table>		Selected Response	x	Constructed Response	Lesson Progression and Standards Connection: <ul style="list-style-type: none">7T. Assess design quality based upon established principles and elements of design.7V. Improve essential skills necessary to successfully design.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Creation of brochure in photoshop incorporating the elements of design.				
	Selected Response											
x	Constructed Response											

	<ul style="list-style-type: none">I can reflect on the differences between my original brochure and my refined brochure and predict the impact on marketing the home.	<table><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>	x	Performance	x	Observation						
x	Performance											
x	Observation											
Pacing:	2 Blocks		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7 <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Final Completion of Brochure								
STEL ISTE	<ul style="list-style-type: none">I can record my learning on my google site portfolio.I can complete a reflection about graphic design and define my interest in future study of the topic.	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr><tr><td>X</td><td>Performance</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response	x	Constructed Response	X	Performance		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">(3c)-Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.(6C)-Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.(6D)-Students publish or present content that customizes the message and medium for their intended audiences.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will create a document that will demonstrate their knowledge of graphic design.
	Selected Response											
x	Constructed Response											
X	Performance											
	Observation											
Pacing:	1 Block		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7 <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Document showcasing the components of the design process and its application to the design problem.								

Module 3: Construction

UNWRAPPED STANDARDS

Advance CTE Standard	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
<p>Advance CTE</p> <ul style="list-style-type: none"> ● AC 1.2: Utilize vocabulary and visual cues in context of design and construction situations. ● AC 6.1: Interpret drawings used in project planning. ● AC 6.2: Recognize how specifications and standards are arranged for proper access. ● AC 6.3: Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work. ● AC 6.4: Describe the written standards and specifications that apply. 	<ul style="list-style-type: none"> ● Confirm understanding of verbal and visual instructions. ● Ask questions concerning details of instructions. ● Perform assignments as requested. ● Recognize elements and symbols of blueprints and drawings ● Use specifications and standards. ● Apply specifications and standards appropriately. ● Sketch/draw/illustrate concepts and ideas. ● Draw or sketch plan/layout to be completed. ● Use proper measurements to determine layout. ● Interpret and explain standards and specifications. 	<ul style="list-style-type: none"> ● Use design software ● Compare and contrast elements of design for different home styles ● Create a home design following an architectural style. ● Create a balsa wood prototype of that home design. ● Understand the elements required in framing a structure and transfer knowledge to balsa wood prototype. ● Ensure proper finishing of the prototypes. 	<ul style="list-style-type: none"> ● Adhesion ● Adhesive ● Annual growth ring ● Beam ● Bearing ● Board ● Bow ● Brace ● Building area ● Building height ● Cantilever ● Chalking ● Compression ● Cure ● Filler ● Fine finish ● Finger joint ● Gloss ● Grade ● Grain ● Joint-butt ● Joint-end ● Joist ● Knot ● Laminate ● Lumber ● Interior ● Exterior ● Rafter ● Rip ● Varnish ● Warp
STEL 7 Design in Technology and Engineering Education	<ul style="list-style-type: none"> ● 7P. Illustrate the benefits and opportunities associated with different approaches to design. ● 7Q. Apply the technology and engineering design process. ● 7T. Assess design quality based upon established principles and elements of design. ● 7U. Evaluate the strengths and weaknesses of different design solutions. ● 7V. Improve essential skills necessary to successfully design. 		
Technology and Engineering Practices	<ul style="list-style-type: none"> ● TEP-2 (creativity)-Exhibits innovative and original ideas in the context of design-based activities. ● TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects. ● TEP-5 Critiques technological products and systems to identify areas of improvement. ● TEP-6 (collaboration)-Demonstrated productive teamwork in design-based projects. ● TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral 		

	<i>communication skills.</i>		
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Module 3: Construction

Essential Questions

- What are the careers in the construction field?
- What does it mean to have an architectural style?
- How does design software support and inform those in a construction career?
- What are the similarities and differences for a floor plan to an elevation plan?
- How do you translate from a set of plans to a finished product?
- How do you translate a design to balsa wood prototype?
- What wood working techniques are required in framing a structure?
- What architecture and construction opportunities are available to me at the high school level?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
STEL ISTE	<ul style="list-style-type: none">● I can explore the careers in construction and explain their importance.● I can understand the opportunities available for the continued study of construction at the high school level.	<table><tr><td></td><td>Selected Response (SR)</td></tr><tr><td></td><td>Constructed Response (CR)</td></tr><tr><td></td><td>Performance (P)</td></tr><tr><td></td><td>Observation (O)</td></tr></table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)		Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● <i>1K.Compare and contrast the contributions of science, engineering, and technology in the development of technological systems.</i>● <i>3G. Explain how knowledge gained from other content areas affects the development of technological products and systems.</i>	Mandatory Lessons/Activities: <ul style="list-style-type: none">● <i>Explanation and research of different careers in graphic design.</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
	Observation (O)											
Pacing:	1 Block		CCSS Connections: <ul style="list-style-type: none">●	Assessments: <ul style="list-style-type: none">● <i>Portfolio</i>								
STEL ISTE	<ul style="list-style-type: none">● I can explore construction design software.● I can create a floor plan that meets required specifications.	<table><tr><td></td><td>Selected Response (SR)</td></tr><tr><td>x</td><td>Constructed Response (CR)</td></tr><tr><td>x</td><td>Performance (P)</td></tr><tr><td></td><td>Observation (O)</td></tr></table>		Selected Response (SR)	x	Constructed Response (CR)	x	Performance (P)		Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● <i>Confirm understanding of verbal and visual instructions.</i>● <i>Ask questions concerning details of instructions.</i>● <i>Perform assignments as requested.</i>● <i>Recognize elements and symbols of blueprints and drawings</i>● <i>Use specifications and standards.</i>● <i>Apply specifications and standards appropriately.</i>● <i>Sketch/draw/illustrate concepts and ideas.</i>● <i>Draw or sketch plan/layout to be completed.</i>	Mandatory Lessons/Activities: <ul style="list-style-type: none">● <i>Creation of floor plan using a floor plan program.</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											

			<ul style="list-style-type: none">● Use proper measurements to determine layout.● Interpret and explain standards and specifications.									
Pacing:	1 Block		CCSS Connections: <ul style="list-style-type: none">●	Assessments: <ul style="list-style-type: none">● Creation of floor plan.								
STEL ISTE	<ul style="list-style-type: none">● I can compare and contrast the design elements of architectural house styles.	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance (P)</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response	x	Constructed Response	x	Performance (P)		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● Recognize elements and symbols of blueprints and drawings● 7P. Illustrate the benefits and opportunities associated with different approaches to design.● 7Q. Apply the technology and engineering design process.● 7T. Assess design quality based upon established principles and elements of design.● 7U. Evaluate the strengths and weaknesses of different design solutions.	Mandatory Lessons/Activities: <ul style="list-style-type: none">● Research of various house styles in the area
	Selected Response											
x	Constructed Response											
x	Performance (P)											
	Observation											
Pacing:	2 Blocks		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7 <ul style="list-style-type: none">● Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">● Google slideshow of different house styles researched.								
STEL ISTE	<ul style="list-style-type: none">● I can explain the difference between an elevation and a floor plan.● I can read and understand the basic elements of a floor plan.● I can read and understand the basic elements of an elevation plan.	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>		Selected Response	x	Constructed Response	x	Performance	x	Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">● Recognize elements and symbols of blueprints and drawings● Use specifications and standards.● Draw or sketch plan/layout to be completed.● Use proper measurements to determine layout.● Interpret and explain standards and specifications.	Mandatory Lessons/Activities: <ul style="list-style-type: none">● Students will differentiate between elevation plans and floor plans
	Selected Response											
x	Constructed Response											
x	Performance											
x	Observation											
Pacing:	1 Block		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7 <ul style="list-style-type: none">● Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">● Exit ticket.								

STEL ISTE	<ul style="list-style-type: none">I can select a home design and make a plan to construct a structure to represent that design to the specifications.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>		Selected Response		Constructed Response	x	Performance	x	Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">Recognize elements and symbols of blueprints and drawingsUse specifications and standards.Draw or sketch plan/layout to be completed.Use proper measurements to determine layout.Interpret and explain standards and specifications.TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Design and process of building a model of the project.
	Selected Response											
	Constructed Response											
x	Performance											
x	Observation											
Pacing:	2 Blocks		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7 <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Model of project.								
STEL ISTE	<ul style="list-style-type: none">I can safely follow instructions on how to properly use tools and materials in the Makerspace.I can construct a structure to represent my home design to the specifications.I can accurately measure to the nearest 1/16" using a measuring device to ensure my project meets specifications.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>		Selected Response		Constructed Response	x	Performance	x	Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">Recognize elements and symbols of blueprints and drawingsUse specifications and standards.Draw or sketch plan/layout to be completed.Use proper measurements to determine layout.Interpret and explain standards and specifications.TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will use the appropriate tools in order to build their model of the project.Students will use measuring devices to accurately measure their prototypes.
	Selected Response											
	Constructed Response											
x	Performance											
x	Observation											
Pacing:	6 blocks		CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7 <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Model of project.Final prototype with 1/16 of an inch accuracy.								
STEL ISTE	<ul style="list-style-type: none">I can safely follow instructions on how to properly use tools and materials in the Makerspace.I can add a finish to my project.	<table><tr><td></td><td>Selected Response</td></tr><tr><td></td><td>Constructed Response</td></tr></table>		Selected Response		Constructed Response	Lesson Progression and Standards Connection: <ul style="list-style-type: none">TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will prepare their prototype for proper finishing.				
	Selected Response											
	Constructed Response											

Pacing:	1 Block	<table><tr><td>x</td><td>Performance</td></tr><tr><td>x</td><td>Observation</td></tr></table>	x	Performance	x	Observation	CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.7</i> <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Finished product				
x	Performance											
x	Observation											
STEL ISTE	<ul style="list-style-type: none">I can record my learning on my google site portfolio.I can complete a reflection about graphic design and define my interest in future study of the topic.	<table><tr><td></td><td>Selected Response</td></tr><tr><td>x</td><td>Constructed Response</td></tr><tr><td>X</td><td>Performance</td></tr><tr><td></td><td>Observation</td></tr></table>		Selected Response	x	Constructed Response	X	Performance		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none">(3c)-Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.(6C)-Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.(6D)-Students publish or present content that customizes the message and medium for their intended audiences.	Mandatory Lessons/Activities: <ul style="list-style-type: none">Students will create a document that will demonstrate their knowledge of graphic design.
	Selected Response											
x	Constructed Response											
X	Performance											
	Observation											
Pacing:	1 Block		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.7</i> <ul style="list-style-type: none">Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).	Assessments: <ul style="list-style-type: none">Document showcasing the components of the design process and its application to the design problem.								