

Student Achievement Committee
Wednesday, October 20, 2021 6:30 PM

Via Zoom Meeting Platform
129 Church Street
Bristol, CT 06010

Agenda

- I. Call to Order
- II. Decision: Approval of Minutes from September 1, 2021 meeting
- III. Public Comment
- IV. Discussion
- V. Information: New Curriculum, *Baking and Patisserie*
Presenter: Dr. Rechenberg
- VI. Decision: Curriculum Revision, *MS CTE, grades 6-8*
Presenter: Dr. Rechenberg
- VII. Decision: Curricula Revision, STEM Minor Revisions
Presenter: Dr. Rechenberg
- VIII. Information: New curriculum, *A Cappella*
Presenter: Dr. Sarli
- IX. Information: New curriculum, *Jazz Band*
Presenter: Dr. Sarli
- X. Information: New curriculum, *Digital Music*
Presenter: Dr. Sarli



Student Achievement Committee (Special Meeting)
September 1, 2021
MINUTES - DRAFT

Present: Catherine Carbone, Michael Dietter, Jennifer Dube, Carly Fortin, Kristen Giantonio, Molly Goodine, Mike Higgins, Kristen Peck, Shelby Pons, Jaime Rechenberg, Azra Redzic, Jillian Romann, Samantha Sarli, Melanie Vetrano, Allison Wadowski, Leszek Ward, Christopher Wilson, Pete Wininger

Call to Order:

Commissioner Wilson called the meeting to order at 6:30pm and reviewed the norms. Prior to next month's meeting, we will review an article from the Center of School Change, shared by Commissioner Wilson, and have a small discussion during the October meeting.

Approval of Minutes from June, 16 2021

On a motion made by Shelby Pons and seconded by Allison Wadowski, it was unanimously;

VOTED: To approve the Minutes of June 16, 2021.

Information: Extracurricular participation in athletics from 20-21:

Principal Higgins, Bristol Eastern High School and Principal Wininger, Bristol Central High School presented athletic participation data. It is important to note that the participation rates were down due to COVID-19. Carly Fortin added that the data is based on athletic participation not club participation. Bristol high schools don't yet have a formal system to track extracurricular club participation but will be working to implement a system this year.

Commissioner Giantonio requested more information and tracking on the adaptive programs.

Information: Colleges of Class of 2021:

Principal Wininger, Bristol Central High School, shared that 68% of the students chose a 2 or 4 year college experience after high school. Some highlights include Yale University and the University of Connecticut. Principal Higgins, Bristol Eastern High School, shared similar data in that 69% of students chose a 2 or 4 year college.

Decision: Revision of Biotechnology and Forensics:

Dr. Jaime Rechenberg, Secondary STEM Supervisor presented the curriculum revision. The revision came in a name change. Originally, it was known as biotechnology, and we have extended it to include Forensic Science. The Forensic Science curriculum has been enhanced and more robust.

On a motion made by Shelby Pons to move this to the full board with recommendation of approval and seconded by Kristen Giantonio, it was unanimously;

VOTED: To approve the Revision of Biotechnology and Forensics curriculum.

Decision: Revision of Physics:

Dr. Rechenberg presented the revision of the Physics curriculum. Physics has not been revised since before 2006. Bristol Public Schools wanted to make our Physics course inviting to students so that they could see the potential of the learning that could happen within our laboratory spaces.

On a motion made by Shelby Pons to move this to the full board with recommendation of approval and seconded by Kristen Giantonio, it was unanimously;

VOTED: To approve the Revision of Physics curriculum.

Decision: Revision of AP Biology:



Dr. Rechenberg presented the revision of the AP Biology curriculum. The College Board adapted their curriculum in 2018 and we decided to follow the AP guidance. The course provides students with a college-level foundation.

On a motion made by Kristen Giantonio to move this to the full board with recommendation of approval and seconded by Shelby Pons, it was unanimously;

VOTED: To approve the Revision of AP Biology curriculum.

Decision: Revision ECE Biology:

Dr. Rechenberg presented the revision of the ECE Biology curriculum. This course is equivalent to UConn's 1107 course. The students have the ability to earn three UConn credits or one Bristol credit. There are specific expectations that students have to meet in order to gain the three UConn credits.

Questions and discussion followed in regards to our teachers receiving additional education to teach an AP/ECE course.

On a motion made by Kristen Giantonio to move this to the full board with recommendation of approval and seconded by Shelby Pons, it was unanimously;

VOTED: To approve the Revision of ECE Biology curriculum.

Decision: Revision of Anatomy and Physiology:

Dr. Rechenberg presented the revision of the Anatomy and Physiology curriculum. In the past, we've run Anatomy and Physiology as an academic level course. Now, Bristol Public Schools has decided to make this a Challenge by Choice course. This term means that our course will meet the demands and needs for students wishing to receive accelerated credit, as well as meeting the needs for students to achieve academic level credit. Students can choose learning extensions to earn accelerated credit.

Carly Fortin shared that this is an equity move for Bristol Public Schools because all students are able to take this course and then decide, after they have begun their learning, if they want to pursue the accelerated credit.

On a motion made by Shelby Pons to move this to the full board with recommendation of approval and seconded by Kristen Giantonio, it was unanimously;

VOTED: To approve the Revision of Anatomy and Physiology curriculum.

Decision: Revision of K-2 Social Studies:

Azra Redzic, Elementary Humanities Supervisor presented the revision of the K-2 Social Studies curriculum. The revision was designed to ensure that all K-2 classrooms engage in high-quality Social Studies instruction and follows the CT SS and C3 frameworks. Mrs. Fortin highlighted that we did set aside our Title IV funds for the purpose of reinvigorating resource materials. There are a wide variety of reading levels that are a multi-cultural resource that reflects the diversity within our community.

On a motion made by Shelby Pons to move this to the full board with recommendation of approval and seconded by Kristen Giantonio, it was unanimously;

VOTED: To approve the Revision of K-2 Social Studies curriculum.

Questions and discussion followed regarding the positive robust additions to the revision.

Discussion: September Student Achievement Committee Date:

Discussion followed regarding meeting date conflicts. Mrs. Fortin shared that if we don't hold another meeting in September, we will post that the September Student Achievement Committee meeting is cancelled. It was agreed that the September meeting will be cancelled.

There being no further discussion, Commissioner Wilson adjourned the meeting at 8:00pm.

Respectfully submitted,



Gabby Nicoletti
Gabby Nicoletti



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. 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	Baking and Pâtisserie
Course Description for Program of Studies	The course is an introduction to baking and pastry with intensive hands-on laboratory training. Laboratory classes emphasize basic ingredients and production techniques for breads, rolls, folded doughs, batters, basic cakes, cake decorating, pies, and cookies.
Grade Level	10-12
Pre-requisites	Introduction to Foods and Nutrition
Credit (if applicable)	0.5

Table of Contents

[Curricular Theme: Safety and Sanitation](#)

[Curricular Theme: Careers and Employability](#)

[Curricular Theme: Planning, Preparation, and Production](#)

[Recipes: Baking and Patisserie](#)

Curricular Theme: Safety and Sanitation

UNWRAPPED STANDARDS

<u>Advance CTE Standard</u>	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
HTC06.05: Review safety and sanitation procedures applicable to the work area to ensure a safe and healthy work environment.	<ul style="list-style-type: none"> ● HTC06.05.01: Examine overall safety procedures to maintain safe work areas in hospitality and tourism workplaces. ● HTC06.05.03 Practice personal safety while at the work site and on work related assignments to avoid injuries or accidents. 	<ul style="list-style-type: none"> ● Classify different types of fires and how to contain them. ● Identify proper fire evacuation procedures. ● Outline proper response to emergency situations. ● Use appropriate safety equipment and clothing. ● Demonstrate safe use of equipment commonly used in hospitality and tourism. 	Safety Sanitation
HTC06.07 Analyze the potential effects caused by common chemicals and hazardous materials used in the hospitality and tourism industry in order to prevent health problems that may result from exposure to these elements.	<ul style="list-style-type: none"> ● HTC06.07.01 Follow industry standards to comply with safety polices and procedures. 	<ul style="list-style-type: none"> ● Apply Hazcom and Hazardous Material practices and MSDS Procedures for handling and disposing of chemicals. ● Illustrate compliance with OSHA safety regulations and practices. 	Chemical Hazardous Material MSDS OSHA
HTC06.03 Assess types and sources of workplace hazards common to hospitality and tourism work settings in order to demonstrate a working understanding of key health and safety concerns.	<ul style="list-style-type: none"> ● HTC06.03.01 Demonstrate methods to correct common hazards 	<ul style="list-style-type: none"> ● Identify and describe common hazards in the workplace. ● Identify and describe major sources of information about hazards in the workplace (e.g., MSDS, work procedures, exposure control plans, training materials, labels, and signage). Identify sources of combustible/flammable materials, fire and emergencies to establish a fire safe environment. ● Interpret safety signs and symbols. 	Hazard

<p>NASAFACS: 8.2 Demonstrate food safety and sanitation procedures</p>	<ul style="list-style-type: none"> ● 8.2.1 Identify characteristics of major food borne pathogens, their role in causing illness, foods involved in outbreaks, and methods of prevention. ● 8.2.6 Demonstrate proper purchasing, receiving, storage, and handling of both raw and prepared foods. ● 8.2.7 Demonstrate safe food handling and preparation techniques that prevent cross contamination from potentially hazardous foods, between raw and ready-to-eat foods, and between animal and fish sources and other food products. ● 8.2.10 Demonstrate safe and environmentally responsible waste disposal and recycling methods. ● 8.2.11 Demonstrate ability to maintain necessary records to document time and temperature control, HACCP, employee health, maintenance of equipment, and other elements of food preparation, storage, and presentation. 		<p>Pathogens Foodborne illness Cross contamination Temp sheets Cleaning sheets</p>
<p>NASAFACS: 8.3 Demonstrate industry standards in selecting, using, and maintaining food production and food service equipment.</p>	<ul style="list-style-type: none"> ● 8.3.1 Operate tools and equipment following safety procedures and OSHA requirements. ● 8.3.2 Maintain tools and equipment following safety procedures and OSHA requirements. ● 8.3.3 Demonstrate procedures for cleaning and sanitizing equipment, serving dishes, glassware, and utensils to meet industry standards and OSHA requirements. ● 8.3.5 Demonstrate procedures for safe and secure storage of equipment and tools. ● 8.3.6 Identify a variety of types of equipment for food processing, cooking, holding, storing, and serving, including hand tools and small ware. 		<p>Cleaning Sanitizing</p>
<p>NASAFACS: 8.6 Demonstrate implementation of food service management and leadership functions.</p>	<ul style="list-style-type: none"> ● 8.6.1 Apply principles of purchasing, receiving, issuing, and storing in food service operations. ● 8.6.2 Practice inventory procedures including first in/first out concept, date marking, and specific record keeping. ● 8.6.10 Apply principles of inventory management, labor cost and control techniques, 		<p>Receiving Inventory FIFO Date Marking Record keeping Inventory management</p>

	production planning and control, and facilities management to front and back of the house operations.		
--	---	--	--

Curricular Theme-Safety and Sanitation

Theme Narrative: The contents of this unit are interwoven throughout the Baking and Patisserie course. Students are provided an overview of major safety and sanitation procedures prior to engineering the culinary lab. Throughout the course, students will deepen their understanding of safety and sanitation processes and procedures as they interweave them with baking skills.

Essential Questions:

- What are the characteristics and qualities of a safe kitchen?
- What are common kitchen hazards and chemicals?
- How can you mitigate common hazards in a culinary environment?
- What are food borne pathogens and how can they be prevented in a kitchen?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
HTC06.05	<ul style="list-style-type: none"> ● I can understand and explain safety procedures and precautions to maintain a safe work environment. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)		Performance (P)	x	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● HTC06.05.01: Examine overall safety procedures to maintain safe work areas in hospitality and tourism workplaces. ● HTC06.05.03 Practice personal safety while at the work site and on work related assignments to avoid injuries or accidents. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Safety and sanitation learning targets and skills are embedded with all content throughout this course. Focus on specific elements of safety and sanitation will vary based on concepts and skills required in the unit taught.</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
	Performance (P)											
x	Observation (O)											
Pacing:	<ul style="list-style-type: none"> ● 1 block-General safety procedures and precautions. ● Ongoing-application of content as required by planned lab experiences. 		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● CCSS.ELA-LITERACY.RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Observation/assessment of safe and sanitary actions within the culinary lab and pre/post lab quizzes.</i> 								
HTC06.03 HTC06.07	<ul style="list-style-type: none"> ● I can identify and correct common kitchen hazards and chemicals. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)		Performance (P)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● HTC06.03.01 Demonstrate methods to correct common hazards ● HTC06.07.01 Follow industry standards to comply with safety policies and procedures. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Safety and sanitation learning targets and skills are embedded with all content throughout this course. Focus on specific elements of safety and sanitation will vary based on concepts and skills required in the unit taught.</i> 		
	Selected Response (SR)											
x	Constructed Response (CR)											
	Performance (P)											

<p>Pacing:</p>	<ul style="list-style-type: none"> ● 0.5 block-General kitchen hazards and chemicals ● Ongoing-application of content as required by planned lab experiences. 	<table border="1"> <tr> <td data-bbox="693 103 741 175">x</td> <td data-bbox="741 103 1016 175">Observation (O)</td> </tr> </table>	x	Observation (O)	<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● <i>CCSS.ELA-LITERACY.RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</i> 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Observation/assessment of safe and sanitary actions within the culinary lab and pre/post lab quizzes.</i> 						
x	Observation (O)											
<p>NASAFAC S8.2</p>	<ul style="list-style-type: none"> ● I can identify major food borne pathogens and how to prevent them. 	<table border="1"> <tr> <td data-bbox="693 367 741 428"></td> <td data-bbox="741 367 1016 428">Selected Response</td> </tr> <tr> <td data-bbox="693 428 741 522">x</td> <td data-bbox="741 428 1016 522">Constructed Response</td> </tr> <tr> <td data-bbox="693 522 741 584"></td> <td data-bbox="741 522 1016 584">Performance (P)</td> </tr> <tr> <td data-bbox="693 584 741 646"></td> <td data-bbox="741 584 1016 646">Observation</td> </tr> </table>		Selected Response	x	Constructed Response		Performance (P)		Observation	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● 8.2.1 Identify characteristics of major food borne pathogens, their role in causing illness, foods involved in outbreaks, and methods of prevention. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Safety and sanitation learning targets and skills are embedded with all content throughout this course. Focus on specific elements of safety and sanitation will vary based on concepts and skills required in the unit taught.</i>
	Selected Response											
x	Constructed Response											
	Performance (P)											
	Observation											
<p>Pacing:</p>	<ul style="list-style-type: none"> ● 0.5 block-General food borne pathogens and prevention ● Ongoing-application of content as required by planned lab experiences. 		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● <i>CCSS.ELA-LITERACY.RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</i> 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Observation/assessment of safe and sanitary actions within the culinary lab and pre/post lab quizzes.</i> 								

Curricular Theme: Careers and Employability

UNWRAPPED STANDARDS

Advance CTE Standard	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
NASAFACS: 8.1 Analyze career paths within the food production and food services industries.	<ul style="list-style-type: none"> ● 8.1.1 Explain the roles, duties, and functions of individuals engaged in food production and services careers. ● 8.1.2 Analyze opportunities for employment and entrepreneurial endeavors. ● 8.1.3 Summarize education and training requirements and opportunities for career paths in food production and services. ● 8.1.5 Create an employment portfolio for use with applying for internships and work-based learning opportunities. 	●	<ul style="list-style-type: none"> ● Food industry ● Entrepreneurial ● Career
NASAFACS: 8.4 Demonstrate menu planning principles and techniques based on standardized recipes to meet customer needs.	<ul style="list-style-type: none"> ● 8.4.1 Use computer based menu systems to develop and modify menus. ● 8.4.2 Apply menu-planning principles to develop and modify menus. ● 8.4.3 Analyze food, equipment, and supplies needed for menus. ● 8.4.4 Develop a variety of menu layouts, themes, and design styles. ● 8.4.5 Prepare requisitions for food, equipment, and supplies to meet production requirements. ● 8.4.6 Record performance of menu items to analyze sales and determine menu revisions. ● 8.4.7 Apply principles of Measurement, Portion Control, Conversions, Food Cost Analysis and Control, Menu Terminology, and Menu Pricing to menu planning. 	●	<ul style="list-style-type: none"> ● Menu ● Theme ● Design ● Production ● Performance of items ● Analyze sales ● Food cost analysis
HTC09.02 Identify career opportunities in one or more hospitality and tourism career pathways to broaden awareness of careers available within the	<ul style="list-style-type: none"> ● HTC09.02.01 Research career opportunities based upon their fit with personal career goals in the hospitality and tourism industries ● HTC09.02.02 Match personal interests and aptitudes to careers in the hospitality and 	<ul style="list-style-type: none"> ● Locate and interpret career information for at least one career cluster. Identify job requirements for career pathways. Identify educational and credentialing 	<ul style="list-style-type: none"> ● Aptitudes ● Entry level ● Skilled level ● Supervisory

<p>career cluster</p>	<p>tourism industry when researching opportunities within the pathways.</p> <ul style="list-style-type: none"> ● HTC09.02.03 Examine entry-level, skilled level, and supervisory positions and the qualifications and skills needed for different levels of hospitality and tourism employment. 	<p>requirements for career cluster and pathways</p> <ul style="list-style-type: none"> ● Identify personal interests and aptitudes. Identify job requirements and characteristics of selected careers. Compare personal interests and aptitudes with job requirements and characteristics of career selected. Modify career goals based on results of personal interests and aptitudes with career requirements and characteristics. 	
<p>ESS07.01 Employ leadership skills to accomplish organizational goals and objectives.</p>	<ul style="list-style-type: none"> ● ESS07.01.02 Exhibit traits such as empowerment, risk, communication, focusing on results, decision-making, problem solution, and investment in individuals when leading a group in solving a problem. ● ESS07.01.03 Exhibit traits such as compassion, service, listening, coaching, developing others, team development, and understanding and appreciating others when acting as a manager of others in the workplace. ● ESS07.01.04 Exhibit traits such as enthusiasm, creativity, conviction, mission, courage, concept, focus, principle-centered living, and change when interacting with others in general. ● ESS07.01.06 Exhibit traits such as innovation, intuition, adaptation, life-long learning and coachability to develop leadership potential over time. ● ESS07.01.07 Analyze leadership in relation to trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation. 	<ul style="list-style-type: none"> ● 	<ul style="list-style-type: none"> ● Leadership ● Employability
<p>ESS07.03 Employ teamwork skills to achieve collective goals and use team member's talents effectively.</p>	<ul style="list-style-type: none"> ● ESS07.03.01 Work with others to achieve objectives in a timely manner. ● ESS07.03.02 Promote the full involvement and use of team member's individual talents and skills. ● ESS07.03.03 Employ conflict-management skills to facilitate solutions. ● ESS07.03.05 Demonstrate teamwork processes 		<ul style="list-style-type: none"> ● Teamwork ● Accountability ● Objectives

	<p>that provide team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution.</p> <ul style="list-style-type: none"> ● ESS07.03.07 Demonstrate commitment to and a positive attitude toward team goals. ● ESS07.03.08 Take responsibility for shared group and individual work tasks. ● ESS07.03.09 Assist team members in completing their work. ● ESS07.03.10 Adapt effectively to changes in projects and work activities. ● ESS07.03.11 Negotiate effectively to arrive at decisions. 		
ESS07.04 Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks.	<ul style="list-style-type: none"> ● ESS07.04.03 Manage personal skills to accomplish assignments. ● ESS07.04.04 Treat people with respect. ● ESS07.04.06 Demonstrate sensitivity to and value for diversity. ● ESS07.04.07 Manage stress and control emotions. 		Respect
ESS09.01 Identify and demonstrate positive work behaviors and personal qualities needed to be employable.	<ul style="list-style-type: none"> ● ESS09.01.01 Demonstrate self-discipline, self-worth, positive attitude, and integrity in a work situation. ● ESS09.01.02 Demonstrate flexibility and willingness to learn new knowledge and skills. ● ESS09.01.03 Exhibit commitment to the organization. 		

Curricular Theme-Careers and Employability

Theme Narrative: The contents of this unit are interwoven throughout the Baking and Patisserie course. Students are provided an overview of employability skills for the food and beverage industry. . Throughout the course, students will deepen their understanding of employability and employability skills as they interweave them with baking skills.

Essential Questions

- What are the career options in the food and beverage industry?
- What are the ways in which culinary certifications can advance my opportunities in the food and beverage industry?
- How are the food industry and business entrepreneurial endeavors connected?
- What are the employability skills required for success in the food industry?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
NASAFAC S: 8.1 HTC09.02	<ul style="list-style-type: none"> ● I can identify careers in the food industry. ● I can analyze opportunities for employment and entrepreneurial endeavors. ● I can summarize education and training requirements and opportunities for career paths in the food industry. ● I can compare and contrast careers in the food industry and choose the best career path for me. 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td></td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)		Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● 8.1.1 Explain the roles, duties, and functions of individuals engaged in food production and services careers. ● 8.1.2 Analyze opportunities for employment and entrepreneurial endeavors. ● 8.1.3 Summarize education and training requirements and opportunities for career paths in food production and services. ● HTC09.02.01 Research career opportunities based upon their fit with personal career goals in the hospitality and tourism industries ● HTC09.02.02 Match personal interests and aptitudes to careers in the hospitality and tourism industry when researching opportunities within the pathways. ● HTC09.02.03 Examine entry-level, skilled level, and supervisory positions and the qualifications and skills needed for different levels of hospitality and tourism employment. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Food industry career project and presentation</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
	Performance (P)											
	Observation (O)											
<p>Pacing:</p>	<ul style="list-style-type: none"> ● 3 blocks-Career Exploration ● Ongoing-application of content as required by planned lab and classroom experiences. 		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● <i>CCSS.ELA-LITERACY.SL.11-12.2 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.</i> 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Project</i> 								

ESS09.01	<ul style="list-style-type: none"> • I can identify the traits needed to be employable. • I can role-play to demonstrate positive and negative traits in a job. 	<table border="1"> <tr> <td data-bbox="693 151 741 240"></td> <td data-bbox="741 151 1016 240">Selected Response (SR)</td> </tr> <tr> <td data-bbox="693 240 741 337">x</td> <td data-bbox="741 240 1016 337">Constructed Response (CR)</td> </tr> <tr> <td data-bbox="693 337 741 402"></td> <td data-bbox="741 337 1016 402">Performance (P)</td> </tr> <tr> <td data-bbox="693 402 741 461"></td> <td data-bbox="741 402 1016 461">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)		Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> • ESS09.01.01 Demonstrate self-discipline, self-worth, positive attitude, and integrity in a work situation. • ESS09.01.02 Demonstrate flexibility and willingness to learn new knowledge and skills. • ESS09.01.03 Exhibit commitment to the organization. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Employability skills and learning targets and skills are embedded with all content throughout this course. Focus on specific elements of safety and sanitation will vary based on concepts and skills required in the unit taught.</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
	Performance (P)											
	Observation (O)											
<p>Pacing:</p>	<p>1 block</p>		<p>CCSS Connections:</p> <ul style="list-style-type: none"> • <i>CCSS.ELA-LITERACY.SL.11-12.6 Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. (See grades 11-12 Language standards 1 and 3 here for specific expectations.)</i> 	<p>Assessments:</p> <ul style="list-style-type: none"> • <i>Observation/assessment of employability actions within the culinary lab and classroom.</i> 								

Curricular Theme: Planning, Preparation, and Production

UNWRAPPED STANDARDS

Advance CTE Standard	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
HTPA04.01 Manage and use basic reading, writing, and mathematical skills for food production and guest services to provide a positive guest experience.	<ul style="list-style-type: none"> ● HTPA04.01.01 Apply mathematical, reading, and writing skills to correctly deliver food products and guest service 	<ul style="list-style-type: none"> ● Convert recipes. ● Use proper measurements of ingredients. ● Calculate menu and recipe costs. ● Read and comprehend recipes, operational manuals, inventory control sheets, menus, correspondence, training manuals, etc. ● Use basic writing skills (grammar, punctuation, spelling) to produce inventory control sheets, recipes, menus, correspondence, employee evaluations, etc. 	<ul style="list-style-type: none"> ● Convert ● Equivalent ● Weight ● Volume ● Interpret ● Understand
NASAFACS: 8.5 Demonstrate professional food preparation methods and techniques for all menu categories to produce a variety of food products that meet customer needs.	<ul style="list-style-type: none"> ● 8.5.1 Demonstrate professional skills in safe handling of knives, tools, and equipment. ● 8.5.2 Demonstrate professional skill for a variety of cooking methods including roasting, broiling, smoking, grilling, sauteing, pan frying, deep frying, braising, stewing, poaching, steaming, and baking using professional equipment and current technologies. ● 8.5.3 Utilize weights and measurement tools to demonstrate knowledge of portion control and proper scaling and measurement techniques. ● 8.5.4 Apply the fundamentals of time, temperature, and cooking methods to cooking, cooling, reheating, and holding a variety of foods. ● 8.5.7 Prepare various fruits, vegetables, starches, legumes, dairy products, fats, and oils using safe handling and professional preparation techniques. 	<ul style="list-style-type: none"> ● Explain the use of a variety of sauces. ● Choose appropriate cooking procedures (sauté, broil, bake, etc.). ● Employ knowledge of nutritional values. ● Exhibit high quality food presentation. ● Use of scales and other food service equipment. ● Sharpen knives safely. ● Use pots and pans for different food preparations. ● Explain how to store and retrieve foods in a variety of settings (cold, hot, dry, etc.) ● Detail characteristics of French, Russian, Bistro style and other forms of service. Identify types of 	<ul style="list-style-type: none"> ● Equipment (full list available at request) ● Cooking methods (full list available at request) ● Technique ● Method ● Ingredient ● Prepare ● Mise en place

	<ul style="list-style-type: none"> ● 8.5.9 Prepare sandwiches, canapes, and appetizers using safe handling and professional preparation techniques. ● 8.5.10 Prepare breads, baked goods and desserts using safe handling and professional preparation techniques. ● 8.5.11 Prepare breakfast meats, eggs, cereals, and batter products using safe handling and professional preparation techniques. ● 8.5.12 Demonstrate professional plating, garnishing, and food presentation techniques. 	<p>dining utensils and proper uses. Show proper set up procedures for the dining room/counter. Explain menu items. Detail the process of “upselling” and other forms of marketing at tableside.</p>	
HTPA09.01 Implements the company's standard operating procedures related to food and beverage production and guest service to provide quality products and services.	<ul style="list-style-type: none"> ● HTPA09.01.02 Evaluate prepared foods for quality and presentation to meet quality standards. ● HTPA09.01.04 Match equipment with correct cooking methodology. 	<ul style="list-style-type: none"> ● Show consistent appearance in prepared foods Detail ways to monitor quality of prepared food 	<p>Plating Quality Portion</p>

Curricular Theme: Planning, Preparation, and Production

Theme Narrative: This unit comprises the baking and patisserie skills and recipes that will support building the students foundational knowledge of baking. Students will build their understanding of safety and sanitation, employability skills as they delve into baking skills and “whip things up” in the culinary lab. Students will learn the basics of the creaming method, muffin method, biscuit method, lamination, pate a choux pastry, yeast breads, cakes and cake decorating.

Essential Questions:

- What are the different ways to mix and prepare baked good doughs/batters, and why is it important to understand the different methods and when to use them?
- What is the difference between quick bread and yeast bread, and how do the leavening agents in each work?
- How are different icings structured, and why are they used for different applications?
- How can you evaluate baked goods, and determine how to improve techniques and outcomes in the future?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
HTPA04.0 <u>1</u>	<ul style="list-style-type: none"> ● I can convert recipes to be larger or smaller. ● I can use correct measurements of needed ingredients. ● I can understand recipes and apply them properly. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td>Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">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)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● HTPA04.01.01 Apply mathematical, reading, and writing skills to correctly deliver food products and guest service 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Recipe conversion and measurement skill learning targets are embedded with all recipes throughout this course.</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
<p>Pacing:</p>	<ul style="list-style-type: none"> ● 1 blocks-Recipe Conversion/measurement ● Ongoing-application of content as required by planned lab and classroom experiences. 		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● <i>HS.N-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.</i> 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Observation/assessment of recipe conversions and measurement within the culinary lab and classroom.</i> 								
NASAFAC S: 8.3 NASAFAC S: 8.5 HTPA09.0 <u>1</u>	<ul style="list-style-type: none"> ● I can identify a variety of types of equipment for food processing, cooking, holding, storing, and serving, including hand tools and small ware. ● I can demonstrate professional skills in safe handling of knives, tools, and equipment. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td>Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">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)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● 8.3.6 Identify a variety of types of equipment for food processing, cooking, holding, storing, and serving, including hand tools and small ware. ● 8.5.1 Demonstrate professional skills in safe handling of knives, tools, and equipment. ● HTPA09.01.04 Match equipment with correct cooking methodology 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Food processing and equipment skill learning targets are embedded with all recipes throughout this course.</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
<p>Pacing:</p>	<ul style="list-style-type: none"> ● 2 blocks-Food Processing/Equipment Handling ● Ongoing-application of content 		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Observation/assessment of food processing and</i> 								

	as required by planned lab and classroom experiences.			<i>equipment use within the culinary lab and classroom.</i>								
NASAFAC S: 8.2 NASAFAC S: 8.3 NASAFAC S: 8.4 ESS07.01 ESS07.03 ESS07.04 NASAFAC S: 8.1	<p>Food Preparation</p> <ul style="list-style-type: none"> I can demonstrate professional skill for a variety of cooking methods including sauteing, pan frying, deep frying, poaching, steaming, and baking using professional equipment and current technologies. I can utilize weights and measurement tools for different recipes. I can apply the fundamentals of time, temperature, and cooking methods to cooking, cooling, reheating, and holding a variety of foods. I can prepare various foods using safe handling and professional preparation techniques. I can demonstrate professional plating, garnishing, and food presentation techniques. <p>Safety and Sanitation</p> <ul style="list-style-type: none"> I can properly store and handle food, preventing cross contamination. I can dispose of waste in appropriate, safe, and environmentally friendly ways. I can maintain records to document time and temperature control, maintenance of equipment, and cleaning of equipment. I can maintain food inventory using FIFO, date marking, and record keeping. <p>Menu</p> <ul style="list-style-type: none"> I can make and modify menus using technology, including 	<table border="1"> <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>x</td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response	x	Performance (P)	x	Observation	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> 8.5.2 Demonstrate professional skill for a variety of cooking methods including roasting, broiling, smoking, grilling, sauteing, pan frying, deep frying, braising, stewing, poaching, steaming, and baking using professional equipment and current technologies. 8.5.3 Utilize weights and measurement tools to demonstrate knowledge of portion control and proper scaling and measurement techniques. 8.5.4 Apply the fundamentals of time, temperature, and cooking methods to cooking, cooling, reheating, and holding a variety of foods. 8.5.7 Prepare various fruits, vegetables, starches, legumes, dairy products, fats, and oils using safe handling and professional preparation techniques. 8.5.9 Prepare sandwiches, canapes, and appetizers using safe handling and professional preparation techniques. 8.5.10 Prepare breads, baked goods and desserts using safe handling and professional preparation techniques. 8.5.11 Prepare breakfast meats, eggs, cereals, and batter products using safe handling and professional preparation techniques. 8.5.12 Demonstrate professional plating, garnishing, and food presentation techniques. 8.2.6 Demonstrate proper purchasing, receiving, storage, and handling of both raw and prepared foods. 8.2.7 Demonstrate safe food handling and preparation techniques that prevent cross contamination from potentially hazardous foods, between raw and ready-to-eat foods, and between animal and fish sources and other food products. 8.2.10 Demonstrate safe and environmentally responsible waste disposal and recycling 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> <i>Lesson and lab on:</i> <ul style="list-style-type: none"> <i>Cookies or similar (creaming method)</i> <i>Muffins or similar (muffin method)</i> <i>Scones or similar (biscuit method)</i> <i>Puff pastry or similar (lamination)</i> <i>Cream Puffs or similar (pate a choux pastry)</i> <i>Bread or similar (yeast)</i> <i>Cake decorating</i> <i>Incorporate Safety and Sanitation standards throughout the lessons and labs as applicable to recipe preparation.</i> <i>Incorporate Career and Employability standards throughout the lessons and labs.</i>
	Selected Response											
	Constructed Response											
x	Performance (P)											
x	Observation											

	<p>different designs and layouts.</p> <ul style="list-style-type: none"> ● I can plan a menu, including design, food items, cost, equipment, etc. <p>Employability</p> <ul style="list-style-type: none"> ● I can demonstrate employability skills, including but not limited to leadership, teamwork, dependability, positive attitude, good customer service, respecting others, and holding myself accountable. ● I can create a portfolio of my work throughout the semester to show my improvement and commitment to learning new skills. 		<p>methods.</p> <ul style="list-style-type: none"> ● 8.2.11 Demonstrate ability to maintain necessary records to document time and temperature control, HACCP, employee health, maintenance of equipment, and other elements of food preparation, storage, and presentation. ● 8.3.1 Operate tools and equipment following safety procedures and OSHA requirements. ● 8.3.2 Maintain tools and equipment following safety procedures and OSHA requirements. ● 8.3.3 Demonstrate procedures for cleaning and sanitizing equipment, serving dishes, glassware, and utensils to meet industry standards and OSHA requirements. ● 8.3.5 Demonstrate procedures for safe and secure storage of equipment and tools. ● 8.6.1 Apply principles of purchasing, receiving, issuing, and storing in food service operations. ● 8.6.2 Practice inventory procedures including first in/first out concept, date marking, and specific record keeping. ● 8.6.10 Apply principles of inventory management, labor cost and control techniques, production planning and control, and facilities management to front and back of the house operations. ● 8.4.1 Use computer based menu systems to develop and modify menus. ● 8.4.2 Apply menu-planning principles to develop and modify menus. ● 8.4.3 Analyze food, equipment, and supplies needed for menus. ● 8.4.4 Develop a variety of menu layouts, themes, and design styles. ● 8.4.5 Prepare requisitions for food, equipment, and supplies to meet production requirements. ● 8.4.6 Record performance of menu items to analyze sales and determine menu revisions. ● 8.4.7 Apply principles of Measurement, Portion Control, Conversions, Food Cost Analysis and Control, Menu Terminology, and Menu Pricing to menu planning. 	
--	--	--	---	--

Pacing:	30 blocks		CCSS Connections: <ul style="list-style-type: none"> ● <i>HS.N-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.</i> ● <i>CCSS.ELA-LITERACY.W.11-12.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.</i> ● <i>CCSS.ELA-LITERACY.RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</i> 	Assessments: <ul style="list-style-type: none"> ● <i>Performance Tasks: Cooking and recipe adaptation</i> ● <i>Performance Task: Safe Behaviors and actions in the Kitchen</i>
----------------	------------------	--	---	---

Recipes: Baking and Patisserie

Table of recipes to support student development of baking and patisserie skills.

Creaming Method (3 Days)	Muffin method (2 days)	Biscuit Method (2 days)	Lamination (4 days)
Shortbread Cookies Chocolate Chip Cookies Pound Cake Oatmeal Cookies	Blueberry Muffins Corn Muffins Pumpkin Muffins Pancakes/Waffles	Drop Biscuits Rolled Biscuits Buttermilk Biscuits Shortcake	Croissants Pie crust/Pie Babka
Pate a choux pastry (3 days)	Yeast Breads (4 days)	Cakes (2 days)	Cake Decorating (4 days)
Cream Puff Eclair Profiterole	Pizza Dough Egg Bread Rolls Pretzels Loaf bread	Sponge cake/Cupcakes	Royal Icing Piping techniques Sugar flowers Fondant



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 II: Coding, Robotics, and Manufacturing Production
Course Description for Program of Studies	7th Grade Technology is an elective course designed to provide students further exploration and experience in career pathways. Students will delve deeper into the building blocks of society through coding and robotics, manufacturing, and an introduction to construction. Project based learning will guide students to develop a deeper insight of multiple career fields. The projects will also help students comprehend their individually unique skill sets in relation to industry and how their distinct skills are beneficial to industry and society.
Grade Level	7
Pre-requisites	None
Credit (if applicable)	

Table of Contents

[Module 1: Coding](#)

[Module 2: Robotics](#)

[Module 3: Manufacturing](#)

[Module 4: Intro to Construction](#)

Module 1: Coding

UNWRAPPED STANDARDS

Advance CTE/ISTE/STEL Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL-1 Nature and Characteristics of Technology and Engineering	<ul style="list-style-type: none"> ● 1K. Compare and contrast the contributions of science, engineering, and technology in the development of technological systems. ● 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"> ● Understanding the basic components of block programming. ● Make a comparison from line coding to block coding. ● Using the design process to support the programming of a robot to meet a specific outcome. ● Building academic language around computer programming 	<ul style="list-style-type: none"> ● HTML ● Python ● Variables ● abstraction ● accessibility ● algorithm ● binary ● binary alphabet ● bit ● block-based programming language ● Blockly ● bug ● byte ● click ● code ● command ● computational thinking ● computer science ● conditionals ● data ● debugging ● decompose ● define (a function) ● digital footprint ● DNS (domain name service) ● double-click ● drag ● drop ● event ● event handler ● fiber optic cable ● for loop ● function
STEL 2 Core Concepts of Technology and engineering	<ul style="list-style-type: none"> ● 2M. Differentiate between inputs, processes, outputs, and feedback in technological systems. ● 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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. 		
STEL 6 History of Technology	<ul style="list-style-type: none"> ● 6C. Compare various technologies and how they have contributed to human progress. 		
Technology and Engineering Practices	<ul style="list-style-type: none"> ● TEP-1 Uses system models to show how parts of a technological system work together. ● 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 		

	<p>technical, writing, graphic, and oral communication skills.</p>		
<p>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.</p>	<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. ● 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"> ● function call ● function definition ● input ● Internet ● IP address ● iteration ● loop ● online ● output ● packets ● pattern matching ● Parameter ● persistence ● pixel ● program ● programming ● repeat ● run program ● search engine ● servers ● toolbox ● trustworthy ● URL (universal resource locator) ● username ● variable ● website ● while loop ● Wi-Fi ● workspace

Module 1: Coding

Essential Questions:

- What careers require knowledge of coding?
- What is the difference between block and line coding?
- What are the advantages and disadvantages of using line code?
- How is line code used to complete an autonomous task?
- What coding 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								
Hyperlink standard code Advance CTE.	<ul style="list-style-type: none"> • I can explore various careers in coding and explain their importance. • I can understand the opportunities available coding at the high school level. 	<table border="1"> <tr> <td></td> <td>Selected Response (SR)</td> </tr> <tr> <td></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)		Constructed Response (CR)	X	Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Students will research different careers in coding.</i> • <i>Students will understand the computer science offerings available at the high school level.</i>
	Selected Response (SR)											
	Constructed Response (CR)											
X	Performance (P)											
	Observation (O)											
Pacing:	1 block		<p>CCSS Connections:</p> <ul style="list-style-type: none"> • 	<p>Assessments:</p> <ul style="list-style-type: none"> • 								
STEL ISTE	<ul style="list-style-type: none"> • I can identify and explain the difference between line coding and block coding. • I can explain why some code is best written in the line code format. 	<table border="1"> <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)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> • <i>2M. Differentiate between inputs, processes, outputs, and feedback in technological systems.</i> • <i>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.</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> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Students will be given examples of line coding and block coding and asked to identify the differences.</i> • <i>CER-Line Code vs Block Code</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
x	Observation (O)											
Pacing:	1 Blocks		<p>CCSS Connections:</p> <p>CCSS.ELA-LITERACY.RST.6-8.7</p> <ul style="list-style-type: none"> • <i>Integrate quantitative or technical information expressed in words in a text with a version of</i> 	<p>Assessments:</p> <ul style="list-style-type: none"> • CER 								

			<p>that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). CCSS.ELA-LITERACY.RST.6-8.3</p> <ul style="list-style-type: none"> Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. 									
STEL ISTE	<ul style="list-style-type: none"> I can utilize my knowledge of line coding to complete an identified task. 	<table border="1"> <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	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> EP-1 Uses system models to show how parts of a technological system work together. 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 communication skills. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Students will complete a coding assignment utilizing line coding.
	Selected Response											
	Constructed Response											
x	Performance (P)											
	Observation											
<p>Pacing:</p>	<p>1 block</p>		<p>CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.3</p> <ul style="list-style-type: none"> Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. 	<p>Assessments:</p> <ul style="list-style-type: none"> Completion of coding assignment 								
STEL ISTE	<ul style="list-style-type: none"> I can write a line code to accomplish an autonomous task. I can refine my code to complete a task more efficiently. 	<table border="1"> <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></td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response	x	Performance		Observation	<p>Lesson Progression and Standards Connection:</p> <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. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Students will complete a coding assignment utilizing line coding.
	Selected Response											
	Constructed Response											
x	Performance											
	Observation											
<p>Pacing:</p>	<p>1 block</p>		<p>CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7</p> <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). 	<p>Assessments:</p> <ul style="list-style-type: none"> Completion of coding assignment. 								
STEL ISTE	<ul style="list-style-type: none"> I can record my learning on my google site portfolio. 		<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> (3c)-Students curate information from digital 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Students will add an image of 								

	<ul style="list-style-type: none"> I can complete a reflection about the skill of coding and define my interest in future study of the topic. 	<table border="1"> <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></td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response	x	Performance		Observation	<p><i>resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</i></p> <ul style="list-style-type: none"> (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. 	<p><i>their completed code to their Google Site.</i></p> <ul style="list-style-type: none"> Reflection Prompt <p>Assessments:</p> <ul style="list-style-type: none"> Google Site Portfolio
	Selected Response											
	Constructed Response											
x	Performance											
	Observation											
Pacing:	1 block											

Module 2: Robotics

UNWRAPPED STANDARDS

Advance CTE/ISTE/STEL Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL-1 Nature and Characteristics of Technology and Engineering	<ul style="list-style-type: none"> ● 1K. Compare and contrast the contributions of science, engineering, and technology in the development of technological systems. ● 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"> ● Understanding the components of a robot. ● Understand the role of robotics in today's society. ● Understanding the roles and robotic responses related to various sensors. ● Programming robots to meet a specified task or variety of tasks. ● Computing procedures to advance a robot through a field of tasks. 	<ul style="list-style-type: none"> ● Acceleration ● Accuracy ● Active sensor ● Actuator ● Algorithm ● Android ● Autonomous robot ● Capacitor ● Closed loop control ● Controller ● Coordinates ● Degrees ● Degrees of freedom ● Electronics ● End effector ● Error ● Feedback ● Feedback loop ● Fuzzy logic ● Gain ● Gripper ● Hardware ● Infrared sensor ● Input device ● Instruction ● Joint ● Laser ● Light probe ● Linear motion ● Mechatronics ● Motor ● Optical encoder ● Photoelectric sensor ● Phototransistor
STEL 2 Core Concepts of Technology and engineering	<ul style="list-style-type: none"> ● 2M. Differentiate between inputs, processes, outputs, and feedback in technological systems. ● 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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. 		
STEL 3 Integration of Knowledge, Technologies, and Practices	<ul style="list-style-type: none"> ● 3G. Explain how knowledge gained from other content areas affects the development of technological products and systems. 		
STEL 6 History of Technology	<ul style="list-style-type: none"> ● 6E. Verify how specialization of function has been at the heart of many technological improvements. 		
Technology and Engineering Practices	<ul style="list-style-type: none"> ● TEP-1 Uses system models to show how parts of a technological system work together. ● TEP-5 Critiques technological products and 		

	<p>systems to identify areas of improvement.</p> <ul style="list-style-type: none"> ● TEP-6 (collaboration)-Demonstrated productive teamwork in design-based projects. ● TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills. 		<ul style="list-style-type: none"> ● Precision ● Robot ● Roll ● Sensor ● Signal ● Simulation ● Software
<p>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.</p>	<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. ● 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. 		

Module 2 Robotics

Essential Questions:

- What careers require knowledge of robotics?
- How have robotics impacted human efficiency?
- What are various forms of sensors used by robots? What is the function of each sensor?
- How are robots programmed to complete a task or variety of tasks?
- What robotics 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 robotics and explain their importance relative to human efficiency. ● I can understand the opportunities available for robotics at the high school level. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)	X	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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>1M. Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.</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> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Students will research the different careers that utilize robotics and add to their portfolio.</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
X	Observation (O)											
Pacing:	1 block		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Google Portfolio</i> 								
STEL ISTE	<ul style="list-style-type: none"> ● I can identify the various sensors used by robots. ● I can explain how each sensor is used to control robot behavior. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● <i>2M. Differentiate between inputs, processes, outputs, and feedback in technological systems.</i> ● <i>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.</i> ● <i>2Q. Predict outcomes of a future product or system at the beginning of the design process.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Sensor testing and exploration.</i> 		
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											

		<table border="1"> <tr> <td>x</td> <td>Observation (O)</td> </tr> </table>	x	Observation (O)	<ul style="list-style-type: none"> ● 2R. Compare how different technologies involve different sets of processes. 							
x	Observation (O)											
Pacing:	● 1 Block		CCSS Connections:	Assessments:								
			●	●								
STEL ISTE	<ul style="list-style-type: none"> ● I can program a robot to complete a series of different tasks utilizing the different sensors. 	<table border="1"> <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"> ● 1M. Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches. ● 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. ● 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. ● 2M. Differentiate between inputs, processes, outputs, and feedback in technological systems. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> ● Students will complete a series of challenges using the different sensors. ● Video capture of at least one robotics challenge.
	Selected Response											
	Constructed Response											
X	Performance											
x	Observation											
Pacing:	6 blocks		CCSS Connections:	Assessments:								
			●	● Completion of robotic challenges								
STEL ISTE	<ul style="list-style-type: none"> ● I can video my robotics challenge. ● I can correctly add my video to my Google Site portfolio. ● I can complete a reflection about the skill of programming robots and define my interest in future study of the topic. 	<table border="1"> <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></td> <td>Observation</td> </tr> </table>		Selected Response		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 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> ● Students will add a video to their google site of the robot completing the challenge. ● Reflection Prompt
	Selected Response											
	Constructed Response											
X	Performance											
	Observation											

Pacing:	1 block		<i>variety of digital objects such as visualizations, models or simulations.</i> <ul style="list-style-type: none"> • (6D)-Students publish or present content that customizes the message and medium for their intended audiences. 	Assessments: <ul style="list-style-type: none"> • Successful upload to their Google Site.
----------------	---------	--	--	---

Module 3: Manufacturing

UNWRAPPED STANDARDS

Advance CTE/ISTE/STEL Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL 2 Core Concepts of Technology and engineering	<ul style="list-style-type: none"> ● 2M. Differentiate between inputs, processes, outputs, and feedback in technological systems. ● 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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. 	<ul style="list-style-type: none"> ● Students will learn to use a 3D modeling software ● Students will use the software to create a model that will be 3D printed. ● Understand the differences between additive and subtractive manufacturing. ● Investigate the career opportunities in manufacturing. ● Mimic an assembly line to manufacture a product in the makerspace 	<ul style="list-style-type: none"> ● 3 Axis(X,Y,Z) ● Extrude ● Degrees ● Width ● Height ● Filament ● Additive manufacturing ● Subtractive manufacturing ● Manufacturing ● CAD ● CAM ● Prototyping ● Digital fabrication ● Automation ● Production ● Flow chart ● Assembly line ● Defect ● Finished goods ● Make to assemble ● Make to order ● Make to stock ● Operational technology
STEL 3 Integration of Knowledge, Technologies, and Practices	<ul style="list-style-type: none"> ● 3F. Apply a product, system, or process developed for one setting to another setting. ● 3G. Explain how knowledge gained from other content areas affects the development of technological products and systems. 		
STEL 4 Impacts of Technology	<ul style="list-style-type: none"> ● 4M. Devise strategies for reducing, reusing, and recycling wasted caused from the creation and use of technology. 		
STEL 6 History of Technology	<ul style="list-style-type: none"> ● 6C. Compare various technologies and how they have contributed to human progress. ● 6E. Verify how specialization of function has been at the heart of many technological improvements. 		
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 		

	<p>design process.</p> <ul style="list-style-type: none"> ● 7R. Refine design solutions to address criteria and constraints. ● 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. ● <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> 		
1.7 Global Collaborator Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.	<ul style="list-style-type: none"> ● <i>1.7.c-Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.</i> 		

Module 3: Manufacturing

Essential Questions:

- What are the different types of manufacturing careers?
- How does manufacturing support society in the 21st century?
- What are the safety protocols for the makerspace?
- Why do manufacturers complete a prototype before making a final product?
- Why is it important for each team member to follow specifications when working on a manufacturing line?
- How does a production line support the efficient construction of a product at the bulk scale?
- What manufacturing 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 manufacturing and explain their importance to 21st century society. ● I can understand the opportunities available for manufacturing at the high school level. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)	X	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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>1M. Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.</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> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Students will research the various careers in manufacturing</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
X	Observation (O)											
Pacing:	1 block		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Google Site 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 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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)											
	Constructed Response (CR)											

	use the essential safety equipment in the makerspace.	<table border="1"> <tr> <td></td> <td>Performance (P)</td> </tr> <tr> <td>x</td> <td>Observation (O)</td> </tr> </table>		Performance (P)	x	Observation (O)						
	Performance (P)											
x	Observation (O)											
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"> Safety Contract completion and safety quiz 								
STEL ISTE	<ul style="list-style-type: none"> I can use a 3D modeling software to create a prototype of a product that I will manufacture. I can follow safety protocols when using tools and materials in the Makerspace. 	<table border="1"> <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"> 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 communication skills. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> Students will use a 3D modeling software to create a prototype of a product that they will manufacture.
	Selected Response											
	Constructed Response											
x	Performance (P)											
	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 carrying out experiments, taking measurements, or performing technical tasks. 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"> Completion of 3D design 								
STEL ISTE	<ul style="list-style-type: none"> I can follow directions to complete a task to the proper specifications. I can safely follow instructions on how to properly use tools and materials in the Makerspace 	<table border="1"> <tr> <td></td> <td>Selected Response</td> </tr> <tr> <td></td> <td>Constructed Response</td> </tr> <tr> <td>X</td> <td>Performance</td> </tr> </table>		Selected Response		Constructed Response	X	Performance	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. TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills. 7V. Improve essential skills necessary to 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> Students will follow directions to complete tasks/projects. 		
	Selected Response											
	Constructed Response											
X	Performance											

		<table border="1"> <tr> <td>x</td> <td>Observation</td> </tr> </table>	x	Observation	<i>successfully design.</i>							
x	Observation											
Pacing:	7 blocks		CCSS Connections: <ul style="list-style-type: none"> • 	Assessments: <ul style="list-style-type: none"> • <i>Completion of project</i> 								
STEL ISTE	<ul style="list-style-type: none"> • I can explain how the efficiency of product production changes when a production line is created. • I can work collaboratively to manufacture a product at the bulk scale. • I can safely follow instructions on how to properly use tools and materials in the Makerspace 	<table border="1"> <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"> • <i>7P. Illustrate the benefits and opportunities associated with different approaches to design.</i> • <i>7Q. Apply the technology and engineering design process.</i> • <i>7U. Evaluate the strengths and weaknesses of different design solutions.</i> • <i>7V. Improve essential skills necessary to successfully design.</i> • <i>1.7.c-Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.</i> 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> • <i>Students will follow directions to complete an assignment.</i>
	Selected Response											
	Constructed Response											
X	Performance											
x	Observation											
Pacing:	7 blocks		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.6-8.3</i> <ul style="list-style-type: none"> • <i>Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</i> <i>CCSS.ELA-LITERACY.RST.6-8.7</i> <ul style="list-style-type: none"> • <i>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).</i> 	Assessments: <ul style="list-style-type: none"> • <i>Completion of project</i> 								
STEL ISTE	<ul style="list-style-type: none"> • I can showcase my manufactured product at various stages in my portfolio. • I can complete a reflection about the manufacturing production and define my interest in future study of the topic. 	<table border="1"> <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></td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response	X	Performance		Observation	Lesson Progression and Standards Connection: <ul style="list-style-type: none"> • <i>(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.</i> • <i>(6C)-Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.</i> • <i>(6D)-Students publish or present content that customizes the message and medium for their</i> 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> • <i>Students will add images of a manufactured product at various stages to their google site portfolio.</i> • <i>Reflection Prompt</i>
	Selected Response											
	Constructed Response											
X	Performance											
	Observation											
Pacing:	2 block			Assessments: <ul style="list-style-type: none"> • <i>Successful upload to their Google Site.</i> 								

			<i>intended audiences.</i>	
--	--	--	----------------------------	--

Module 4: Introduction to Construction

UNWRAPPED STANDARDS

Advance CTE/ISTE/STEL Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
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. 	<ul style="list-style-type: none"> ● Understand the significance of measurement. ● Use design software to design a home ● Create a mock-up of the home design. ● Understand the basic process from plans to structure. 	<ul style="list-style-type: none"> ● Architecture ● Design ● Pre-construction ● Morph ● Edit ● Architect ● Architectural style ● Aesthetic ● Replication ● Functionality ● Functional ● Design ● Specification ● Structure ● Dimensions ● Prototype ● Enhance ● Scope ● Symbol
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. ● 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. 		

	<ul style="list-style-type: none">• <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i>		
--	---	--	--

Module 4: ESSENTIAL QUESTIONS

Essential Questions

- What are the careers in the architecture and construction fields?
- Why is precise measurement essential in architecture and construction?
- How do contractors and architects complete a prototype?
- What does it mean to have an architectural style?
- How do you translate from a set of plans to a finished product?
- 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 architecture and construction at the high school level. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></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 style="text-align: center;">X</td> <td>Observation (O)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)	X	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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>1M. Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.</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> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Students will research the various careers in construction.</i>
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
X	Observation (O)											
Pacing:	1 block		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <ul style="list-style-type: none"> ● 								
STEL ISTE	<ul style="list-style-type: none"> ● I can accurately measure utilizing a 16th scale. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Selected Response (SR)</td> </tr> <tr> <td></td> <td>Constructed Response (CR)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● <i>ACC01.01.04 Use appropriate formulas to determine ratios, fractions, and proportion measures.</i> ● <i>ACC01.01.05 Use appropriate formulas to determine measurements of dimensions, spaces and structures.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Students will demonstrate they can accurately measure to within 1/16th of an inch.</i> 				
	Selected Response (SR)											
	Constructed Response (CR)											

Pacing:	1 block	<table border="1"> <tr> <td></td> <td>Performance (P)</td> </tr> <tr> <td>X</td> <td>Observation (O)</td> </tr> </table>		Performance (P)	X	Observation (O)	CCSS Connections: <i>CCSS.ELA-LITERACY.RST.11-12.4</i> <ul style="list-style-type: none"> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. 	Assessments: <ul style="list-style-type: none"> Proper measurements. 				
	Performance (P)											
X	Observation (O)											
STEL ISTE	<ul style="list-style-type: none"> I can accurately identify components that comprise a residential framing structure. 	<table border="1"> <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 be taught the different components of a residential framing structure 				
	Selected Response											
	Constructed Response											
Pacing:	3 blocks	<table border="1"> <tr> <td>X</td> <td>Performance (P)</td> </tr> <tr> <td></td> <td>Observation</td> </tr> </table>	X	Performance (P)		Observation	CCSS Connections: <i>CCSS.ELA-LITERACY.RST.11-12.4</i> <ul style="list-style-type: none"> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. 	Assessments: <ul style="list-style-type: none"> Students will label the components . 				
X	Performance (P)											
	Observation											
STEL ISTE	<ul style="list-style-type: none"> I can build a representative structure from a set of plans. 	<table border="1"> <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></td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response	X	Performance		Observation	Lesson Progression and Standards Connection: <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. 7V. Improve essential skills necessary to successfully design. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> Students will build a framing structure following a set of plans.
	Selected Response											
	Constructed Response											
X	Performance											
	Observation											
Pacing:	1 block		CCSS Connections: <i>CCSS.ELA-LITERACY.RST.11-12.4</i> <ul style="list-style-type: none"> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. 	Assessments: <ul style="list-style-type: none"> Completed structure 								
STEL ISTE	<ul style="list-style-type: none"> I can explain how a structure is defined as an architectural style. 	<table border="1"> <tr> <td></td> <td>Selected Response</td> </tr> </table>		Selected Response	Lesson Progression and Standards Connection: <ul style="list-style-type: none"> 7P. Illustrate the benefits and opportunities associated with different approaches to design. 7T. Assess design quality based upon 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> Students will be shown different housing structures 						
	Selected Response											

		<table border="1"> <tr> <td></td> <td>Constructed Response</td> </tr> <tr> <td></td> <td>Performance</td> </tr> <tr> <td>x</td> <td>Observation</td> </tr> </table>		Constructed Response		Performance	x	Observation	<p><i>established principles and elements of design.</i></p> <ul style="list-style-type: none"> ● 7U. Evaluate the strengths and weaknesses of different design solutions. ● 7V. Improve essential skills necessary to successfully design. 			
	Constructed Response											
	Performance											
x	Observation											
Pacing:	1 block		<p>CCSS Connections: CCSS.ELA-LITERACY.RST.11-12.4</p> <ul style="list-style-type: none"> ● Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. 	<p>Assessments:</p> <ul style="list-style-type: none"> ● 								
STEL ISTE	<ul style="list-style-type: none"> ● I can showcase my house design on my google portfolio. ● I can complete a reflection about the architecture and construction and define my interest in future study of the topic. 	<table border="1"> <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></td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response	X	Performance		Observation	<p>Lesson Progression and Standards Connection:</p> <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. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● Students will add images of a manufactured product at various stages to their google site portfolio. ● Reflection Prompt
	Selected Response											
	Constructed Response											
X	Performance											
	Observation											
Pacing:	2 block			<p>Assessments:</p> <ul style="list-style-type: none"> ● Successful upload to their home design and reflection to their Google Site portfolio. 								



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)	

Table of Contents

[Module 1: Engineering](#)

[Module 2: Graphic Communications](#)

[Module 3: Construction](#)

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 border="1" style="width: 100%;"> <tr> <td style="width: 30px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)		Performance (P)	X	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <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 border="1" style="width: 100%;"> <tr> <td style="width: 30px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)	x	Performance (P)	x	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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		<p>CSS Connections:</p> <p><i>CCSS.ELA-LITERACY.RST.6-8.3</i></p>	<p>Assessments:</p> <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 border="1"> <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 border="1"> <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 prototype Provide 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 border="1"> <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: 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"> 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 border="1"> <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">• <i>Document showcasing the components of the design process and its application to the design problem.</i>
--	--	--	---	--

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"> ● <i>7Q. Apply the technology and engineering design process.</i> ● 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. ● <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> 		
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>
--	---	--	--

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 border="1" style="width: 100%;"> <tr><td style="width: 20px;"></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)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <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 border="1" style="width: 100%;"> <tr><td style="width: 20px;"></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 style="text-align: center;">X</td><td>Observation (O)</td></tr> </table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)	X	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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		<p>CCSS Connections:</p> <p><i>CCSS.ELA-LITERACY.RST.6-8.7</i></p> <ul style="list-style-type: none"> ● <i>Integrate quantitative or technical information</i> 	<p>Assessments:</p> <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 border="1"> <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: 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 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 border="1"> <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: 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"> 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 border="1"> <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 border="1"> <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: <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"> 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 border="1"> <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. 								

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
<p>STEL 7 Design in Technology and Engineering Education</p>	<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. 		
<p>Technology and Engineering Practices</p>	<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>		
--	------------------------------	--	--

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 border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td></td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)		Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● 	<p>Assessments:</p> <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 border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td></td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)	x	Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <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 border="1"> <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 border="1"> <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. 								

<p>STEL ISTE</p>	<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 border="1"> <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	<p>Lesson Progression and Standards Connection:</p> <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. TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Design and process of building a model of the project.
	Selected Response											
	Constructed Response											
x	Performance											
x	Observation											
<p>Pacing:</p>	<p>2 Blocks</p>		<p>CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7</p> <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). 	<p>Assessments:</p> <ul style="list-style-type: none"> Model of project. 								
<p>STEL ISTE</p>	<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 border="1"> <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	<p>Lesson Progression and Standards Connection:</p> <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. TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects. 	<p>Mandatory Lessons/Activities:</p> <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											
<p>Pacing:</p>	<p>6 blocks</p>		<p>CCSS Connections: CCSS.ELA-LITERACY.RST.6-8.7</p> <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). 	<p>Assessments:</p> <ul style="list-style-type: none"> Model of project. Final prototype with 1/16 of an inch accuracy. 								
<p>STEL ISTE</p>	<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 border="1"> <tr> <td></td> <td>Selected Response</td> </tr> <tr> <td></td> <td>Constructed Response</td> </tr> </table>		Selected Response		Constructed Response	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Students will prepare their prototype for proper finishing. 				
	Selected Response											
	Constructed Response											

Pacing:	1 Block	<table border="1"> <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 border="1"> <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. 								



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	Introduction to Technology
Course Description for Program of Studies	The 6th grade Introduction to Technology class is an exploratory course designed to expose and inspire students to multiple career pathways. Students will be introduced to career pathways and the building blocks of society through project based learning content in Robotics & Coding, Digital Communications & Graphic Design, and Engineering & Technology. Students will gain knowledge and understanding of the world we live in and how their personal skill sets are invaluable and where they fit into society.
Grade Level	6th grade
Pre-requisites	None
Credit (if applicable)	

Table of Contents:

[Module 1: MS CTE Google Site Portfolio Development](#)

[Module 2: Introduction to Technology and Engineering](#)

[Module 3: Introduction to Graphic Design](#)

[Module 4: Introduction to Tools and Materials](#)

[Module 5: Introduction to Manufacturing](#)

[Module 6: Introduction to Coding/Robotics](#)

Module 1: MS CTE Google Site Portfolio Development			
UNWRAPPED STANDARDS			
Advance CTE/ISTE/STEL Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
ISTE-Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.	<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.	Create an online portfolio using Google Sites that will be used throughout their middle school years. <ol style="list-style-type: none">1. Online portfolio2. Graphic Design3. Organization of Google Drive	<ul style="list-style-type: none">● Portfolio● Graphic design● Organize● Balance● Digital Footprint
ISTE-Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.	<ul style="list-style-type: none">● (6A)-Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.● (6B)-Students create original works or responsibly repurpose or remix digital resources into new creations.● (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.	Graphic design of a web page. <ol style="list-style-type: none">1. Professional looking page2. Proper use of tools available	<ul style="list-style-type: none">● Insert● Theme● Embed
ISTE-Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals,	<ul style="list-style-type: none">● (1a)-Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning	Learning how to organize and collect pieces of work that can be digitally collected.	<ul style="list-style-type: none">● Page● Subpage

informed by the learning sciences.	<i>outcomes.</i>		
		Navigation of Google Sites	<ul style="list-style-type: none"> ● <i>Table of Contents</i> ● <i>Link</i>

UNIT 1: MS CTE Google Site Portfolio Development

Essential Questions

- How can I use Google Sites to organize and build a technology education exploration portfolio?

Throughout the course:

- What are the types of technology education offered by Bristol Public Schools?
- What careers are associated with each of the technology education pathways offered at Bristol Schools?
- What skills are required for entry into each career pathway explored?
- How can I use this portfolio to make decisions about my academic path through middle, high school and beyond?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
ISTE	<ul style="list-style-type: none"> • I can organize my Google Drive to ensure that my assignments are easily located. • I can create an online portfolio using Google Sites to track my progress throughout my middle school career. 	<table border="1"> <tr> <td></td> <td>Selected Response (SR)</td> </tr> <tr> <td></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)		Constructed Response (CR)	X	Performance (P)		Observation (O)	Lesson Progression and Standards Connection: <ul style="list-style-type: none"> • Each of the above standards should be found throughout the unit sequences. • (1a)-Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> • Organize Google Drive • Introduction to Sites • Create a Google Site-General Components
	Selected Response (SR)											
	Constructed Response (CR)											
X	Performance (P)											
	Observation (O)											
Pacing:	1 block		Assessments: <ul style="list-style-type: none"> • Organization of the Google Drive • Creation of Google Sites 									
ISTE	<ul style="list-style-type: none"> • I can organize my content on a Google Site in a meaningful way. 	<table border="1"> <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"> • (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. • (6A)-Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> • Create a Google Site-Add Pages and Organizational Features
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
Pacing:	0.5 Blocks		Assessments: <ul style="list-style-type: none"> • Google Site Organization and Construction 									
ISTE	<ul style="list-style-type: none"> • I can use the building tools provided in Google Sites to 		Lesson Progression and Standards Connection: <ul style="list-style-type: none"> • (3c)-Students curate information from digital 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> • Task-Navigating the Google 								

	organize and display my products.		Selected Response	<p><i>resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</i></p> <ul style="list-style-type: none"> ● (6A)-Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication. ● (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. 	<p><i>Sites Building Tools, Build the portfolio framework for Grade 6 (include subpages for each module).</i></p>	
			Constructed Response			
Pacing:	0.5 blocks	x	Performance (P)			<p>Assessments:</p> <ul style="list-style-type: none"> ● Google Site Portfolio Framework-Rubric (attach link)
			Observation			

Module 2: Introduction to Technology and Engineering

UNWRAPPED STANDARDS

Advance CTE/ISTE/ITEE Standards	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"> ● Reverse engineer current technologies ● Understand the steps to the engineering design process. ● Apply the engineering design process ● Identify how the engineering design cycle is used in careers. 	<ul style="list-style-type: none"> ● Engineering design cycle ● Criteria ● Development ● Testable ● Limitation ● Impact ● Specification ● Consideration ● Replica ● Prototype ● Priority ● Model ● Trade-off ● Test results ● Redesign process ● Design system ● Element ● Iterative ● Optimal
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 6 History of Technology	<ul style="list-style-type: none"> ● 6C. Compare various technologies and how they have contributed to human progress. ● 6D. Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements. ● 6E. Verify how specialization of function has been at the heart of many technological improvements. 		
STEL 7 Design in Technology and	<ul style="list-style-type: none"> ● 7P. Illustrate the benefits and opportunities 		

Engineering Education	<p>associated with different approaches to design.</p> <ul style="list-style-type: none"> ● 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. 		
STEL 8 Applying, Maintaining, and Assessing Technological Products and Systems	<ul style="list-style-type: none"> ● 8H. Research information from various sources to use and maintain technological products or systems. ● 8K. Design methods to gather data about technological systems. 		

UNIT 2: Introduction to Technology and Engineering

Essential Questions:

- How does technology change?
- What is the impact of the engineering design cycle on past and present technologies?
- How does the iterative process of engineering design improve outcomes?

Throughout the course:

- What are the types of technology education offered by Bristol Public Schools?
- What careers are associated with each of the technology education pathways offered at Bristol Schools?
- What skills are required for entry into each career pathway explored?
- How can I use this portfolio to make decisions about my academic path through middle, high school and beyond?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
STEL	<ul style="list-style-type: none"> ● I can compare technology from the past to current/future technology. ● I can predict how the changes were made/designed to advance the technology. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td></td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	X	Constructed Response (CR)	X	Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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. ● 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. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● Task-Improving Technology Over Time
	Selected Response (SR)											
X	Constructed Response (CR)											
X	Performance (P)											
	Observation (O)											
Pacing:	2 block			<p>Assessments:</p> <ul style="list-style-type: none"> ● Formative-Task Discussion and Technology Analysis 								
STEL	<ul style="list-style-type: none"> ● I can understand the components of the engineering design cycle. ● I can apply the components of the engineering design cycle to solve a problem. ● I can use the engineering design cycle to solve a problem. ● I can assess and iterate my design to support a better solution. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td></td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)	x	Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● Engineering Design Cycle Activity ● Performance Task: Lego Engineering and Iterations for Improved Success
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
Pacing:	5 Blocks			<p>Assessments:</p>								

			<ul style="list-style-type: none"> ● 7U. Evaluate the strengths and weaknesses of different design solutions. ● 7V. Improve essential skills necessary to successfully design. 	<ul style="list-style-type: none"> ● Student self assessment and design iteration ● Student Journal/Reflection 								
ISTE	<ul style="list-style-type: none"> ● I can develop a Google Slide presentation to show the engineering cycle in action. ● I can describe a career that uses the engineering design cycle. ● I can showcase my work and reflect on my MS Technology Portfolio. 	<table border="1"> <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"> ● (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"> ● Google slides creation demonstrating their knowledge of the engineering design cycle. ● Identify connecting high school pathways and course offerings.
	Selected Response											
X	Constructed Response											
x	Performance (P)											
	Observation											
Pacing:	1 block			Assessments: <ul style="list-style-type: none"> ● Creation of Google Slides presentation ● Portfolio Post-Engineering Design Reflection 								

Module 3: Introduction to Graphic Design

UNWRAPPED STANDARDS

Advance CTE/ISTE/ITEE Standards	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. 	<p>Use design thinking to create a product.</p> <p>Understand the elements of design and their relationship to the outcome of the produce</p> <p>Use computer skills and software to develop and construct a product.</p>	Elements of Design Line Shape Color Texture Type Space Image Balance Contrast Emphasis Proportion Pattern Rhythm Unity Variety
STEL 7 Design in Technology and Engineering Education	<ul style="list-style-type: none"> ● 7Q. <i>Apply the technology and engineering design process.</i> ● 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. 	<p>Understand the connection between graphic design and marketing.</p>	
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 (<i>communication</i>)-Exhibits effective technical, writing, graphic, and oral communication skills. 		

UNIT 3: Introduction to Graphic Design

Essential Questions:

- What is graphic design?
- What are the elements of graphic design?
- How are the elements in graphic design used in marketing?
- How can you recreate famous pieces by focusing on the elements of design?

Throughout the course:

- What are the types of technology education offered by Bristol Public Schools?
- What careers are associated with each of the technology education pathways offered at Bristol Schools?
- What skills are required for entry into each career pathway explored?
- How can I use this portfolio to make decisions about my academic path through middle, high school and beyond?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments				
STEL	<ul style="list-style-type: none"> ● I can describe the seven elements of graphic design. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Lesson-Introduction to graphic design</i>
	Selected Response (SR)							
	Constructed Response (CR)							
Pacing:	.5 block	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Performance (P)	X	Observation (O)	<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● CCSS.ELA-LITERACY.RST.6-8.7 ● 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). 	<p>Assessments:</p> <ul style="list-style-type: none"> ●
	Performance (P)							
X	Observation (O)							
STEL	<ul style="list-style-type: none"> ● I can identify and describe the seven elements of graphic design in a product. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td></td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> </table>		Selected Response (SR)		Constructed Response (CR)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● <i>7Q. Apply the technology and engineering design process.</i> ● <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>Task-Explorations/Explanation of the elements of graphic design.</i>
	Selected Response (SR)							
	Constructed Response (CR)							
Pacing:	.5 Blocks	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Performance (P)	X	Observation (O)	<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● CCSS.ELA-LITERACY.RST.6-8.7 ● Integrate quantitative or technical information expressed in words in a text with a version of 	<p>Assessments:</p> <ul style="list-style-type: none"> ●
	Performance (P)							
X	Observation (O)							

			<i>that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</i>									
STEL	<ul style="list-style-type: none"> I can work collaboratively to recreate a professional advertisement using graphic design. I can define marketing. I can explain how the advertisement meets the goals of marketing. 	<table border="1"> <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"> 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. 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 work collaboratively to recreate a famous piece using graphic design.
	Selected Response											
	Constructed Response											
X	Performance (P)											
	Observation											
Pacing:	2 Blocks		CCSS Connections: <ul style="list-style-type: none"> CCSS.ELA-LITERACY.RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. 	Assessments: <ul style="list-style-type: none"> Completion of graphic design 								
STEL	<ul style="list-style-type: none"> I can apply the elements of graphic design to meet a real-world need. 	<table border="1"> <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></td><td>Observation</td></tr> </table>		Selected Response		Constructed Response	X	Performance		Observation	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. 2Q. Predict outcomes of a future product or system at the beginning of the design process. 2S. Defend decisions related to a design problem. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> Students will complete an assignment creating an infographic.
	Selected Response											
	Constructed Response											
X	Performance											
	Observation											
Pacing:	2 Blocks		CCSS Connections: <ul style="list-style-type: none"> CCSS.ELA-LITERACY.RST.6-8.7 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"> Infographic 								
STEL	<ul style="list-style-type: none"> I can use the elements of design to create an advertisement for a career in graphic design. 	<table border="1"> <tr><td></td><td>Selected Response</td></tr> </table>		Selected Response	Lesson Progression and Standards Connection: <ul style="list-style-type: none"> 7T. Assess design quality based upon established principles and elements of design. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> Elements of Design Project-Advertisement for 						
	Selected Response											

		<table border="1"> <tr> <td></td> <td>(SR)</td> </tr> <tr> <td></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>		(SR)		Constructed Response (CR)	x	Performance (P)		Observation (O)	<ul style="list-style-type: none"> ● 7V. Improve essential skills necessary to successfully design. ● 2Q. Predict outcomes of a future product or system at the beginning of the design process. ● 2S. Defend decisions related to a design problem. 	<i>Favorite Product</i>
	(SR)											
	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
Pacing:	1 Block		CCSS Connections: ●	Assessments: ●								
ISTE	<ul style="list-style-type: none"> ● I can research and describe a career that uses the elements of design. ● I can showcase my work and reflect on my MS Technology Portfolio. 	<table border="1"> <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"> ● (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"> ● Google (slide, doc, etc) creation demonstrating their knowledge of the elements of design and the related career opportunities. ● Identify connecting high school pathways and course offerings.
	Selected Response											
X	Constructed Response											
x	Performance (P)											
	Observation											
Pacing:	1 block			Assessments: <ul style="list-style-type: none"> ● Portfolio Post-Elements of Design Reflection 								

Module 4: Introduction to Tools and Materials

UNWRAPPED STANDARDS

Advance CTE/ISTE/ITEE Standards	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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. 	<ul style="list-style-type: none"> ● Students will learn the safety rules for working in the makerspace. ● Students will understand the importance of following directions. ● Personal safety ● Safe use of hand tools ● Safe use of power tools ● Reading a plan to create a product. ● Reading measurement tools. ● Measuring and manipulating materials to devise a final product. 	<ul style="list-style-type: none"> ● Design ● Develop ● Evaluate ● Production ● Power tools ● Vice ● Hand tools ● Electrical safety ● Maker ● Making ● Makerspace ● Innovation
STEL 3 Integration of Knowledge, Technologies, and Practices	<ul style="list-style-type: none"> ● 3G. Explain how knowledge gained from other content areas affects the development of technological products and systems. 		
STEL 7 Design in Technology and Engineering Education	<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. 		
Technology and Engineering Practices	<ul style="list-style-type: none"> ● TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects. ● TEP-6 (collaboration)-Demonstrated productive teamwork in design-based projects. ● TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills. 		

Module 4: Introduction to Tools and Materials

Essential Questions:

- What are the safety requirements in the MakerSpace?
- What tools are used in the makerspace, and what is the function of each tool?
- What types of materials can be manipulated in a MakerSpace?
- How is a design plan used to create a project with an intended outcome?

Throughout the course:

- What are the types of technology education offered by Bristol Public Schools?
- What careers are associated with each of the technology education pathways offered at Bristol Schools?
- What skills are required for entry into each career pathway explored?
- How can I use this portfolio to make decisions about my academic path through middle, high school and beyond?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments				
STEL	<ul style="list-style-type: none"> • I can demonstrate safe behaviors and actions within the makerspace. • I can accomplish safety procedures in the event of an emergency • I can locate and describe how to use essential safety equipment in the makerspace 	<table border="1"> <tr> <td>Selected Response (SR)</td> </tr> <tr> <td>Constructed Response (CR)</td> </tr> <tr> <td>Performance (P)</td> </tr> <tr> <td>Observation (O)</td> </tr> </table>	Selected Response (SR)	Constructed Response (CR)	Performance (P)	Observation (O)	<p>Lesson Progression and Standards Connection:</p> <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> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Safety presentation</i> • <i>Tour of makerspace and location safety tools</i> • <i>Signed safety contract</i>
Selected Response (SR)								
Constructed Response (CR)								
Performance (P)								
Observation (O)								
Pacing:	2.0 Blocks		<p>CCSS Connections:</p> <ul style="list-style-type: none"> • CCSS.ELA-LITERACY.RST.6-8.7 • 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). 	<p>Assessments:</p> <ul style="list-style-type: none"> • <i>Safety quiz</i> 				
STEL	<ul style="list-style-type: none"> • I can design a poster to describe the safety protocols in the makerspace. 	<table border="1"> <tr> <td>Selected Response (SR)</td> </tr> <tr> <td>Constructed Response (CR)</td> </tr> </table>	Selected Response (SR)	Constructed Response (CR)	<p>Lesson Progression and Standards Connection:</p> <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>7Q. Apply the technology and engineering design process.</i> • <i>7T. Assess design quality based upon established principles and elements of design.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Design poster on safety</i> 		
Selected Response (SR)								
Constructed Response (CR)								

		<table border="1"> <tr> <td></td> <td>Performance (P)</td> </tr> <tr> <td></td> <td>Observation (O)</td> </tr> </table>		Performance (P)		Observation (O)	<ul style="list-style-type: none"> ● 7V. Improve essential skills necessary to successfully design. 					
	Performance (P)											
	Observation (O)											
Pacing:	1 Blocks		CCSS Connections: <ul style="list-style-type: none"> ● CCSS.ELA-LITERACY.RST.6-8.7 ● 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"> ● Creation of safety poster 								
STEL	<ul style="list-style-type: none"> ● I can identify and describe tools and materials for a career. ● I can follow safety instructions in order to demonstrate safe use of tools and materials in the Makerspace. ● I can accurately measure using a 1/16" scale measurement tool ● I can create a finished product using a set of plans 	<table border="1"> <tr> <td></td> <td>Selected Response</td> </tr> <tr> <td></td> <td>Constructed Response</td> </tr> <tr> <td></td> <td>Performance (P)</td> </tr> <tr> <td></td> <td>Observation</td> </tr> </table>		Selected Response		Constructed Response		Performance (P)		Observation	Lesson Progression and Standards Connection: <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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. ● 3G. Explain how knowledge gained from other content areas affects the development of technological products and systems. 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> ● Presentation of tools and materials ● Introduction to various careers ● Project: Build a Product in makerspace following a plan
	Selected Response											
	Constructed Response											
	Performance (P)											
	Observation											
Pacing:	12 Blocks		CCSS Connections: <ul style="list-style-type: none"> ● CCSS.ELA-LITERACY.RST.6-8.3 ● Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. ● CCSS.ELA-LITERACY.RST.6-8.7 ● 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"> ● 								
ISTE	<ul style="list-style-type: none"> ● I can research and describe a career that uses a makerspace. ● I can describe the tools used by individuals in this career and their purpose in developing a product. ● I can showcase my work and reflect on my MS Technology 	<table border="1"> <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> </table>		Selected Response	X	Constructed Response	x	Performance (P)	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 	Mandatory Lessons/Activities: <ul style="list-style-type: none"> ● Google (slide, doc, etc) creation demonstrating their knowledge of the makerspace tools and materials and the related career opportunities. ● Identify connecting high 		
	Selected Response											
X	Constructed Response											
x	Performance (P)											

	Portfolio.	Observation	<p><i>clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.</i></p> <ul style="list-style-type: none"> • <i>(6D)-Students publish or present content that customizes the message and medium for their intended audiences.</i> 	<p><i>school pathways and course offerings.</i></p>
Pacing:	1 block			<p>Assessments:</p> <ul style="list-style-type: none"> • <i>Portfolio Post-Makerspace Reflection</i>

Module 5: Introduction to Manufacturing

UNWRAPPED STANDARDS

Advance CTE/ISTE/ITEE Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL 2 Core Concepts of Technology and engineering	<ul style="list-style-type: none"> ● 2M. Differentiate between inputs, processes, outputs, and feedback in technological systems. ● 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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. 	<ul style="list-style-type: none"> ● Students will learn to use a 3D modeling software ● Students will use the software to create a model that will be 3D printed. ● Understand the differences between additive and subtractive manufacturing. ● Investigate the career opportunities in manufacturing. 	<ul style="list-style-type: none"> ● 3 Axis(X,Y,Z) ● Extrude ● Degrees ● Width ● Height ● Filament ● Additive manufacturing ● Subtractive manufacturing ● Manufacturing ● CAD ● CAM ● Prototyping ● Digital fabrication ● Automation ● Production ● Flow chart ● Assembly line ● Defect
STEL 3 Integration of Knowledge, Technologies, and Practices	<ul style="list-style-type: none"> ● 3F. Apply a product, system, or process developed for one setting to another setting. ● 3G. Explain how knowledge gained from other content areas affects the development of technological products and systems. 		
STEL 4 Impacts of Technology	<ul style="list-style-type: none"> ● 4M. Devise strategies for reducing, reusing, and recycling wasted caused from the creation and use of technology. 		
STEL 6 History of Technology	<ul style="list-style-type: none"> ● 6C. Compare various technologies and how they have contributed to human progress. ● 6E. Verify how specialization of function has been at the heart of many technological improvements. 		
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. 		

	<ul style="list-style-type: none"> ● 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. ● <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> 		

UNIT 5: Introduction to Manufacturing

Essential Questions:

- What is manufacturing?
- What are the types of manufacturing?
- What types of products are manufactured in Connecticut?
- How can we use our makerspace to manufacture goods?
- What technologies are used in manufacturing?

Throughout the course:

- What are the types of technology education offered by Bristol Public Schools?
- What careers are associated with each of the technology education pathways offered at Bristol Schools?
- What skills are required for entry into each career pathway explored?
- How can I use this portfolio to make decisions about my academic path through middle, high school and beyond?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
STEL	<ul style="list-style-type: none"> ● I can use 3D modeling software to create a prototype of a finished product using additive manufacturing. ● I can describe a career that uses manufacturing to create a product. 	<table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td style="text-align: center;">Selected Response (SR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Constructed Response (CR)</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">Performance (P)</td> </tr> <tr> <td></td> <td style="text-align: center;">Observation (O)</td> </tr> </table>		Selected Response (SR)	x	Constructed Response (CR)	x	Performance (P)		Observation (O)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> ● <i>TEP-2 (creativity)-Exhibits innovative and original ideas in the context of design-based activities.</i> ● <i>TEP-3 (making and doing)-Exhibits safe and effective ways of producing technological products, systems, and projects.</i> ● <i>TEP-5 Critiques technological products and systems to identify areas of improvement.</i> ● <i>TEP-6 (collaboration)-Demonstrated productive teamwork in design-based projects.</i> ● <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> ● <i>4M. Devise strategies for reducing, reusing, and recycling wasted caused from the creation and use of technology.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> ● <i>3D modeling software instruction</i> ● <i>Creation of Prototype</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
Pacing:	3 Blocks		<p>CCSS Connections:</p> <ul style="list-style-type: none"> ● CCSS.ELA-LITERACY.RST.6-8.3 ● Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. ● CCSS.ELA-LITERACY.RST.6-8.7 	<p>Assessments:</p> <ul style="list-style-type: none"> ● <i>Creation of 3D modeling design prototype.</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). 									
STEL	<ul style="list-style-type: none"> I can use computer aided design (CAD) software to create a product using subtractive manufacturing. I can describe a career that uses manufacturing to create a product. 	<table border="1"> <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)	<p>Lesson Progression and Standards Connection:</p> <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 communication skills. 4M. Devise strategies for reducing, reusing, and recycling wasted caused from the creation and use of technology. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> CAD/CAM software instruction Creation of Prototype
	Selected Response (SR)											
	Constructed Response (CR)											
	Performance (P)											
	Observation (O)											
<p>Pacing:</p>	<p>3 Blocks</p>		<p>CCSS Connections:</p> <ul style="list-style-type: none"> CCSS.ELA-LITERACY.RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. CCSS.ELA-LITERACY.RST.6-8.7 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). 	<p>Assessments:</p> <ul style="list-style-type: none"> Creation of Finished Product 								
<p>ISTE</p>	<ul style="list-style-type: none"> I can research and describe a career in manufacturing. I can describe the tools and technologies used by individuals in this manufacturing and their purpose in developing a product. I can showcase my work and reflect on my MS Technology Portfolio. 	<table border="1"> <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	<p>Lesson Progression and Standards Connection:</p> <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, 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Google (slide, doc, etc) creation demonstrating their knowledge of the manufacturing and the related career opportunities. Identify connecting high school pathways and course offerings.
	Selected Response											
X	Constructed Response											
x	Performance (P)											
	Observation											

Pacing:	1 block		<i>models or simulations.</i> <ul style="list-style-type: none"> • (6D)-Students publish or present content that customizes the message and medium for their intended audiences. 	Assessments: <ul style="list-style-type: none"> • Portfolio Post-Manufacturing a prototype
----------------	---------	--	---	--

Module 6: Introduction to Coding/Robotics

UNWRAPPED STANDARDS

Advance CTE/ISTE/ITEE Standards	Performance Elements	Key Concepts/Big Ideas	Academic Vocabulary
STEL-1 Nature and Characteristics of Technology and Engineering	<ul style="list-style-type: none"> ● 1K. Compare and contrast the contributions of science, engineering, and technology in the development of technological systems. ● 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"> ● Understanding the basic components of block programming. ● Using the design process to support the programming of a robot to meet a specific outcome. ● Building academic language around computer programming and robotics ● Make a connection between the careers in robotics and knowledge of coding. 	<ul style="list-style-type: none"> ● abstraction ● accessibility ● algorithm ● binary ● binary alphabet ● bit ● block-based programming language ● Blockly ● bug ● byte ● click ● code ● command ● computational thinking ● computer science ● conditionals ● data ● debugging ● decompose ● define (a function) ● digital footprint ● DNS (domain name service) ● double-click ● drag ● drop ● event ● event handler ● fiber optic cable ● for loop ● function ● function call ● function definition ● input
STEL 2 Core Concepts of Technology and engineering	<ul style="list-style-type: none"> ● 2M. Differentiate between inputs, processes, outputs, and feedback in technological systems. ● 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. ● 2R. Compare how different technologies involve different sets of processes. ● 2S. Defend decisions related to a design problem. 		
STEL 3 Integration of Knowledge, Technologies, and Practices	<ul style="list-style-type: none"> ● 3G. Explain how knowledge gained from other content areas affects the development of technological products and systems. 		
STEL 4 Impacts of Technology	<ul style="list-style-type: none"> ● 4M. Devise strategies for reducing, reusing, and recycling wasted caused from the creation and use of technology. 		
STEL 6 History of Technology	<ul style="list-style-type: none"> ● 6C. Compare various technologies and how they have contributed to human progress. ● 6D. Engage in a research and development process to simulate how inventions and innovations have evolved through systematic 		

	<p>tests and refinements.</p> <ul style="list-style-type: none"> ● 6E. Verify how specialization of function has been at the heart of many technological improvements. 		
Technology and Engineering Practices	<ul style="list-style-type: none"> ● TEP-1 Uses system models to show how parts of a technological system work together. ● 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 communication skills. 		<ul style="list-style-type: none"> ● Internet ● IP address ● iteration ● loop ● online ● output ● packets ● pattern matching ● Parameter ● persistence ● pixel ● program ● programming ● repeat ● run program ● search engine ● servers ● toolbox ● trustworthy ● URL (universal resource locator) ● username ● variable ● website ● while loop ● Wi-Fi ● workspace

UNIT 6: Introduction to Coding and Robotics

Essential Questions:

- What are the core features of programming languages?
- How does programming enable creativity and individual expression?
- What practices and strategies will help me as I write programs?
- What is the relationship between coding and robotics?
- What are the functions of robots in today's society?
- What are the skills needed to work with robots?

Throughout the course:

- What are the types of technology education offered by Bristol Public Schools?
- What careers are associated with each of the technology education pathways offered at Bristol Schools?
- What skills are required for entry into each career pathway explored?
- How can I use this portfolio to make decisions about my academic path through middle, high school and beyond?

CTE Standard	Learning Targets: I can	Summative Assessment Strategy	Lesson Progression and Connection to ELA/Math CCSS	Common Learning Experiences and Assessments								
STEL	<ul style="list-style-type: none"> • I can understand the core features of computer coding. • I can make sense of the terms used in coding. • I can create the proper sequence of block code to complete a task. 	<table border="1"> <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)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> • <i>TEP-7 (communication)-Exhibits effective technical, writing, graphic, and oral communication skills.</i> • <i>3G. Explain how knowledge gained from other content areas affects the development of technological products and systems.</i> • <i>1M. Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Demonstration of instructions</i> • <i>Demonstration of how block coding works.</i> • <i>Construct an infographic about the essential vocabulary related to coding.</i>
	Selected Response (SR)											
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
Pacing:	3 blocks		<p>CCSS Connections:</p> <ul style="list-style-type: none"> • CCSS.ELA-LITERACY.RST.6-8.7 • 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). 	<p>Assessments:</p> <ul style="list-style-type: none"> • <i>Finished product</i> 								
STEL	<ul style="list-style-type: none"> • I can research and describe a career that uses computer programming. • I can describe how robots are 	<table border="1"> <tr> <td></td> <td>Selected Response (SR)</td> </tr> </table>		Selected Response (SR)	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> • <i>6C. Compare various technologies and how they have contributed to human progress.</i> • <i>6D. Engage in a research and development</i> 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> • <i>Presentation of various careers that use computer programming and robotics.</i> 						
	Selected Response (SR)											

	<p>used in the real world and their career applications.</p> <ul style="list-style-type: none"> I can identify the relationship between coding and robotics. 	<table border="1"> <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>	x	Constructed Response (CR)	x	Performance (P)		Observation (O)	<p><i>process to simulate how inventions and innovations have evolved through systematic tests and refinement.</i></p>			
x	Constructed Response (CR)											
x	Performance (P)											
	Observation (O)											
Pacing:	1 Block		<p>CCSS Connections:</p> <ul style="list-style-type: none"> 	<p>Assessments:</p> <ul style="list-style-type: none"> Presentation 								
STEL	<ul style="list-style-type: none"> I can explain the 3 main categories of robotics and what makes them different. I can use a block program to get a robot to complete a specific task. 	<table border="1"> <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	<p>Lesson Progression and Standards Connection:</p> <ul style="list-style-type: none"> TEP-1 Uses system models to show how parts of a technological system work together. 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 communication skills. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Students will be shown how to use the Sphero robots Students will be presented with information on various types of Robotics.
	Selected Response											
x	Constructed Response											
x	Performance											
	Observation											
Pacing:	4 blocks		<p>CCSS Connections:</p> <ul style="list-style-type: none"> CCSS.ELA-LITERACY.RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. 	<p>Assessments:</p> <ul style="list-style-type: none"> Students will be given a performance task to complete with the Sphero Robots. 								
ISTE	<ul style="list-style-type: none"> I can research and describe a career in coding/robotics. I can describe the tools and technologies used by individuals in that code and their purpose in developing a product. I can showcase my work and reflect on my MS Technology Portfolio. 	<table border="1"> <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	<p>Lesson Progression and Standards Connection:</p> <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. 	<p>Mandatory Lessons/Activities:</p> <ul style="list-style-type: none"> Google (slide, doc, etc) creation demonstrating their knowledge of coding/robotics and the related career opportunities. Identify connecting high school pathways and course offerings.
	Selected Response											
X	Constructed Response											
x	Performance (P)											
	Observation											
Pacing:	1 block			<p>Assessments:</p> <ul style="list-style-type: none"> Portfolio Post-Coding and Robotics 								



Bristol Public Schools
Office of Teaching & Learning

Department	Music
Department Philosophy	The visual and performing arts are critical in the development of every child. In a diverse and ever changing society, the visual and performing arts are integral in the consistency, appreciation, and creativity of tomorrow's leaders. The fine arts are a universal language, allowing students to learn unique skills and means of expression that contributes back to our society. We believe visual and performing arts create lifelong learners harnessed with empathy and skills necessary to understand our past, present and future world.
Course	A Cappella
Course Description for Program of Studies	This is a semester based course where students will learn how to sing in a small group. Students will learn vocal techniques used in contemporary college A Cappella style (Glee, Pitch Perfect, or Pentatonix). This will include learning vocal percussion (beatboxing), microphone technique, arranging and writing. Student's will also have the opportunity to sing solos and enhance their ability to connect with their peers and audience.
Grade Level	9-12
Pre-requisites	None
Credit (if applicable)	.5

MU:Pr6.1 Convey meaning through the presentation of artistic work.	P	P	P						P	P		P	S			P			
Responding																			
MU:Re7.1 Perceive and analyze artistic work.										S									
MU:Re8.1 Interpret intent and meaning in artistic work.			S						S		P								
MU:Re9.1 Apply criteria to evaluate artistic work.													P				P		
Connecting																			
MU:Cn10.0 Synthesize and relate knowledge and personal experiences to make art.																			
MU:Cn11.1 Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.											S								

ESSENTIAL QUESTION OF STANDARDS

- When is a performance judged ready to present? How do context and the manner in which the musical work is presented influence audience response?
- How do we discern the musical creators' and performers' expressive intent?
- How does understanding the structure and context of musical works inform performance?
- How do musicians make creative decisions?
- How do we judge the quality of musical work(s) and performance(s)?
- How does understanding the structure and context of the music influence a response?
- How do the other arts, other disciplines, contexts and daily life inform creating, performing, and responding to music?
- When is a performance judged ready to present? How do context and the manner in which the musical work is presented influence audience response?

ENDURING UNDERSTANDING OF STANDARDS

- Musicians judge performance based on criteria that vary across time, place, and cultures. The context and how a work is presented influence the audience response.
- Through their use of elements and structures of music, creators and performers provide clues to their expressive intent.
- Analyzing creators' context and how they manipulate elements of music provides insight into their intent and informs performance.
- Musicians' creative choices are influenced by their expertise, context, and expressive intent.
- The personal evaluation of musical works and performances is informed by analysis, interpretation, and established criteria.
- Response to music is informed by analyzing context (social, cultural, and historical) and how creators and performers manipulate the elements of music.
- Understanding connections to varied contexts and daily life enhances musicians' creating, performing, and responding.
- Musicians judge performance based on criteria that vary across time, place, and cultures. The context and how a work is presented influence the audience response.

UNIT 1: Posture and Breath Support

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1. E.HSI (Proficient)	a. Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures, styles, and genres. b. Demonstrate an understanding of expressive intent by connecting with an audience through prepared and improvised performances.		Content Knowledge	Thorax (intercostal muscles), diaphragm
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		x	Physical Skill	All breathing is from the diaphragm
			Product Development	RESOURCES
			Learning Behavior	ENT diagram, thorax diagram

LEARNING TARGETS

I CAN

- Stand or sit using proper posture.
- Identify muscle groups used in singing.
- Prepare my body for the physical act of singing.

UNIT 2: Articulation

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1. E.HSI (Proficient)	a. Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures, styles, and genres. b. Demonstrate an understanding of expressive intent by connecting with an audience through prepared and improvised performances.		Content Knowledge	Legato, staccato, accent
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
		X	Physical Skill	Should have previous exposure
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Identify staccato, accent, legato within my music.
- Perform staccato, accent, legato.
- Explain and understand why staccato, accent, and legato are used within selected repertoire

UNIT 3: Phrasing

Vocal Awareness/Technique

Standard	Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1.E. HSII (Accomplished) a. Demonstrate mastery of the technical demands and an understanding of expressive qualities of the music in prepared and improvised performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods. b. Demonstrate an understanding of intent as a means for connecting with an audience through prepared and improvised performances.		Content Knowledge	Phrasing
		Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
	X	Physical Skill	All notes are monodynamic
		Product Development	
		Learning Behavior	
MU:Re8.1.E .HSI (Proficient) Explain and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, (when appropriate) the setting of the text, and personal research.	X	Content Knowledge	
		Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		Physical Skill	
		Product Development	
		Learning Behavior	

LEARNING TARGETS

I CAN

- Recognize the natural rise and fall of a vocal line.
- Find the word that represents the apex (peak) of the phrase.
- Sing a vocal line with direction and meaning.

UNIT 4: Vocal Percussion

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6. 1.E.HSIII (Advance d)	a. Demonstrate an understanding and mastery of the technical demands and expressive qualities of the music through prepared and improvised performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods in multiple types of ensembles.		Content Knowledge	Vocal Percussion
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	That it is hard or impossible to do.
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Create drum sound vocally.
- Understand basic rhythms.

UNIT 5: Pitch & Rhythm

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.2. E.HSI (Proficient)	a. Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.	X	Content Knowledge	<ul style="list-style-type: none"> • Treble and bass clef • 16th notes, whole notes, dotted notes
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	What standard notation is (i.e. the staff).
			Product Development	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Learning Behavior	Quarter and eighth notes

LEARNING TARGET

I CAN

- Read standards notes and perform them. (notes on the treble and bass clef)
- Identify written notes; their pitch and duration. (16th notes to whole notes, and dotted notes)
- Sing correct pitch and duration as indicated by the music.

UNIT 6: Key Signatures

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.2. E.HSI (Proficient)	a. Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.	X	Content Knowledge	solfège, key signature, and how sharps and flats affect the “do”
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	That “do” is fixed
			Product Development	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Learning Behavior	Basic solfège scale

LEARNING TARGETS

I CAN

- Find and sing the ‘do’ note of C in written music.
- Find and sing the ‘do’ note of G in written music.
- Find and sing the ‘do’ note of F in written music.
- Find and sing the ‘do’ note of D in written music.
- Find and sing the ‘do’ note of Bb in written music.
- Find and sing the ‘do’ note of A in written music.
- Find and sing the ‘do’ note of Eb in written music.

UNIT 7:Time Signatures

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.2. E.HSI (Proficient)	a. Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.	X	Content Knowledge	Compound and simple meter
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	That 6/8 and 3/4 are the same meter
			Product Development	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Learning Behavior	Ability to keep a steady beat

LEARNING TARGET

I CAN

- Identify the difference between compound and simple meters. (2/4, 2/2, 3/4, 3/8, 4/4, 6/8, 6/4, 9/8, 12/8)
- Perform simple and compound meters and know where each of the beats are.
- Associate beats with conductor's gesture.

UNIT 8: Road Map Symbols

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.2. E.HSI (Proficient)	a. Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.	X	Content Knowledge	<ul style="list-style-type: none"> repeat signs, CODA, DS, and first/second endings
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	That you do not need to go back to the beginning when there is a repeat Read/sing through first and second ending (forgetting to repeat and jump to 2nd ending)
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Identify repeat signs, CODA, DS, and first/second endings
- Follow the score returning to the correct measure with the road map symbols.

UNIT 9: Solfège

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.2. E.HSI (Proficient)	a. Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.	X	Content Knowledge	solfège
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
		X	Physical Skill	Exposure to solfège
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Sing a scale using solfège syllables.
- Jump to any scale degree (interval) from do.
- Identify 'do' in the key signature of the musical passage.
- Sing musical passages with solfège syllables.

UNIT 10: Conducting Gestures

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1. E.HSI (Proficient)	a. Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures, styles, and genres.		Content Knowledge	Conducting, upbeat and downbeat
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	COMMON MISCONCEPTIONS
			Product Development	Forgetting to look at the conductor to know when and how to sing/articulate
			Learning Behavior	
MU:Re8.1. E.HSI (Proficient)	Explain and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, (when appropriate) the setting of the text, and personal research.	X	Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Start and end music phrases together with others.
- Follow directions/gestures for appropriate synchronization.
- Associate beats with conductor's gesture.
- Prepare and perform for upbeats and downbeats

UNIT 11: Arranging

Vocal Awareness/Technique

Standard	Type of Standard		Concepts and Disciplinary-Specific Vocabulary	
MU:Cr2.1.C .HSII (Accomplished)	a. Assemble and organize multiple sounds or musical ideas to create initial expressive statements of selected sonic events, memories, images, concepts, texts, or storylines.		Content Knowledge	Arranging is a combination of learned musical skills in order to produce an original arrangement
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
			Physical Skill	It is easy to arrange music
		X	Product Development	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Learning Behavior	Foundational music reading and theory skills
MU:Cr3.1.C .HSII (Accomplished)		Content Knowledge		
		Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		
		Physical Skill		
	X	Product Development		
		Learning Behavior		
MU:Re9.1.C .HSI (Proficient)	Describe the effectiveness of the technical and expressive aspects of selected music and performances, demonstrating understanding of fundamentals of music theory. Describe the way(s) in which critiquing others' work and receiving feedback from others can be applied in the personal creative process.		Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN:

- Arrange songs for various ensemble groups.
- Analyze scores to understand voice leading, harmonization and arranging norms.

UNIT 12: Dynamics

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Re7.2.E .HSI (Proficient)	Explain how the analysis of passages and understanding the way the elements of music are manipulated inform the response to music.		Content Knowledge	Dynamics ranging from pp-ff and sfz
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
			Physical Skill	Not vary the dynamics enough
			Product Development	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Learning Behavior	Ability to sing at different volumes
MU:Pr6.1.E. HSI (Proficient)	a. Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures, styles, and genres. b. Demonstrate an understanding of expressive intent by connecting with an audience through prepared and improvised performances.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Identify and perform ff in written music.

- Identify and perform *f* in written music.
- Identify and perform *mf* in written music.
- Identify and perform *mp* in written music.
- Identify and perform *p* in written music.
- Identify and perform *pp* in written music.
- Identify and perform *sfz* in written music.

UNIT 13: Diction

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Re8.1. E.HSI (Proficient)	Explain and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, (when appropriate) the setting of the text, and personal research.	x	Content Knowledge	Diction
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
			Physical Skill	Singing everything in an American accent
			Product Development	
			Learning Behavior	
MU:Cn11.0 .E.HSII (Accomplished)	Demonstrate understanding of relationships between music and the other arts, other disciplines, varied contexts, and daily life.		Content Knowledge	
		x	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Perform the correct vowels and consonants.
- Make myself understandable to others.

UNIT 14: Vowel Color & Intonation

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1. E.HSI (Proficient)	a. Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures, styles, and genres.		Content Knowledge	Larynx, pharynx, soft palette placement, mask, resonance
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	That pop stars sing correctly
			Product Development	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Learning Behavior	Breathing technique

LEARNING TARGETS

I CAN

- Shape my vocal tract appropriately.
- Identify muscles and spaces that affect the vowel color.
- Adjust tongue position for each of the italian singing vowels (ah, eh, ee, oh, oo)
- Adjust soft palette position for each of the italian singing vowels (ah, eh, ee, oh, oo)
- Place vowel sounds into the mask

UNIT 15: Meaning & Interpretation

Vocal Awareness/Technique

Standard	Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1.E. HSII (Accomplished)	a. Demonstrate mastery of the technical demands and an understanding of expressive qualities of the music in prepared and improvised performances of a varied repertoire representing diverse cultures, styles, genres, and historical periods. b. Demonstrate an understanding of intent as a means for connecting with an audience through prepared and improvised performances.		Content Knowledge
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
		X	Physical Skill
			Product Development
			Learning Behavior
MU:Re9.1.E. HSI (Proficient)	Evaluate works and performances based on personally- or collaboratively-developed criteria, including analysis of the structure and context.		Content Knowledge
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
			Physical Skill
			Product Development
			Learning Behavior
			N/A
			COMMON MISCONCEPTIONS
			Bringing in prior knowledge of a song's meaning

LEARNING TARGETS

I CAN

- Understand the meaning of the text.
- Understand the context of the text.
- Sing so others can understand the text.
- Convey the meaning of the song using expression and body language.

UNIT 16: Ballance

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.HSII (Accomplished)	a. Develop and apply criteria to select a varied repertoire to study and perform based on an understanding of theoretical and structural characteristics and expressive challenges in the music, the technical skill of the individual or ensemble, and the purpose and context of the performance.	X	Content Knowledge	Ballance
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	I can sing the right notes and it's right - but it needs to blend within the group
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Listen to the overall volume levels of each part.
- Adjust my personal volume level to match others.

UNIT 17: Blend

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.HSII (Accomplished)	a. Develop and apply criteria to select a varied repertoire to study and perform based on an understanding of theoretical and structural characteristics and expressive challenges in the music, the technical skill of the individual or ensemble, and the purpose and context of the performance.	X	Content Knowledge	Vowel color and intonation
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		X	Physical Skill	“Ah” sound is the same
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Listen to vowel colors of others.
- Match vowel colors to others.

UNIT 18: Microphone Technique

Vocal Awareness/Technique

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.3.T.HSI (Proficient)	Demonstrate how understanding the context, expressive challenges, and use of digital tools in a varied repertoire of music influence prepared or improvised performances.	x	Content Knowledge	EQ system, frequencies, compression
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
		x	Physical Skill	That microphone placement doesn't matter and will pick up your voice anywhere
			Product Development	RESOURCES
			Learning Behavior	microphones, mixing board

LEARNING TARGETS

I CAN

- Use and hold microphones.
- Adjust EQ settings to fortify vocal quality.



Bristol Public Schools
Office of Teaching & Learning

Department	Music
Department Philosophy	The visual and performing arts are critical in the development of every child. In a diverse and ever changing society, the visual and performing arts are integral in the consistency, appreciation, and creativity of tomorrow's leaders. The fine arts are a universal language, allowing students to learn unique skills and means of expression that contributes back to our society. We believe visual and performing arts create lifelong learners harnessed with empathy and skills necessary to understand our past, present and future world.
Course	Jazz Band
Course Description for Program of Studies	This is a semester based course where students will learn how to perform jazz music together in a small group. Students will learn styles of Salsa, Latin, and Swing to name a few. They will also learn how to perform in modes common to jazz music. This will allow students the opportunity to learn how to improvise and perform solos.
Grade Level	9-12
Pre-requisites	Previous or current enrollment in another ensemble
Credit (if applicable)	.5

P indicates standard will be a priority for the unit; **S** indicates a supporting standard

District Learning Expectations and Standards	Jazz Articulation	Style	Blues Scales	Modes	Tempo	Rhythm	ID in Text
Creating							
MU:Cr1.1 Generate and conceptualize artistic ideas and work.	S		P	P			
MU:Cr2.1 Organize and develop artistic ideas and work.	S						
MU:Cr3.1 Refine and complete artistic work.	S						
Performing							
MU:Pr4.1 Select, analyze and interpret artistic work for presentation.	P	S	S	S	P		P
MU:Pr5.1 Develop and refine artistic techniques and work for presentation.		S					
MU:Pr6.1 Convey meaning through the presentation of artistic work.	P	P			S	P	S
Responding							

MU:Re7.1 Perceive and analyze artistic work.		S				S	
MU:Re8.1 Interpret intent and meaning in artistic work.		P			S		
MU:Re9.1 Apply criteria to evaluate artistic work.							
Connecting							
MU:Cn10.0 Synthesize and relate knowledge and personal experiences to make art.	S						
MU:Cn11.1 Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.		S					

ESSENTIAL QUESTIONS OF STANDARDS

- How do musicians generate creative ideas?
- How do musicians make creative decisions?
- How do musicians improve the quality of their creative work?
- How does understanding the structure and context of musical works inform performance?
- When is a performance judged ready to present? How do context and the manner in which the musical work is presented influence audience response?
- How do musicians make meaningful connections to creating, performing, and responding?
- How do performers select repertoire?
- How do we discern the musical creators' and performers' expressive intent?
- How do performers interpret musical works?
- How do individuals choose music to experience?

ENDURING UNDERSTANDING OF STANDARDS

- The creative ideas, concepts, and feelings that influence musicians' work emerge from a variety of sources.
- Musicians' creative choices are influenced by their expertise, context, and expressive intent.
- Musicians evaluate and refine their work through openness to new ideas, persistence, and the application of appropriate criteria.
- Analyzing creators' context and how they manipulate elements of music provides insight into their intent and informs performance.
- Musicians judge performance based on criteria that vary across time, place, and cultures. The context and how a work is presented influence the audience response.
- Musicians connect their personal interests, experiences, ideas, and knowledge to creating, performing, and responding.
- Performers' interest in and knowledge of musical works, understanding of their own technical skill, and the context for a performance influence the selection of repertoire.
- Performers make interpretive decisions based on their understanding of context and expressive intent.
- Through their use of elements and structures of music, creators and performers provide clues to their expressive intent.
- Individuals' selection of musical works is influenced by their interests, experiences, understandings, and purposes.

UNIT 1: Jazz Articulation

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Cr1.1. E.Hs novice-	Compose and improvise melodic and rhythmic ideas or motives that reflect characteristic(s) of music or text(s) studied in rehearsal.		Content Knowledge	Dot tonguing, du tonguing, da tonguing, dit tonguing
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Cr2.1. E.Hs novice.	Select and develop draft melodic and rhythmic ideas or motives that demonstrate understanding of characteristic(s) of music or text(s) studied in rehearsal.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Cr3.1. E.Hs novice	Evaluate and refine draft compositions and improvisations based on knowledge, skill, and teacher-provided criteria.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.2. E.Hs	Demonstrate, using music reading skills where appropriate, how the setting and formal	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	characteristics of musical works contribute to understanding the context of the music in prepared or improvised performances.		Physical Skill
		X	Product Development
			Learning Behavior
MU:Pr6.1.E.Hs intermediate	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Content Knowledge
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
		X	Physical Skill
			Product Development
			Learning Behavior
MU:Cn10.0.E.HSI	Demonstrate how interests, knowledge, and skills relate to personal choices and intent when creating, performing, and responding to music.		Content Knowledge
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
			Physical Skill
			Product Development
			Learning Behavior

LEARNING TARGETS

I CAN

- Perform using jazz articulations
- Demonstrate an understanding of jazz articulations..
- Identify and demonstrate different jazz articulations.
- Improvise melodies using various jazz articulations.

UNIT 2: Swing and Straight Styles

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Swing and straight
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
			Physical Skill	All jazz is swing
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	

MU:Pr6.1. E.Hs intermediate	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: swing.
- Perform music using swing style.
- Demonstrate an understanding of the difference between swing and straight styles.
- Improvise a melody using swing rhythms.

UNIT 3: Blues

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Blues
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Physical Skill	Major scales
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Major scales
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Major scales
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	

			Learning Behavior	
MU:Pr6.1. E.Hs intermediate	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: blues.
- Perform music using blues style and scale.
- Demonstrate an understanding of the blues.
- Improvise a melody using the blues scales.

UNIT 4: Ballad

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Ballad
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Ballad
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Ballad
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	Demonstrate attention to technical accuracy and expressive qualities in prepared	X	Content Knowledge	Ballad
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1.E.Hs intermediate	Identify and support interpretations of the expressive content and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: ballad.
- Perform music using ballad style.
- Improvise a melody ballad style.

UNIT 5: Latin Styles

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Latin style
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
			Physical Skill	Latin=Hispanic
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	

MU:Pr6.1. E.Hs intermediate	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: latin.
- Perform music using latin style.
- Demonstrate an understanding of the difference between latin and straight styles.
- Improvise a melody using latin rhythms and styles.

RESOURCES

-Tito Puente

UNIT 6: Samba

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Samba
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Samba
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Samba
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	Demonstrate attention to technical accuracy and expressive qualities in prepared	X	Content Knowledge	Samba
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: samba.
- Perform music using samba style.
- Demonstrate an understanding of the difference between samba and straight styles.
- Improv a melody using samba rhythms and style.

UNIT 7: Salsa

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
Standards: MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Salsa
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Salsa
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Salsa
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	Demonstrate attention to technical accuracy and	X	Content Knowledge	Salsa
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: salsa.
- Perform music using salsa style.
- Demonstrate an understanding of the difference between salsa and straight styles.
- Improvise a melody using salsa rhythms and style.

UNIT 8: Bossanova

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Bossanova
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Bossanova
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Bossanova
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	MU:Pr6.1.E.Hs intermediate Demonstrate attention to	X	Content Knowledge	Bossanova
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: bossanova.
- Perform music using bossanova style.
- Demonstrate an understanding of the difference between bossanova and straight styles.
- Improving a melody using bossanova rhythms and style.

UNIT 9: Rock

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Rock
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS
			Physical Skill	Rock is loud and fast
		X	Product Development	COMMON MISCONCEPTIONS
		X	Learning Behavior	Rock is loud and fast
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	MU:Pr6.1.E.Hs intermediate Demonstrate attention to technical accuracy and	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: rock.
- Perform music using rock style.
- Demonstrate an understanding of the difference between rock and straight styles.
- Improvising a melody using rock rhythms and style.

UNIT 10: Funk

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Funk
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Funk
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Funk
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	Demonstrate attention to technical accuracy and	X	Content Knowledge	Funk
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: funk.
- Perform music using funk style.
- Demonstrate an understanding of the difference between funk and straight styles.
- Improvise a melody using funk rhythms and style.

UNIT 11: Shuffle

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Shuffle
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
		X	Learning Behavior	
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Shuffle
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge	Shuffle
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr6.1. E.Hs	MU:Pr6.1.E.Hs intermediate Demonstrate attention to technical accuracy and	X	Content Knowledge	Shuffle
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	

intermediate	expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: shuffle.
- Perform music using shuffle style.
- Demonstrate an understanding of the difference between shuffle and straight styles.
- Improv a melody using shuffle rhythms and style.

UNIT 12: Waltz

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary	
MU:Pr4.1. E.Hs intermediate	Select a varied repertoire to study based on music reading skills (where appropriate), an understanding of formal design in the music, context, and the technical skill of the individual and ensemble.		Content Knowledge	Jazz Waltz	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	COMMON MISCONCEPTIONS	
			Physical Skill		
		X	Product Development	Waltz is only for dancing	
		X	Learning Behavior		
MU:Pr4.2. E.Hs novice	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Waltz is only for dancing	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		
			Physical Skill		
		X	Product Development		
			Learning Behavior		
MU:Pr4.3. E.Hs intermediate	Demonstrate understanding and application of expressive qualities in a varied repertoire of music through prepared and improvised performances.	X	Content Knowledge		Waltz is only for dancing
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		
			Physical Skill		
		X	Product Development		
			Learning Behavior		
MU:Pr6.1. E.Hs	Demonstrate attention to technical accuracy and expressive qualities in prepared	X	Content Knowledge	Waltz is only for dancing	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		

intermediate	and improvised performances of a varied repertoire of music representing diverse cultures and styles.		Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs intermediate	Identify and support interpretations of the expressive intent and meaning of musical works, citing as evidence the treatment of the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Describe the different styles of music in relation to jazz: jazz waltz.
- Perform music using jazz waltz style.
- Demonstrate an understanding of the difference between jazz waltz and straight styles.
- Improvising a melody using jazz waltz rhythms and style.

UNIT 13: Scales

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary	
MU:Pr4.1. E.Hs novice.	Select varied repertoire to study based on interest, music reading skills (where appropriate), an understanding of the structure of the music, context, and the technical skill of the individual or ensemble		Content Knowledge	Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian, and Locrian modes, pentatonic scales, blues scale	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Physical Skill	Major Scales	
		X	Product Development		
		X	Learning Behavior		
MU:Pr4.2. E.HSI	Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.		Content Knowledge		
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		
			Physical Skill		
		X	Product Development		
			Learning Behavior		
MU:Cr1.1. E.Hs novice	Compose and improvise melodic and rhythmic ideas or motives that reflect characteristic(s) of music or text(s) studied in rehearsal.	X	Content Knowledge		
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		
			Physical Skill		
		X	Product Development		

		Learning Behavior	
--	--	-------------------	--

LEARNING TARGETS

I CAN

- Demonstrate understanding of how a blues scale is formed, how modes are formed, how pentatonic scales are formed,
- Perform blues scales in Concert Bb, C, Eb, and F Major Scales, Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian, and Locrian modes, pentatonic scales.
- Improv using a blues scale, modes, and pentatonic scales over chords.

UNIT 14: Identifying in the Text

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary	
MU:Pr4.2. E.HSI	Demonstrate, using music reading skills where appropriate, how compositional devices employed and theoretical and structural aspects of musical works impact and inform prepared or improvised performances.		Content Knowledge	mute techniques, pitch bend, turn, lip turn, and squeeze	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT	
			Physical Skill		Jazz articulation, key signatures
		X	Product Development		
			Learning Behavior		
MU:Pr6.1. E.Hs intermediate	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music representing diverse cultures and styles.	X	Content Knowledge		
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)		
			Physical Skill		
		X	Product Development		
			Learning Behavior		

LEARNING TARGETS

I CAN

- Identify a glissando, mute techniques, pitch bend, turn, lip turn, and squeeze
- Perform a glissando, mute techniques, pitch bend, turn, lip turn, and squeeze in music
- Demonstrate understanding of a glissando, mute techniques, pitch bend, turn, lip turn, and squeeze

UNIT 15: Tempo

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr4.2. E.Hs novice-	Demonstrate, using music reading skills where appropriate, how knowledge of formal aspects in musical works inform prepared or improvised performances.		Content Knowledge	Swing and ballad
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.3. E.Hs novice	Identify expressive qualities in a varied repertoire of music that can be demonstrated through prepared and improvised performances.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re8.1. E.Hs novice	Identify interpretations of the expressive intent and meaning of musical works, referring to the elements of music, contexts, and (when appropriate) the setting of the text.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	

MU:Pr6.1. E.Hs novice	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music.	X	Content Knowledge	
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Identify swing (132), ballad tempo (60-80), in the music
- Define swing tempo (132), ballad tempo (60-80)
- Perform swing tempo (132) tempo, ballad tempo (60-80) by following a conductor

UNIT 16: Rhythm

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Pr6.1. E.Hs novice	Demonstrate attention to technical accuracy and expressive qualities in prepared and improvised performances of a varied repertoire of music.	X	Content Knowledge	Straight 16ths
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re7.1. E.Hs novice	Identify reasons for selecting music based on characteristics found in the music, connection to interest, and purpose or context.	X	Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
			Learning Behavior	

LEARNING TARGETS

I CAN

- Perform straight 16th notes when performing swing
- Demonstrate understanding of proper rhythms using swing style.



Bristol Public Schools
Office of Teaching & Learning

Department	Music
Department Philosophy	The visual and performing arts are critical in the development of every child. In a diverse and ever changing society, the visual and performing arts are integral in the consistency, appreciation, and creativity of tomorrow's leaders. The fine arts are a universal language, allowing students to learn unique skills and means of expression that contributes back to our society. We believe visual and performing arts create lifelong learners harnessed with empathy and skills necessary to understand our past, present and future world.
Course	Digital Music
Course Description for Program of Studies	This course introduces students to digital music using computers, synthesizers and digital audio workstations to create original music. Students will collaborate with others to create works across other subjects such as art, theater, film, dance, english.
Grade Level	9-12
Pre-requisites	none
Credit (if applicable)	.5

P indicates standard will be a priority for the unit; **S** indicates a supporting standard

District Learning Expectations and Standards	Tools of the Trade	Interdisciplinary Collaboration	Post-Production
Creating			
MU:Cr1.1 Generate and conceptualize artistic ideas and work.	P		
MU:Cr2.1 Organize and develop artistic ideas and work.		P	
MU:Cr3.1 Refine and complete artistic work.		S	P
Performing			
MU:Pr4.1 Select, analyze and interpret artistic work for presentation.	P	S	
MU:Pr5.1 Develop and refine artistic techniques and work for presentation.		S	

MU:Pr6.1 Convey meaning through the presentation of artistic work.			
Respond			
MU:Re7.1 Perceive and analyze artistic work.		S	
MU:Re8.1 Interpret intent and meaning in artistic work.			
MU:Re9.1 Apply criteria to evaluate artistic work.	S		P
Connecting			
MU:Cn10.0 Synthesize and relate knowledge and personal experiences to make art.			
MU:Cn11.1 Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.		P	

ESSENTIAL QUESTIONS OF STANDARDS

- How do musicians generate creative ideas?
- How does understanding the structure and context of musical works inform performance?
- How do we judge the quality of musical work(s) and performance(s)?
- How do musicians make creative decisions?
- How do musicians improve the quality of their creative work?
- How do performers select repertoire?
- How do performers interpret musical works?
- When is creative work ready to share?
- How do we judge the quality of musical work(s) and performance(s)?
- How do individuals choose music to experience?
- How do the other arts, other disciplines, contexts and daily life inform creating, performing, and responding to music?

ENDURING UNDERSTANDING OF STANDARDS

- The creative ideas, concepts, and feelings that influence musicians' work emerge from a variety of sources.
- Analyzing creators' context and how they manipulate elements of music provides insight into their intent and informs performance.
- The personal evaluation of musical works and performances is informed by analysis, interpretation, and established criteria.
- Musicians' creative choices are influenced by their expertise, context, and expressive intent.
- Musicians evaluate and refine their work through openness to new ideas, persistence, and the application of appropriate criteria.
- Performers' interest in and knowledge of musical works, understanding of their own abilities, and the context for a performance influence the selection of repertoire.
- Musicians' creative choices are influenced by their context, expressive intent, and established criteria.
- Individuals' selection of musical works is influenced by their interests, experiences, understandings, and purposes.
- Understanding connections to varied contexts and daily life enhances musicians' creating, performing, and responding.
- Musicians' presentation of creative work is the culmination of a process of creation and communication.
- The personal evaluation of musical works and performances is informed by analysis, interpretation, and established criteria.

UNIT 1: Tools of the Trade

UNWRAPPED STANDARDS

Standard		Type of Standard	Concepts and Disciplinary-Specific Vocabulary
MU:Cr1.1. T.HSI (Proficient)	Generate melodic, rhythmic, and harmonic ideas for compositions or improvisations using digital tools.		Content Knowledge
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
			Physical Skill
			Product Development
			Learning Behavior
MU:Pr4.2. T.HSI	Describe how context, structural aspects of the music, and digital media/tools inform prepared and improvised performances.		Content Knowledge
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
			Physical Skill
			Product Development
		X	Learning Behavior
MU:Re9.1. T.HSI	Evaluate music using criteria based on analysis, interpretation, digital and electronic features, and personal interests.		Content Knowledge
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)
			Physical Skill
		X	Product Development
			Learning Behavior
			RESOURCES
			Computers, mics, cables (hardware) Notation, loop, DAW software Instructional videos Peer/teacher evaluations and guidance

LEARNING TARGETS

I CAN

- Compose and realize musical ideas using notation software
- Create musical sketches/soundscapes using loops
- Record live sounds using microphones
- Manipulate sound and layer/overdub tracks using DAW

UNIT 2: Interdisciplinary Collaboration

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Cr2.1. T.HSII (Accomplished)	Select melodic, rhythmic, and harmonic ideas to develop into a larger work that exhibits unity and variety using digital and analog tools.		Content Knowledge	Compose original music, record & edit podcast, Create music for a specific use. Workflows, deadlines Collaboration
		X	Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT
			Physical Skill	Understanding the needs of 'client'
			Product Development	RESOURCES
			Learning Behavior	Interdisciplinary peer or teachers, Timeline flowcharts with deadlines for deliverables, Scripts, Videos, etc...
MU:Cr3.1. T.HSI (Proficient)	Drawing on feedback from teachers and peers, develop and implement strategies to improve and refine the technical and expressive aspects of draft compositions and improvisations.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Pr4.1. T.HSI	Develop and explain the criteria used for selecting a varied repertoire of music based on interest, music reading skills, and an understanding of the performer's technical and technological skill.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	

MU:Pr4.3. T.HSI	Demonstrate how understanding the context, expressive challenges, and use of digital tools in a varied repertoire of music influence prepared or improvised performances.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
		X	Physical Skill	
			Product Development	
			Learning Behavior	
MU:Pr5.1. T.HSII	Develop and implement rehearsal strategies to improve and refine the technical and expressive aspects of prepared and improvised performances in a varied repertoire of music.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
		X	Learning Behavior	
MU:Re7.I. T.HSII	Select and critique contrasting musical works, defending opinions based on manipulations of the elements of music, digital and electronic aspects, and the purpose and context of the works.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Cn11.0 .T.HSII	Demonstrate understanding of relationships between music and the other arts, other disciplines, varied contexts and daily life.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
		X	Learning Behavior	

LEARNING TARGETS

I CAN

- Connect with students in other disciplines to create a collaborative work
- - English (or language arts) / Civics: create a podcast
 - . record interviews
 - . compose theme/incidental music
- - Theater: compose music for a theatrical performance
 - . write and notate music
 - . arrange with instruments (virtual or real)
 - . record singer/instrumentalist (if necessary)
- - Arts: compose music for an art installation
 - . write and notate music
 - . arrange with instruments (virtual or real)
 - . record singer/instrumentalist (if necessary)
- - Film: compose music for a video / record sound effects and dialogue
 - . write and notate music
 - . arrange with instruments (virtual or real)
 - . record actors
 - . mix sound effects
- - Other cross-discipline projects (Video Game Design, Choreography, Website Design, Music Video Production, Social Media Marketing And Communication, etc.)

UNIT 3 : Post-Production

UNWRAPPED STANDARDS

Standard		Type of Standard		Concepts and Disciplinary-Specific Vocabulary
MU:Cr3. 2.T.HSII	Share compositions and improvisations that demonstrate an accomplished level of musical and technological craftsmanship as well as the use of digital and analog tools and resources in developing and organizing musical ideas.		Content Knowledge	Mixing and Mastering Product, Deliverables
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
		X	Product Development	
			Learning Behavior	
MU:Re9. 1.T.HSII	Apply criteria to evaluate music based on analysis, interpretation, artistic intent, digital, electronic, and analog features, and musical qualities.		Content Knowledge	
			Skill (Problem-Solving, Writing, Speaking, Listening, Reasoning)	
			Physical Skill	
			Product Development	
		X	Learning Behavior	

LEARNING TARGETS

I CAN

- Assemble audio elements
- Link audio to video elements

- Edit and master audio (effects, panning, level, ...)
- Create a high-quality finished product on time
- Present the collaborative work to the public