

# Lakewood City Schools



## Middle School STEM Course of Study

Garfield Middle School

Harding Middle School

West Shore Career-Technical District

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### Course Description

This course shows how classroom learning translates into marketable skills. Through project-based and hands-on learning, students will engage in career related experiences to acquire basic skills in various career fields. This provides students with tangible experiences to begin career decision making. Teachers have flexibility to select career fields related to grade appropriate specific content. Students will gain an understanding of 21st century skills. Students will also identify career interests and skills to develop an understanding of how personal characteristics can impact career choice. Students will explore the 16 Ohio career fields and create a preliminary career plan using online tools (OhioMeansJobsK-12). Students will also begin exploring engineering and science technologies using hand-on activities and computer programs to develop skills needed in future careers.

Grades: 6, 7, 8

Course: STEM - Related Arts Course with 10 week rotations

This document will be updated to reflect ODEs revision of standards for the 2017-18 school year.

**\*\*Organized by All grades and/or Specific Grade Level and divided by Content Standard for each grade level/project.\*\***

Grade Level	Content Standards	Unpacked Standards What is this standard asking students to know and be able to do?	Task (performance, literacy, math, etc.)	Resources
All Grades				
	<p>Science Inquiry and Application: Have and enforce a safety contract with students and parents.</p> <p>Science Inquiry and Application: Enforcement of safety procedures</p>	<p>I can read safety contract and sign and obtain parent signature.</p> <p>I can acknowledge and practice the safety procedures in the STEM classroom.</p>	Safety	Teacher created
	<p>CCSS.ELA-Literacy.CCRA.R. College and Career Readiness Anchor Standards for Reading: <a href="#">CCSS.ELA-LITERACY.CCRA.R.10</a> Read and comprehend complex literary and informational texts independently and proficiently. <a href="#">CCSS.ELA-LITERACY.CCRA.R.1</a> Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.</p>	<p>I can read a variety of informational texts.</p> <p>I can make inferences from texts.</p> <p>I can cite textual evidence to support conclusions.</p>	Career Research	Teacher Created  Defined STEM
	<p>CCSS.ELA-Literacy.CCRA.W. College and Career Readiness Anchor Standards for Writing: <a href="#">CCSS.ELA-LITERACY.CCRA.W.4</a> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. <a href="#">CCSS.ELA-LITERACY.CCRA.W.6</a></p>	<p>I can write a descriptive and/or informative essay.</p> <p>I can use technology to research and write about various careers in STEM.</p>	Career Research	Teacher Created  Defined STEM

Approved in 2016-2017 school year.

	<p>Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.  <a href="#">CCSS.ELA-LITERACY.CCRA.W.7</a>  Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.  <a href="#">CCSS.ELA-LITERACY.CCRA.W.10</a>  Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.</p>	I can research a STEM career for its definition, need, specific tasks, and compensation.		
	<p>CCSS.ELA-Literacy.CCRA.L. College and Career Readiness Anchor Standards for Language</p> <p>Conventions of Standard English:  <a href="#">CCSS.ELA-LITERACY.CCRA.L.1</a></p> <p>Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p> <p><a href="#">CCSS.ELA-LITERACY.CCRA.L.2</a></p> <p>Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.</p>	I can use proper grammar and spelling in essay and presentations.	Career Research	Teacher Created
	<p>College and Career Readiness Anchor Standards for Standards for Reading:  <a href="#">CCSS.ELA-LITERACY.CCRA.R.10</a>  Read and comprehend complex literary and informational texts independently and proficiently.</p>	I can read a variety of informational texts to gather information related to a topic.	All tasks	DefinedSTEM Teacher Created
	<p>CCSS.ELA-Literacy.CCRA.SL. College and Career Readiness Anchor Standards for Speaking and Listening  <a href="#">CCSS.ELA-LITERACY.SL.8.1,7.1,6.1</a>  Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6, 7, or 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	I can engage in group discussions to express, collaborate, and build upon ideas of group members to meet specific goals.	All tasks	DefinedSTEM Teacher Created
	<p><a href="#">CCSS.ELA-LITERACY.SL.6.5</a></p>	I can create a visual display to present	All tasks	DefinedSTEM

Approved in 2016-2017 school year.

	Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.	ideas to meet specific goals.		Teacher Created
	<a href="#">CCSS.ELA-LITERACY.CCRA.W.6</a> Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.	I can use technology to research, create, and present ideas.	All tasks	DefinedSTEM Teacher Created
	OH New Learning Standards: ELA: Writing Standard: Craft and Structure 6. Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.	I can use technology to produce and publish writing and to collaborate with others.	All tasks	DefinedSTEM Teacher Created
	OH New Learning Standards: ELA: Writing Standard: Research to build and present knowledge 7. Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate. 8. Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources. 9. Draw evidence from literary or informational texts to support analysis, reflection, and research.	I can conduct research to answer a question.  I can gather information from many sources and put it in my own words.  I can support my research with evidence.	All tasks	DefinedSTEM Teacher created
6th Grade				
	Science and Technology- 1. Explain how technology influences the quality of life. 2. Explain how decisions about the use of products and systems can result in desirable and undesirable consequences. 3. Describe how automation (e.g. robots) has changed manufacturing including manual labor being replaced by highly-skilled jobs.	I can explain how technology has improved my life.  I can explain the benefits and risks that accompany a certain technology.  I can explain how technology has made some jobs obsolete and created new jobs.	Technology Project	Teacher Created  ODE Career Framework

	<p>Scientific Way of Knowing</p> <p>4. Describe how the pursuit of scientific knowledge is beneficial for any career and for daily life.</p>	<p>I can explain how science was involved in the development of a specific technology.</p>	<p>Technology Project</p>	<p>Teacher Created</p>
	<p>Career Exploration</p> <ol style="list-style-type: none"> <li>1. Topics covered: Why people work? ; Purpose of School; how school affects your future career; what makes a good student; how can I be a better student? (learning styles inventory)</li> <li>2. <a href="http://www.educationplanner.org/index.html">http://www.educationplanner.org/index.html</a> Upload results to Ohiomeansjobs (OMJ) Backpack</li> <li>3. Introduction to OHIOMEANSJOBS <a href="https://jobseeker.k-12.ohiomeansjobs.monster.com/seeker.aspx">https://jobseeker.k-12.ohiomeansjobs.monster.com/seeker.aspx</a></li> <li>4. Create a Backpack</li> <li>5. Visit from the Counselor to share their job and how they can help students succeed</li> </ol>	<p>I can explain why people work.</p> <p>I can explain the purpose of school and how schooling affects my future career.</p> <p>I can explain how to be a better student.</p> <p>I can establish a “Backpack” and complete items in the ODE Backpack.</p>	<p>Career Exploration</p>	<p>Teacher Created</p> <p>ODE website (Ohio Means Jobs)</p> <p>ODE Career Framework</p> <p>EducationPlanner.org - assessments</p>
	<p>CCSS.ELA-Literacy.CCRA.SL.4 Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</p>	<p>I can present information and product in a way that shows research, organization, and style.</p>	<p>Create Superstar Musical Group</p>	<p>DefinedSTEM</p>
	<p>CCSS.ELA-Literacy.SL.6.4 Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.</p>	<p>I can present information to an audience using eye contact, adequate volume, and speak clearly.</p>	<p>Create Superstar Musical Group</p>	<p>DefinedSTEM</p>
	<p>CCSS.ELA-Literacy.L.6.6 Acquire and use accurately grade-appropriate general academic and</p>	<p>I can present information using appropriate vocabulary terms and complete thoughts.</p>	<p>Create Superstar Musical Group</p>	<p>DefinedSTEM</p>

	domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.			
	Science and Technology- Design and build a product or create a solution to a problem given one constraint (e.g. limits of cost and time for design and production, supply of materials and environmental effects).	I can draw a detailed sketch of a design prior to the building process based on the given constraints.	Create a Superstar Musical Group.	Teacher Created Defined STEM
	Mathematical Practices CCSS.Math.Practice.MP1 Make sense of problems and persevere in solving them. CCSS.Math.Practice.MP2 Reason abstractly and quantitatively. CCSS.Math.Practice.MP4 Model with mathematics. CCSS.Math.Practice.MP5 Use appropriate tools strategically. CCSS.Math.Practice.MP6 Attend to precision.	I can create an artificial island that meets a specific list of criteria.  I can create a map that includes scale, compass rose, and a legend or key.	Artificial Island Real Estate Agent	DefinedSTEM
	CCSS.ELA-Literacy.W.6.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	I can create an advertisement that will show the specific audience (prospective buyer) the features of the island.	Artificial Island Real Estate Agent	DefinedSTEM
	CCSS.ELA-Literacy.CCRA.SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.	I can create an advertisement that will show the specific audience (prospective buyer) the features of the island.	Artificial Island Real Estate Agent	DefinedSTEM
	Science Inquiry and Application(6.SI.3. ) Use appropriate mathematics, tools and techniques to gather data and information;	I can gather information about the construction of the islands and incorporate it into my project.	Artificial Island Real Estate Agent	DefinedSTEM

		I can use appropriate mathematical tools to create my island.		
	CCSS.ELA-Literacy.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	I can research a specific endangered species and apply my findings to create a campaign to help that species.	Zoology Project	DefinedSTEM
	CCSS.ELA-Literacy.W.6.2a Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.	I can gather information about the species I have chosen and present my information in a detailed creative presentation.	Zoology Project	DefinedSTEM
	CCSS.ELA-Literacy.W.6.7 Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.	I can conduct a short research project.	Zoology Project	DefinedSTEM  DefinedSTEM
	<p>SOCIAL STUDIES PROGRAMS SHOULD INCLUDE EXPERIENCES THAT PROVIDE FOR THE STUDY OF PEOPLE, PLACES, AND ENVIRONMENTS.</p> <ul style="list-style-type: none"> <li>● KNOWLEDGE - Learners will understand: <ul style="list-style-type: none"> <li>○ (3.1.7. ) Human modifications of the environment.</li> </ul> </li> <li>● PROCESSES - Learners will be able to: <ul style="list-style-type: none"> <li>○ (3.2.6. ) Evaluate the consequences of human actions in environmental</li> </ul> </li> </ul>	I can research a specific endangered species and the impacts humans are having on the species.	Zoology Project	DefinedSTEM

	terms.			
	LIFE SCIENCE (Grade 7 LS) The variety of physical (abiotic) conditions that exists on Earth gives rise to diverse environments (biomes) and allows for the existence of a wide variety of organisms (biodiversity).	I can explain how humans (biotic) impact the environment.	Zoology Project	DefinedSTEM
	LIFE SCIENCE (Grade 7 LS) Ecosystems are dynamic in nature; the number and types of species fluctuate over time. Disruptions, deliberate or inadvertent, to the physical (abiotic) or biological (biotic) components of an ecosystem impact the composition of an ecosystem.	I can explain how the absence or endangerment of a species can impact the balance of an ecosystem.	Zoology Project	DefinedSTEM
7th Grade				
	Career Readiness	I can revisit Ohiomeansjobs.org complete the Career Profile	Career Readiness	ODE Career Pathways <a href="https://education.ohio.gov/Topics/Career-Tech/Career-Connections/Career-Connections-Framework">https://education.ohio.gov/Topics/Career-Tech/Career-Connections/Career-Connections-Framework</a>
	Career Readiness	I can research a career on that matches the Career Profile	Career Readiness	ODE Career Pathways
	Career Readiness	I can explore learning strategies in Career Connections Learning Strategies	Career Readiness	ODE Career Pathways EducationPlanner.org
	CCSS.ELA-Literacy.CCRA.W.4 Produce clear and coherent writing in which the development,	I can research an animal to determine its basic needs.	Building a Zoo Habitat	DefinedSTEM

	organization, and style are appropriate to task, purpose, and audience.	I can write a proposal to a zoo to create a habitat taking all needs of animal into account.		
	Text Types and Purposes 4- Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	I can write a proposal to a zoo to create a habitat taking all needs of animal into account.	Building a Zoo Habitat	DefinedSTEM
	CCSS.ELA-Literacy.W.7.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	I can gain information on an animal using a variety of resources.  I can restate information gathered or cite resources in a presentation.	Building a Zoo Habitat	DefinedSTEM
	CCSS.ELA-Literacy.W.7.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.	I can research multiple sources to gather information on an animal's needs and/or habits.	Building a Zoo Habitat	DefinedSTEM
	Life Science (LS)- Topic: Cycles of Matter and Flow of Energy - Matter is transferred continuously between one organism to another and between organisms and their physical environments.	I can create a model of the energy flowing through my aquatic habitat in the form of a food web.	Building a Zoo Habitat	DefinedSTEM
	7.LS.2.1. Biomes are regional ecosystems characterized by distinct types of organisms that have developed under specific soil and climatic conditions.	I can create a model of the energy flowing through my aquatic habitat with the organisms appropriate to the biome.	Building a Zoo Habitat	DefinedSTEM
	7.SI.5. Develop descriptions, models, explanations and predictions.	I can create a model of an aquatic habitat with organisms that can coexist.	Building a Zoo Habitat	DefinedSTEM

	<p>Mathematical Practices</p> <p>CCSS.Math.Practice.MP4 Model with mathematics.</p> <p>CCSS.Math.Practice.MP5 Use appropriate tools strategically.</p> <p>CCSS.Math.Practice.MP6 Attend to precision.</p>	I can create a model of my aquatic habitat with precise measurements.	Building a Zoo Habitat	DefinedSTEM
	<p>CCSS.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	I can create a scale model of an aquarium.	Building a Zoo Habitat	DefinedSTEM
	<p>CCSS.ELA-Literacy.CCRA.W.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>	I can research the types of backpacks on the market and apply my understanding to create my own design.	Backpack Designer	DefinedSTEM
	<p>CCSS.ELA-Literacy.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.</p>	I can research the types of backpacks on the market and apply my understanding to create my own design.	Backpack Designer	DefinedSTEM
	<p>CCSS.ELA-Literacy.W.4.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.</p>	I can use my research of current backpacks and make improvements in my own design.	Backpack Designer	DefinedSTEM
	<p>CCSS.ELA-Literacy.SL.7.4 Present claims and</p>	I can explain why my backpack is an improvement on current models.	Backpack Designer	DefinedSTEM

	findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.			
	7.SI.5. Develop descriptions, models, explanations and predictions.	I can create a model of my backpack.	Backpack Designer	DefinedSTEM
	Mathematical Practices CCSS.Math.Practice.MP4 Model with mathematics. CCSS.Math.Practice.MP5 Use appropriate tools strategically. CCSS.Math.Practice.MP6 Attend to precision. CCSS.Math.Practice.MP7 Look for and make use of structure.	I can create a model of my backpack using precise measurement.	Backpack Designer	DefinedSTEM
	CCSS.Math.Content.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	I can complete the mathematical operations needed to design a playground using measurements.  I can calculate the total cost of my playground.	Design a Playground or Skatepark	DefinedSTEM  Teacher Created
	CCSS.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	I can create my playground using scaled measurements.	Design a Playground or Skatepark	DefinedSTEM  Teacher Created
	CCSS.Math.Content.7.G.A.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions.	I can use the appropriate tools to draw an accurate, scaled blueprint of my playground design.	Design a Playground or Skatepark	DefinedSTEM  Teacher Created
	CCSS.Math.Content.7.G.B.6 Solve real-world and	I create a playground the fits into the area given.	Design a Playground or	DefinedSTEM

	mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.		Skatepark	Teacher Created
	CCSS.ELA-Literacy.W.7.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.	I can research specific types of playground equipment.	Design a Playground or Skatepark	DefinedSTEM Teacher Created
	Science Inquiry and Application - During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory safety techniques, to construct their knowledge and understanding in all science content areas: <ul style="list-style-type: none"> <li>• (7.SI.5. ) Develop descriptions, models, explanations and predictions.</li> <li>• (7.SI.6. ) Think critically and logically to connect evidence and explanations.</li> <li>• (7.SI.8. ) Communicate scientific procedures and explanations.</li> </ul>	I can research types of playground equipment (slides, swings, flooring, etc) and create a model based on my findings.	Design a Playground or Skatepark	DefinedSTEM Teacher Created
	CCSS.ELA-Literacy.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	I can research current mini-golf courses to gain an understanding for my own design.	Final Design Project-Cardboard Mini-Golf Course	Teacher Created
	Science Inquiry and Application - During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory safety techniques, to construct their knowledge and	I can create a mini-golf hole with obstacles using information I have researched.	Final Design Project-Cardboard Mini-Golf	Teacher Created

	<p>understanding in all science content areas:</p> <ul style="list-style-type: none"> <li>• (7.SI.5. ) Develop descriptions, models, explanations and predictions.</li> <li>• (7.SI.6. ) Think critically and logically to connect evidence and explanations.</li> <li>• (7.SI.8. ) Communicate scientific procedures and explanations.</li> </ul>	When I encounter problems with my design, I can make modifications and improvements.	Course	
	<p>CCSS.Math.Content.7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	I can use mathematical shapes and angles in my course.	Final Design Project- Cardboard Mini-Golf Course	Teacher Created
	<p>CCSS.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	I can include geometric figures and scaled measurements in my design and model.		Teacher Created
	<p>Science LS- Cycles of Matter and Flow of Energy</p> <p>Ecosystems are dynamic in nature; the number and types of species fluctuate over time. Disruptions, deliberate or inadvertent, to the physical (abiotic) or biological (biotic) components of an ecosystem impact the composition of an ecosystem.</p>		Environmental Citizenship Project	Teacher Created

	<p>Social Studies-</p> <ul style="list-style-type: none"> <li>• (3.2.6. ) Evaluate the consequences of human actions in environmental terms.</li> <li>• (3.1.1. ) The theme of people, places, and environments involves the study of the relationships between human populations in different locations and geographic phenomena such as climate, vegetation, and natural resources.</li> </ul>		Environmental Citizenship Project	Teacher Created
			Environmental Citizenship Project	Teacher Created
8th Grade				
	<p>Revisit <a href="http://Ohiomeansjobs.org">Ohiomeansjobs.org</a></p> <p>Research a career in NE Ohio considering the career profile results and the career cluster results</p> <p>Career-Tech Presentation</p>	<p>I can research a career focused in NE Ohio.</p> <p>I can create a presentation to highlight the researched career.</p>	Career Readiness	<p>ODE Career Framework</p> <p><a href="https://education.ohio.gov/Topics/Career-Tech/Career-Connections/Career-Connections-Framework">https://education.ohio.gov/Topics/Career-Tech/Career-Connections/Career-Connections-Framework</a></p>
	Counselor visit discussing options for LHS	I can use presented information to help guide my career path.	Career Readiness	<p>ODE Career Framework</p> <p>West Shore Career Technical</p>
	Career Connections Learning Strategies	I can use the learning strategies to help	Career	ODE Career

		follow a career path in high school.	Readiness	Framework EducationPlanner.org Lakewoodcityschools.org - Westshore Career Technical
	CCSS.ELA-Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.	I can present my itinerary in a variety of ways.	Coast-to-Coast Travel Agent	Defined STEM
	CCSS.ELA-Literacy.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	I can research and plan a trip by researching specific destinations, dates and travel methods.	Coast-to-Coast Travel Agent	DefinedSTEM
	CCSS.ELA-Literacy.CCRA.SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.	I can use a variety of media to create and present my trip.	Coast-to-Coast Travel Agent	DefinedSTEM
	D2.Geo.2.6-8. Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions, and changes in their environmental characteristics.	I can use maps, satellite images, photographs and other multimedia tools to plan a coast-to-coast trip.	Coast-to-Coast Travel Agent	DefinedSTEM
	3.2.4. Calculate distance, scale, and area, to inform study of historic or current national and global environments.	I can calculate the total distance traveled and total cost of the trip.	Coast-to-Coast Travel Agent	DefinedSTEM

	<p>Mathematical Practices</p> <p>CCSS.Math.Practice.MP5 Use appropriate tools strategically.</p> <p>CCSS.Math.Practice.MP6 Attend to precision.</p>	<p>I can use appropriate mathematical tools to help me plan my trip.</p>	<p>Coast-to-Coast Travel Agent</p>	<p>DefinedSTEM</p>
	<p>College and Career Readiness Anchor Standards for Writing</p> <ul style="list-style-type: none"> <li>● Text Types and Purposes <ul style="list-style-type: none"> <li>○ (CCSS.ELA-Literacy.CCRA.W.1 ) Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</li> </ul> </li> <li>● Production and Distribution of Writing <ul style="list-style-type: none"> <li>○ (CCSS.ELA-Literacy.CCRA.W.4 ) Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</li> </ul> </li> </ul>	<p>I can create an innovative design and explain why my design is better than other designs.</p> <p>I can cater my design to fit the needs of a specific audience.</p>	<p>Sporting Goods Designer</p>	<p>Teacher Created</p>
	<p>CCSS.ELA-Literacy.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p>	<p>I can research current models on the market and use my research to develop a better design.</p>	<p>Sporting Goods Designer</p>	<p>Teacher Created</p>
	<p>CCSS.ELA-Literacy.SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.</p>	<p>I can present my product to the class using details and facts about my design.</p>	<p>Sporting Goods Designer</p>	<p>Teacher Created</p>
	<p>Science Inquiry and Application - During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory safety techniques, to construct their knowledge and understanding in all science content areas:</p>	<p>I can research current models of a specific type of sporting good on the market and make modification/improvements to the design.</p>	<p>Sporting Goods Designer</p>	<p>Teacher Created</p>

	<ul style="list-style-type: none"> <li>• (8.SI.5. ) Develop descriptions, models, explanations and predictions.</li> <li>• (8.SI.6. ) Think critically and logically to connect evidence and explanations.</li> <li>• (8.SI.7. ) Recognize and analyze alternative explanations and predications.</li> <li>• (8.SI.8. ) Communicate scientific procedures and explanations.</li> </ul>	I can explain why my design is better and support my claims.		
	CCSS.ELA-Literacy.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	I can research current types of pinball machines and apply my understanding to design my own.	Making a Cardboard Pinball Machine	Teacher Created
	CCSS.Math.Practice.MP2 Reason abstractly and quantitatively.	I can use my mathematical reasoning to help design my machine.	Making a Cardboard Pinball Machine	Teacher Created
	<p>ELA – writing: CCS - W for literacy H/SS, Sci, Tech: 2.abcdef, 5&amp;6(production and distribution, 7 &amp; 8 (research), 10 (range of writing)</p> <p>21st Century Skills: Critical thinking, Collaboration, Communication, Creativity</p>	I can apply research, critical thinking and reasoning to design and create a cardboard pinball machine.	Making a Cardboard Pinball Machine	Teacher Created
	Science – PS - Conservation of Mass and Energy Gr 6,7,8: kinetic, potential, transfer, law of conservation of energy, net force, types of potential energy (elastic, gravitational, magnetic)	I can identify energy and the transformation of one to another.	Making a Cardboard Pinball Machine	Teacher Created
	Science PS- Forces and Motion Forces have magnitude and direction. The motion of an object is always measured with respect to a reference point.	I can use my understanding of forces and motion to ensure the marble easily travels through my pinball machine.	Making Cardboard Pinball Machine	Teacher Created

		I can use my understanding of forces and motion to create a launcher and paddles.		
	<p>Science Inquiry and Application - During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory safety techniques, to construct their knowledge and understanding in all science content areas:</p> <ul style="list-style-type: none"> <li>• (8.SI.5. ) Develop descriptions, models, explanations and predictions.</li> <li>• (8.SI.6. ) Think critically and logically to connect evidence and explanations.</li> <li>• (8.SI.7. ) Recognize and analyze alternative explanations and predications.</li> <li>• (8.SI.8. ) Communicate scientific procedures and explanations.</li> </ul>	<p>I can research pinball machines and apply my findings to create a model of my own.</p> <p>If my model does not work, I can make modifications and improvements.</p>	Making a Cardboard Pinball Machine	Teacher Created
	CCSS.ELA-Literacy.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	I can research balloon powered cars and use my research to design my own.	Balloon Car	Teacher Created
	CCSS.Math.Practice.MP5 Use appropriate tools strategically.	I can accurately measure the distance my balloon car travels using appropriate tools.	Balloon Car	Teacher Created
	<p>Science- PS Forces and Motion</p> <p>Forces have magnitude and direction. The motion of an object is always measured with respect to a reference point. The direction of each arrow shows the direction of push or pull. When many forces act on an object, their combined effect is what influences the motion of that object.</p>	I can use my knowledge of forces and motion to draw the forces acting on my balloon powered car.	Balloon Car	Teacher Created
	Science Inquiry and Application - During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory	I can use my laboratory skills, my scientific knowledge and my critical thinking skills to create a balloon powered	Balloon Car	Teacher Created

	<p>safety techniques, to construct their knowledge and understanding in all science content areas:</p> <ul style="list-style-type: none"> <li>● (8.SI.5. ) Develop descriptions, models, explanations and predictions.</li> <li>● (8.SI.6. ) Think critically and logically to connect evidence and explanations.</li> <li>● (8.SI.7. ) Recognize and analyze alternative explanations and predications.</li> <li>● (8.SI.8. ) Communicate scientific procedures and explanations.</li> </ul>	car.		
	<p>Science LS- Species and Reproduction</p> <p>This topic focuses on continuation of the species. Changes in environmental conditions can affect how beneficial a trait will be for the survival and reproductive success of an organism or an entire species.</p>	I can use my understanding of species reproduction to help a specific species survive.	Environmental Citizenship Project	Teacher Created
	<p>Science LS- Species and Reproduction</p> <p>Throughout Earth’s history, extinction of a species has occurred when the environment changes and the individual organisms of that species do not have the traits necessary to survive and reproduce in the changed environment. Most species (approximately 99 percent) that have lived on Earth are now extinct</p>	I can use my understanding of extinction to develop an environmental citizenship project.	Environmental Citizenship Project	Teacher Created
	<p><b>Social Studies- Grade 8</b></p> <ul style="list-style-type: none"> <li>● PEOPLE, PLACES, AND ENVIRONMENTS <ul style="list-style-type: none"> <li>○ SOCIAL STUDIES PROGRAMS SHOULD INCLUDE EXPERIENCES THAT PROVIDE FOR THE STUDY OF PEOPLE, PLACES, AND ENVIRONMENTS. <ul style="list-style-type: none"> <li>■ KNOWLEDGE - Learners will understand:</li> </ul> </li> </ul> </li> </ul>	I can demonstrate my understanding of human impacts on the environment to design an environmental citizenship project.	Environmental Citizenship Project	Teacher Created

	<ul style="list-style-type: none"> <li>■ (3.1.7. ) Human modifications of the environment.</li> <li>■ PROCESSES - Learners will be able to: <ul style="list-style-type: none"> <li>■ (3.2.6. ) Evaluate the consequences of human actions in environmental terms.</li> </ul> </li> </ul>			
	<p>CCSS.ELA-Literacy.W.8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p>	<p>I can research a specific environmental cause or problem and use my understanding in the environmental citizenship project.</p>	<p>Environmental Citizenship Project</p>	<p>Teacher Created</p>