

# **Madison Public Schools**

## **STEAM Grade 5 Curriculum**

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## Course Overview

Description
The goal of STEAM is to integrate science, technology, engineering, art, and math. This cross-curricular unit is designed to build on what students have learned or will learn in their science curriculum, math, language arts, and technology. Students are given a series of tasks to complete throughout the unit and then culminates with a final project.
Goals
<p>This course aims to:</p> <ul style="list-style-type: none"><li>• Develop engineering and design principles</li><li>• Develop research skills and analyze information</li><li>• Develop critical thinking skills</li><li>• Make observations and collection data</li><li>• Develop the appropriate use of technology</li><li>• Present information to an audience</li><li>• Support the Fifth grade science, math, and language arts curriculum</li></ul>
Resources
<p><b>NJ Technology Standards</b> <a href="https://www.state.nj.us/education/cccs/2014/tech/8.pdf">https://www.state.nj.us/education/cccs/2014/tech/8.pdf</a> <b>NGSS</b> <a href="http://ngss.nsta.org/AccessStandardsByTopic.aspx">http://ngss.nsta.org/AccessStandardsByTopic.aspx</a> <b>Madison 5th grade Curriculum</b></p>
<p><b><u><a href="#">Modifications and Adaptations for Special Needs Learners</a></u></b> (Gifted and Talented Students, English Language Learners, Special Education Students, At-Risk Students)</p>

<b>Unit 1 Overview</b>
Unit Title: Forces, Motion and Simple Machines
Unit Summary: In this unit, students will develop an understanding of forces, motion and simple machines. The final project will include students designing and constructing a catapult that is capable of launching a tennis ball 20 meters.
Suggested Pacing: 18 lessons
<b>Learning Targets</b>
Unit Essential Questions: <ul style="list-style-type: none"> <li>• What is force?</li> <li>• What is motion?</li> <li>• What are Newton's Laws of Motion?</li> <li>• What are the six simple machines?</li> <li>• What is a complex machine?</li> </ul>
Unit Enduring Understandings: <ul style="list-style-type: none"> <li>• We understand the relationship between force and motion.</li> <li>• We understand Newton's Laws of Motion.</li> <li>• We understand simple and complex machines.</li> </ul>
<b>Evidence of Learning</b>
Unit Benchmark Assessment Information: There are a variety of ways students will demonstrate their learning: research, discussions, performance tasks, design challenges and reflections.

Objectives (Students will be able to...)	Essential Content/Skills	Suggested Assessments	Standards	Pacing
<p>Demonstrate an understanding of the engineering design process.</p>	<p>Explain and model the various steps of the engineering design process.</p> <p>Use simple quick build projects to demonstrate the engineering design process.</p> <p>Students will construct structures using the engineering design process. Problem based learning. (e.g. students will build an index card tower 20 cm tall capable of supporting a D battery)</p>	<p>Using Google Docs, have students write a short summary of their project, including photos.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	<p>Week 1-2</p>

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of force	Explain and model force within the classroom using a ball.	<p>Students will identify examples of force around them.</p> <p>Using Google Slides, have students create a simple presentation on force.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 3

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Newton's Laws of Motion	<p>Explain and model Newton's First Law of Motion</p> <p>Model the use of a 3D printer to create a simple object capable of being used for demonstration purposes</p>	<p>Students will add several examples of Newton's First Law to their presentation.</p> <p>This will include their 3D printer generated object.(e.g. 3D printer generated sphere that is used to explain Newton's Laws</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1.Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 4

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Newton's Laws of Motion	Explain and model Newton's Second Law of Motion.	Students will add several examples of Newton's Second Law to their presentation.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 5



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Newton's Laws of Motion	Explain and model Newton's Third Law of Motion.	Students will add several examples of Newton's Second Law to their presentation.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 6

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Introduction to simple machines-levers.	<p>Provide a basic overview of simple machines.</p> <p>Explain and model class I,II and III levels.</p> <p>Provide students with a variety of materials to construct a working model of the three types of levers.</p>	Using Google Slides, have students create a presentation on simple machines. Have students document their three types of levers, using photos/video of their operation.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 7

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Introduction to simple machines-Inclined plane and the Wedge	<p>Explain/model the use of an inclined plane and wedge.</p> <p>Explain/model the use of the 3D printer.</p>	<p>Students will use the 3D printer to create an object that can be used as both an inclined plane and a wedge.</p> <p>Students will include their inclined plane/wedge in their Google Slide presentation</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 8-9

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Introduction to simple machines-The Pulley	Explain and model a pulley. Students will code a pulley.	Students will add their coded pulley to their Google Slide.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 10

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Introduction to simple machines-The Screw	Students will use the 3D printer to create a working screw.	Students use photos and/or video to demonstrate the use of their working screw..	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 11-12

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Introduction to simple machines-The Wheel and Axle	<p>Explain and model a wheel and axle</p> <p>Provide students with a variety of materials to construct a working model of wheel and axle.</p>	Students use photos and/or video to demonstrate the use of their wheel and axle.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 13

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Introduction to compound machines-the Catapult	<p>Identify several compound machines in everyday use.(e.g.a bicycle)</p> <p>Students will work in groups to design and build their own catapult. Students will use the engineering design process to build a catapult that is capable of launching a tennis ball 20 meters.</p>	Students will document the entire project in a Google Slide.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1.Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 14-18

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
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<b>Unit 2 Overview</b>	
Unit Title: Global Solutions	
Unit Summary: In this unit, students will develop an understanding of the causes and possible solutions to several global environmental problems. The 18 week unit is comprised of three main projects focusing on oil spills, water pollution and deforestation. Students will design and construct an oil boom to remediate an oil spill, a water filtration system and a working solar oven.	
Suggested Pacing: 18 lessons	
<b>Learning Targets</b>	
Unit Essential Questions: <ul style="list-style-type: none"> <li>• What are the most serious environmental problems?</li> <li>• What are the impacts of these problems on the environment?</li> <li>• How do these problems affect local communities?</li> <li>• How can we remediate or lessen the impact of these problems? What is the role of technology?</li> </ul>	
Unit Enduring Understandings: <ul style="list-style-type: none"> <li>• We can identify global environmental problems.</li> <li>• We can apply appropriate technology to prevent or remediate these problems.</li> </ul>	
<b>Evidence of Learning</b>	
Unit Benchmark Assessment Information: There are a variety of ways students will demonstrate their learning: research, discussions, performance tasks, design challenges and reflections.	

Objectives (Students will be able to...)	Essential Content/Skills	Suggested Assessments	Standards	Pacing
<p>Demonstrate an understanding of Global Environmental Problems as identified by the United Nations.</p>	<p>Explain the United Nations Development goals.</p> <p>Demonstrate a connection between the UN Goals and major Global environmental problems.</p> <p><a href="https://www.un.org/sustainabledevelopment-goals/">https://www.un.org/sustainabledevelopment-goals/</a></p>	<p>Students will create an engineering company that will propose solutions to various environmental problems. Students will create a logo and a mission statement for their company.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	<p>Week 1-2</p>

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of oil spill damage.	Explain the environmental damage caused by oil spills.	<p>Students will research historic oil spills and their impact on both marine life and the local community.</p> <p>Using Google slides, have students begin a presentation on oil spills.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 3

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of oil spill remediation	<p>Explain possible ways that oil spills can be remediated.</p> <p>Model the use of a 3D printer to create a boom to be used to clean up an oil spill.</p>	<p>Students will research oil spill remediation.</p> <p>Students will add several examples of methods used to remediate oils spills to their presentation . They will include their 3D printer generated object boom and their prediction.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 4-5

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of oil spill remediation.	Model procedures for oil boom testing.	Students will test the effectiveness of their boom to remediate an oil spill in a test tank.	<p style="text-align: center;"><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p style="text-align: center;"><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p style="text-align: center;"><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p style="text-align: center;"><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 6-7

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of water pollution.	Explain the causes of water pollution.	Students will research water pollution and its effect on potable water. Using Google slides, have students begin a presentation on water pollution.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 8

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of water filtration systems.	Explain how water filters work.	Students will research how water filtration systems work and include a model in their presentation.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 9

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Design,construct and test a water filtration system	Model the basic construction of a charcoal based water filter.	<p>Students will design, construct and test a working water filtration system out of materials provided.</p> <p>Students will use photos and/or video to demonstrate the use of their working filtration system.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1.Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 10-11



			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Demonstrate an understanding of the causes of deforestation.	Demonstrate a connection between charcoal and deforestation.	<p>Students will research the problem of deforestation and its impact on both natural environment and the local community.</p> <p>Students will use Google slides to begin a presentation on deforestation.</p>	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 12-13

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Design, construct and test a solar oven	Explain and model a solar oven. Provide students with a variety of materials to construct a working solar oven.	Students will work in groups to design and build their own solar oven. Students will document the entire project in a Google Slide.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 14-15

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Design, construct and test a solar oven	Test the solar ovens.	Students will test the solar ovens. Results will be documented in their Google Slide Presentation.	<p><b>ELA/Literacy</b></p> <p>RI.5.1 - Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1)</p> <p>RI.5.7 - Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1), (5-PS3-1)</p> <p>RI.5.9 - Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1)</p> <p>SL.5.5 - Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1), (5-PS3-1)</p> <p>W.5.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><b>Mathematics</b></p> <p>5.MD.A.1 - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p> <p>MP.2 - Reason abstractly and quantitatively. (5-LS1-1), (5-LS2-1)</p> <p>MP.4 - Model with mathematics. (5-LS1-1), (5-LS2-1)</p> <p>MP.5 - Use appropriate tools strategically. (5-LS1-1)</p> <p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p>	Week 16-17

			8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data	
Final presentation	Present Google Slides	Students will present their final Google Slide presentation summarizing Unit Two..	<p><b>Career Ready Practices</b></p> <p>CRP1. Act as a responsible and contributing citizen and employee.</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP5. Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6. Demonstrate creativity and innovation.</p> <p>CRP7. Employ valid and reliable research strategies.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP11. Use technology to enhance productivity.</p> <p>CRP12. Work productively in teams while using cultural global competence.</p> <p><b>Understand and use technology systems.</b></p> <p>8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. Select and use applications effectively and productively.</p> <p>8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.</p> <p>8.1.5.A.3 Use a graphic organizer to organize information about problem or issue.</p> <p>8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.</p> <p>8.1.5.A.5 Create and use a database to answer basic questions.</p> <p>8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data</p>	Week 18