



Date/Times	Activity & Description	Materials Needed for Activity	Standards Connection
<p><b>January 26</b></p> <ul style="list-style-type: none"> <li>• 9:15 – 10:15 am</li> <li>• 2:00 – 3:00 pm</li> </ul>	<p><b>Ice Ice Baby:</b></p> <p>Students will make observations as ice changes states of matter. Students will manipulate the changes in states of matter with varying substances to determine which causes ice to change states faster.</p>	<ul style="list-style-type: none"> <li>• 4 ice cubes</li> <li>• 3 tablespoons of each:               <ul style="list-style-type: none"> <li>• salt</li> <li>• sugar</li> <li>• one of the following: baking soda, rock salt, sand or other substance</li> </ul> </li> <li>• 4 bowls/plates for each cube of ice</li> <li>• 4 plastic spoons</li> <li>• pencil and paper</li> </ul>	<p><b>DCI:</b></p> <p>PS1.A Structure and Properties of Matter PS1.B Chemical Reactions</p> <p><b>SEP:</b></p> <p>Asking Questions and Defining Problems Planning and Carry Out Investigations Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information</p> <p><b>CCC:</b> Energy and Matter</p>
<p><b>February 2</b></p> <ul style="list-style-type: none"> <li>• 9:15 – 10:15 am</li> <li>• 2:00 – 3:00 pm</li> </ul>	<p><b>Lunar Lander:</b></p> <p>Designing a device to land on the moon is a tough challenge, but can your students also account for the thrust a design needs to have a safe lunar landing?</p>	<ul style="list-style-type: none"> <li>• balloons</li> <li>• small binder clip</li> <li>• Lander Materials:               <ul style="list-style-type: none"> <li>• paper cup</li> <li>• straws</li> <li>• foam</li> <li>• tape</li> <li>• pipe cleaners</li> <li>• construction paper</li> <li>• cardboard</li> <li>• mini marshmallows</li> </ul> </li> </ul>	<p><b>DCI:</b></p> <p>PS2.A Forces and Motion PS2.B Types and Interactions</p> <p><b>SEP:</b></p> <p>Asking questions and Defining Problems Developing and Using Models Planning and Carrying Out Investigations Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information</p> <p><b>CCC:</b> System and System Models</p>
<p><b>February 9</b></p> <ul style="list-style-type: none"> <li>• 9:15 – 10:15 am</li> <li>• 2:00 – 3:00 pm</li> </ul>	<p><b>Winter STEM X Games:</b></p> <p>The Winter X Games have teamed up with our STEM students to design the fastest and farthest traveling ski jumpers.</p>	<ul style="list-style-type: none"> <li>• 2 pipe cleaners</li> <li>• tape</li> <li>• construction paper</li> <li>• scissors</li> <li>• washers/nuts and/or pennies</li> </ul>	<p><b>DCI:</b></p> <p>PS3.A Definitions of Energy PS3.B Conservation of Energy and Energy Transfer</p> <p><b>SEP:</b></p> <p>Asking questions and Defining Problems Developing and Using Models Planning and Carrying Out Investigations Analyzing and Interpreting Data</p>



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			Obtaining, Evaluating and Communicating Information Constructing explanations and designing solutions  <b>CCC:</b> Energy and Matter
<b>February 16</b> • 9:15 – 10:15 am • 2:00 – 3:00 pm	<b>Magnetic Mazes:</b>  What better way to learn about powerful magnetic forces than by using them to compete in a Magnetic Maze Showdown!	<ul style="list-style-type: none"> <li>• paper plates or cardboard to design maze</li> <li>• Maze Obstacles:               <ul style="list-style-type: none"> <li>• pipe cleaners</li> <li>• cardboard</li> <li>• Gummy Worms/Twizzlers</li> <li>• straws</li> </ul> </li> <li>• tape</li> <li>• Magnetic Items:               <ul style="list-style-type: none"> <li>• paper clips or magnetic balls</li> </ul> </li> <li>• variety of magnets (different strengths)</li> <li>• paper/pencil</li> </ul>	<b>DCI:</b> PS2.A Forces and Motion PS2.B Types of Interactions  <b>SEP:</b> Asking questions and Defining Problems Planning and Carrying Out Investigations Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information  <b>CCC:</b> Energy and Matter
<b>February 23</b> • 9:15 – 10:15 am • 2:00 – 3:00 pm	<b>Wiggle Bot:</b>  Combine your magnificent engineering skills with your inner artist and watch as the magic unfolds! Students create a bot that will design art!	<ul style="list-style-type: none"> <li>• 3 markers</li> <li>• plastic cup</li> <li>• tape (electrical preferred)</li> <li>• large sheets of white posters</li> <li>• clothespin</li> <li>• craft stick</li> <li>• masking tape</li> <li>• AA battery holder</li> <li>• 2 AA batteries</li> <li>• 1.5-3 V DC Motor</li> </ul>	<b>DCI:</b> PS3.A Definitions of Energy PS3.B Conservation of Energy and Energy Transfer  <b>SEP:</b> Asking questions and Defining Problems Developing and Using Models Analyzing and Interpreting Data  <b>CCC:</b> Energy and Matter
<b>March 2</b> • 9:15 – 10:15 am • 2:00 – 3:00 pm	<b>Rock n' Roll:</b>  Let's get rockin' with hands-on learning about types of rocks and	<ul style="list-style-type: none"> <li>• broken crayons</li> <li>• scissors</li> <li>• aluminum foil</li> <li>• cup of hot water</li> </ul>	<b>DCI:</b> ESS2.A Earth Materials and Systems ESS2.C The Roles of Water in Earth's Surface Processes



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	weathering and erosion!	<ul style="list-style-type: none"> <li>• plastic knife</li> <li>• timer</li> <li>• food coloring</li> <li>• eye dropper</li> <li>• sugar cubes</li> <li>• plastic container</li> </ul>	<p><b>SEP:</b> Asking questions and Defining Problems Developing and Using Models Planning and Carrying Out Investigations Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information Constructing explanations and designing solutions</p> <p><b>CCC:</b> Patterns</p>
<p><b>March 9</b></p> <ul style="list-style-type: none"> <li>• 9:15 – 10:15 am</li> <li>• 2:00 – 3:00 pm</li> </ul>	<p><b>Minute to Win It STEM Challenges:</b></p> <p>Students will learn about momentum, forces, gravitational pull and other amazing STEM concepts as they compete in various Minute to Win It STEM challenges.</p>	<ul style="list-style-type: none"> <li>• water bottles (students will fill with water)</li> <li>• plastic cups (10 per group)</li> <li>• index cards</li> <li>• balloons</li> <li>• 1 chopstick (per student)</li> <li>• keys (or something similar)</li> <li>• string</li> <li>• paperclips</li> <li>• stopwatch/timing device</li> </ul>	<p><b>DCI:</b> PS2.A Forces and Motion PS3.A Definitions of Energy</p> <p><b>SEP:</b> Asking questions and Defining Problems Obtaining, Evaluating and Communicating Information Constructing explanations and designing solutions</p> <p><b>CCC:</b> Energy and Matter</p>
<p><b>March 16</b></p> <ul style="list-style-type: none"> <li>• 9:15 – 10:15 am</li> <li>• 2:00 – 3:00 pm</li> </ul>	<p><b>Leprechaun Traps:</b></p> <p>Feeling lucky enough to catch a leprechaun? Join us as we put engineering to the ultimate test when we design traps to catch the sneaky little leprechauns.</p>	<ul style="list-style-type: none"> <li>• Cardboard</li> <li>• boxes (shoe boxes, cereal boxes)</li> <li>• tape</li> <li>• scissors</li> <li>• craft sticks</li> <li>• cups/bowls/paper plates</li> <li>• pipe cleaners</li> <li>• string</li> </ul>	<p><b>DCI:</b> PS2.A Forces and Motion PS2.B Types of Interactions</p> <p><b>SEP:</b> Asking questions and Defining Problems Developing and Using Models Planning and Carrying Out Investigations Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information Constructing explanations and designing solutions</p> <p><b>CCC:</b> Scale, Proportion and Quantity</p>



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<p><b>March 23</b>            • 9:15 – 10:15 am            • 2:00 – 3:00 pm</p>	<p><b>Cleaning Earth’s Water:</b>            Learn about the importance of the Earth’s most precious resource - water! Students will see first-hand how little fresh water there is on Earth and how to create their own filtration system to help clean it.</p>	<ul style="list-style-type: none"> <li>• plastic cups</li> <li>• Styrofoam cups</li> <li>• coffee filters and/or other filtration items (pieces of cloth, cotton, paper towels, filter paper)</li> <li>• rubber bands</li> <li>• prepared dirty water</li> </ul>	<p><b>DCI:</b>            ESS3.A Natural Resources            ESS3.C Human Impacts on Earth Systems</p> <p><b>SEP:</b>            Asking questions and Defining Problems            Developing and Using Models            Planning and Carrying Out Investigations            Analyzing and Interpreting Data            Obtaining, Evaluating and Communicating Information            Constructing explanations and designing solutions</p> <p><b>CCC:</b> Systems and System Models</p>
<p><b>April 6</b>            • 9:15 – 10:15 am            • 2:00 – 3:00 pm</p>	<p><b>Wind Turbines:</b>            Students will learn about alternative energy sources as they design and build working wind turbines. Students will test various structures within their turbines to create the most effective design.</p>	<ul style="list-style-type: none"> <li>• water or Gatorade bottles (partially filled)</li> <li>• straws</li> <li>• string</li> <li>• plates</li> <li>• nuts/bolts</li> <li>• dowel rods</li> <li>• plastic spoons</li> <li>• foam pieces</li> <li>• cups</li> <li>• tape</li> <li>• index cards</li> <li>• toothpicks</li> <li>• cut pool noodles</li> <li>• any other materials to build</li> </ul>	<p><b>DCI:</b>            PS3.B Conservation of Energy and Energy Transfer            ESS3.A Natural Resources</p> <p><b>SEP:</b>            Asking questions and Defining Problems            Developing and Using Models            Planning and Carrying Out Investigations            Analyzing and Interpreting Data            Obtaining, Evaluating and Communicating Information            Constructing explanations and designing solutions</p> <p><b>CCC:</b> Cause and Effect</p>
<p><b>April 20</b>            • 9:15 – 10:15 am            • 2:00 – 3:00 pm</p>	<p><b>Beaver Dams:</b>            Students will discover how animals change the land over time and the</p>	<ul style="list-style-type: none"> <li>• water</li> <li>• mini paint tray (or other container)</li> <li>• sticks</li> <li>• rocks</li> </ul>	<p><b>DCI:</b>            LS2.C Ecosystem dynamics, functioning and resilience            LS2.A Interdependence relationships in ecosystems</p>



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	<p>impact it causes as they design, build and test beaver dams.</p>	<ul style="list-style-type: none"> <li>• air dry clay</li> <li>• paper/pencil</li> </ul>	<p><b>SEP:</b> Asking questions and Defining Problems Developing and Using Models Planning and Carrying Out Investigations Analyzing and Interpreting Data Obtaining, Evaluating and Communicating Information</p> <p><b>CCC:</b> Cause and Effect</p>
<p><b>April 27</b> • 9:15 – 10:15 am • 2:00 – 3:00 pm</p>	<p><b>Space Shelter:</b></p> <p>While space travel is growing, humans must find a way to live safely on other planets without risking harmful exposure to UV rays. Students will explore designs to keep space travelers safe from direct UV rays.</p>	<ul style="list-style-type: none"> <li>• 1 Pipe Cleaner</li> <li>• UV Beads (to put on pipe cleaner to make space person)</li> <li>• UV Light Source (UV flashlight or direct sunlight)</li> <li>• Various Craft Materials:               <ul style="list-style-type: none"> <li>• Cardboard</li> <li>• Aluminum Foil</li> <li>• Craft Sticks</li> <li>• Index Cards</li> <li>• Newspaper</li> <li>• Construction Paper</li> </ul> </li> <li>• Tape</li> <li>• Pencil/Paper</li> </ul>	<p><b>DCI:</b> PS4.A Wave Properties PS4.B Electromagnetic Radiation</p> <p><b>SEP:</b> Asking questions and Defining Problems Planning and Carrying Out Investigations Constructing explanations and designing solutions</p> <p><b>CCC:</b> Patterns</p>