



Date/Times	Activity & Description	Materials Needed for Activity	Standards Connection
January 28 2:00 - 3:00 pm EST	Constellation Creations Stars are so much more than bright dots in the sky. Together, we will learn how patterns in the stars were used long ago and how we still use them today. Students will learn which constellations are visible all year and at different times throughout the year. Then we'll let our creativity combust as we dive into the art of Constellation Creations. We'll make and learn how to use a Constellation Wheel, and students will choose their favorite constellation to design a hanging decoration.	Per student: <ul style="list-style-type: none">- scissors- cardstock- tape- small black plastic or paper plate- star stickers- permanent marker- hole punch- string- My Constellation Story (printout)- Constellation Star Wheel (printout)- Constellation Dotted Sheet (printout)	DCI: ESS1.B Earth and the Solar System SEP: Developing and Using Models CCC: Patterns
February 11 2:00 - 3:00 pm EST	Hidden Message Valentine's is a time for secret sweet science messages! Students create secret colored messages that can only be revealed using a very special magnifying glass. As students reveal their secret messages, we will learn how different colored inks absorb and reflect different wavelengths (colors) of light.	Per student: <ul style="list-style-type: none">- white paper- blue colored pencil- red marker- cardboard- glue- scissors- various other colors of colored pencils and markers- various colored cellophane sheets (see example)- Lens Template (to be provided)	DCI: PS4.B Electromagnetic Radiation SEP: Developing and Using Models CCC: Cause and Effect
February 25 2:00 - 3:00 pm EST	Powered-up Play-Doh What happens when Play-Doh meets an electrical current? It's time to power up	<ul style="list-style-type: none">- Play-Doh (name brand) Ingredients to Make Insulated Doh: <ul style="list-style-type: none">- 1 ½ cups flour- ½ cup sugar	DCI: <ul style="list-style-type: none">• PS3.A Definitions of Energy• PS3.B Conservation of Energy and Energy Transfer



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	playtime as students discover they can build real working circuits using Play-Doh. After seeing this electric action, students will make homemade play-doh to test in place of the brand-name Play-Doh. Through scientific play, students will investigate circuits, conductivity, and insulators. They will conduct additional tests to figure out how to turn an insulator into a conductor.	<ul style="list-style-type: none">- 3 tablespoons vegetable oil- $\frac{1}{2}$ cup distilled water- measuring cups ($\frac{1}{2}$ cup and 1 cup)- measuring spoon (tablespoon)- small bowl/cup (can be paper/plastic)- large mixing bowl- large mixing spoon- eye dropper- wax paper or cookie sheet- gloves (optional)- 9-volt battery- LED lights- student notebook- container of salt- plain white paper- markers/crayons- Play-Doh Circuit Template (to be provided)	SEP: Planning and Carrying Out Investigations CCC: Energy and Matter
March 11 2:00 - 3:00 pm EST	Fidget Spinning Science Build it. Spin it. Test it. Fidget Spinning Science puts a hands-on twist on physics! Students will explore the science behind fidget spinners by designing, building, and testing two different spinner models using everyday materials. As they experiment with balanced and unbalanced forces, weight, and motion, students will investigate how design elements affect spin time. Which design will spin the longest? There's only one way to find out	<ul style="list-style-type: none">- 3 mini craft sticks- glue dots- 3 screw nuts or washers- 1 ball bearing- 4mm jump rings (see example)- 3 skate ball bearings (see example)- toothpick/dowel- Washi Tape, markers, and/or pens to decorate- thick cardboard (for 2 fidget spinners)	DCI: <ul style="list-style-type: none">• PS2.A Forces and Motion• ETS1.B Developing Possible Solutions SEP: Planning and Carrying Out Investigations CCC: <ul style="list-style-type: none">• Cause and Effect• Influence of Engineering, Technology, and Science on Society and the Natural World



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	– test it like a real engineer!	<ul style="list-style-type: none">- scissors- hot glue gun- $\frac{1}{8}$ inch hole punch or something sharp (like a needle) to poke small holes- 3 pennies- Fidget Template 1 (to be provided)- Fidget Template 2 (to be provided)	
April 15 2:00 - 3:00 pm EST	Build a Better Bandage Student teams will work together to test and compare materials best suited for each part of a bandage. This includes testing for stickiness and water absorption. They will use their data to create two new types of bandages by combining the best materials. Students will learn about a possible new technology that could be added to bandages to build a <i>better</i> bandage for trauma situations. Then they will be challenged to use their own two designs to test this new technology and compare the results to the two bandages they originally selected without the technology.	Per group: <ul style="list-style-type: none">- Three store-bought Band-Aids (same brand and size).- 3 different kinds of tape (e.g., masking, painters, medical, clear tape, electrical, packaging)- 3 different types of padding (e.g., cotton ball, piece of cloth, tissue, paper towel, gauze, felt)- 2 sheets of wax paper or aluminum foil (one to use as a testing area and one to model skin)- scissors- eyedropper- water- paper towels- felt sheet- bag of water-absorbing crystals (see example)- Student Data Sheet (to be provided)	DCI: <ul style="list-style-type: none">• PS1.A Structure and Properties of Matter• ETS1.A Defining and Delimiting Engineering Problems• ETS1.C Optimizing the Design Solution SEP: <ul style="list-style-type: none">• Developing and Using Models• Analyzing and Interpreting Data• Asking Questions and Defining Problems CCC: <ul style="list-style-type: none">• Structure and Function• Systems and System Models• Influence of Engineering, Technology, and Science on Society and the Natural World
April 29	Flash Flood Frenzy	<ul style="list-style-type: none">- bag of water-absorbing crystals (see)	DCI:



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2:00 - 3:00 pm EST	<p>Students come together to create solutions to help the Carter family with a huge flooding issue. As much as they love their house next to the beautiful river, last year, flash flooding caused their home to flood twice! It caused major damage to carpets, floors, and walls. Although everything has been repaired, the Carter family needs help to find a solution to instantly stop flood waters from ruining their house again. Students are challenged to design a device, using what they have learned about water-absorbing crystals, to stop flood waters from entering the Carter Family Home.</p>	<p><u>example</u>)</p> <ul style="list-style-type: none">- small plastic house (either premade or built with Legos/building blocks)- water source- masking tape- scissors- eye dropper- paint tray- pipe cleaners- student notebook- variety of construction materials (e.g., cardboard, plastic wrap, foil, plastic bottles, sponges, craft sticks, etc.)	<ul style="list-style-type: none">• ESS3.B Natural Hazards• ETS1.B Developing Possible Solutions <p>SEP: Engaging in Argument from Evidence</p> <p>CCC:</p> <ul style="list-style-type: none">• Cause and Effect• Influence of Engineering, Technology, and Science on Society and the Natural World• Science is a Human Endeavor• Constructing Explanations and Designing Solutions