



Switched-On
SCHOOLHOUSE

2015 Science Supply List

Earth Science

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UNIT 1: DYNAMIC STRUCTURE OF EARTH

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Research a Career	In this project, you will research a career field in science, and write a report describing a scientific field.	No	<ul style="list-style-type: none"> research resources
Project: Earth Comparisons	For this project, you'll make a chart of some of the basic characteristics of each planet so that you can compare and contrast these characteristics to those of Earth.	No	<ul style="list-style-type: none"> research resources
Project: Building a Model of the Earth	Build a planet similar in structure to Earth.	Yes	N/A
Project: Mantle Convection	In this project, you'll demonstrate your understanding of mantle convection by observing a process of convection and relating it to plate tectonics.	Yes	N/A
Project: Plate Boundaries	Review the three types of boundaries by selecting the type of crust—oceanic or continental—and the type of boundary in the simulation below. Then, click "Simulate" to see how these plates react.	No	N/A
Project: Sphere Interaction Lab	In this project you will Identify a variety of sphere interactions of Earth.	No	N/A
Project: Flow of Energy	In this project, you will Investigate how changes in an ecosystem affect a food web.	No	<ul style="list-style-type: none"> Computer-based, graphics program or → posterboard colored pencils or markers
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 2: FORCES AND FEATURES OF EARTH

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Earthquake Features Lab	Identify geological features involved with earthquake activity. Relate earthquake features to plate tectonics.	No	N/A
Project: Volcanic Features Lab	Identify and distinguish various geological features involved with volcanic activity.	No	N/A
Project: Mapping	Identify features of areas using geologic and topographic maps.	No	N/A
*Project: Create a Topographic Map	In this project, you will create a topographic map of an area.	No	<ul style="list-style-type: none"> • pencil • paper • crayons
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 3: FEATURES OF EARTH'S CRUST

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Crystal Systems	In this project, you will create three-dimensional models of crystals in each crystal system.	No	<ul style="list-style-type: none"> • paper • pencil • scissors • glue or tape
Project: Nuclear Energy	In this project, you will research nuclear energy.	No	<ul style="list-style-type: none"> • research resources
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 4: SHAPING EARTH'S CRUST

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Soil Particles	In this experiment, you will observe how particle size affects the soil profile.	No	<ul style="list-style-type: none"> • 1 1/2 cups potting soil • 1/2 cup sand • 2 wide-mouthed juice bottles with lids <ul style="list-style-type: none"> • Masking tape • Pen • Spoon • Water
Project: Ice Erosion	In this experiment, you will investigate how glaciers change Earth's surface.	No	<ul style="list-style-type: none"> • 10 lbs. sand • Square of window screen or kitchen strainer • 2 plastic trays, about 8 x 24 inches <ul style="list-style-type: none"> • Water • Freezer • Ruler • Bucket • Measuring cup
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 6: EARTH'S WATER

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Water Purification	In this experiment, you will purify water using a solar still.	No	<ul style="list-style-type: none"> • 1 cup of dirt • 4 cups of water • Small glass • Large glass bowl <ul style="list-style-type: none"> • Clear plastic wrap • Small, round rock • Sunshine
Project: Water Conservation	In this project, you will research ways to conserve water.	No	<ul style="list-style-type: none"> • posterboard <ul style="list-style-type: none"> • colored pencils or markers
Experiment: Porosity and Permeability	In this experiment, you will measure porosity and permeability.	No	<ul style="list-style-type: none"> • Water • Graduated cylinder • 6 clear, plastic cups • Permanent marker • Metric ruler • Large, medium, and small pebbles (about 1 cup each) <ul style="list-style-type: none"> • Gravel, sand, and dirt (about 1 cup each) • Funnel • 3 coffee filters • Ring stand • Stopwatch or watch with a second hand
Experiment: Fresh Water vs. Saltwater	In this experiment, you will compare freshwater and saltwater.	No	<ul style="list-style-type: none"> • 4 tablespoons salt • Water • 2 clear glasses • Measuring cup • Tablespoon • 2 eggs • 2 plastic cups • Spoon • Marker <ul style="list-style-type: none"> • Freezer • Stove • Small pot • Stopwatch or watch with a second hand • 2 pie plates or shallow pans about the same size • Paper
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 7: EARTH'S ATMOSPHERE

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Layers of the Atmosphere	In this project, you will distinguish the layers of the atmosphere, and create a model of the atmospheric layers.	No	<ul style="list-style-type: none"> • crayons, markers, or colored pencils • posterboard
Project: Solar Energy	In this project, you will illustrate the Sun's relationship with Earth.	No	<ul style="list-style-type: none"> • posterboard • crayons, markers or colored pencils
*Alternate Project: Temperature	In this project, you will Predict a material's albedo and heat absorption capability.	No	<ul style="list-style-type: none"> • sheet of black paper • sheet of white paper • window with sunlight shining through
Project: Air Circulation	This project will test your knowledge of air circulation patterns between different temperature and pressure zones.	No	N/A
*Alternate Project: Barometers	For this project, you'll build your own barometer and discover the air pressure around you. You'll also learn about the weather conditions associated with pressure zones.	No	<ul style="list-style-type: none"> • Coffee can or glass jar • Large balloon • Rubber band (big enough to fit around the top of the coffee can or jar) • Toothpick • Glue • Straw • Index card
Project: Greenhouse Effect	In this investigation, you will create your own "greenhouse" to demonstrate the greenhouse effect.	No	<ul style="list-style-type: none"> • 2 shoe boxes or any other boxes that are similar in size • Sheet of clear plastic (plastic wrap) or a pane of glass • 2 thermometers for measuring air temperatures • 2 shoe boxes or any other boxes that are similar in size • Sheet of clear plastic (plastic wrap) or a pane of glass • 2 thermometers for measuring air temperatures
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 8: EARTH'S WEATHER AND CLIMATE

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Weather or Climate?	Distinguish between weather and climate conditions.	No	N/A
Project: Clouds and Weather	Identify the different types of clouds and predict the weather for your viewers, based strictly on cloud formation!	No	N/A
*Project: Clouds and Rain	For this project, you will use these key ingredients to create your own cloud.	No	<ul style="list-style-type: none"> • 2-liter plastic soda bottle • Matches (adult supervision required) • Hot tap water • Black paper
*Project: Control the Weather	This project will allow you to create and control the weather.	No	<ul style="list-style-type: none"> • internet access
Project: Research Your Climate	In this lesson, you'll learn more about your area's climate by conducting research on it.	No	<ul style="list-style-type: none"> • Posterboard • Markers or crayons • Paper • Pen or pencil
Project: Predict the Weather	In this project, you'll be able to build some tools, record weather conditions, and make your own prediction about the weather in your area.		<ul style="list-style-type: none"> • pen • paper • coffee can or glass jar • large balloon • rubber band (big enough to fit around the top of the coffee can or jar) • toothpick • glue • straw • index card • 2 thermometers • tape • wet piece of cotton, gauze, or cloth • rubber band • piece of cardboard • compass • beaufort scale
*Special Project	Special Project assignments are used by teachers to create their own projects if needed.	No	N/A

*indicates alternate project/experiments

UNIT 9: ASTRONOMY

Assignment Title	Project Summary	Video Demo	Materials Needed
Project: Scale of the Solar System	This exercise will give you a better idea of the relative sizes of the planets.	No	N/A
Project: Newton's Law	In this experiment, you will examine Newton's laws of gravity and motion in an experiment.	No	<ul style="list-style-type: none"> • water • bucket with handle
Project: Identifying Galaxies	For this project, you will examine photographs of ten galaxies. For each galaxy, you will place it in a category and explain the basis for your categorization.	No	<ul style="list-style-type: none"> • internet access
*Special Project	Special Project assignments are used by teachers to create their own projects if needed	No	N/A

*indicates alternate project/experiments