ACTIVITY CALENDAR

EARTH AS INSPIRATION

EARTH SCIENCE WEEK 2018

2018-19 School Year Calendar | www.earthsciweek.org

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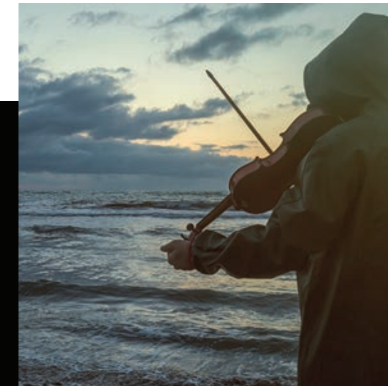
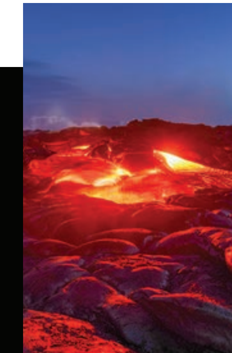
www.americangeosciences.org

EARTH SCIENCE WEEK

AGI american geosciences institute

connecting earth, science, and people





Inspiring Understanding

Our amazing planet naturally kindles in us a sense of awe. That sense is reinforced and deepened with an understanding of the geosciences. And we explore and convey that special sense—let's call it informed wonder—in painting, music, poetry, dance, and other forms of artistic expression.

That's why Earth Science Week 2018 focuses on the theme of "Earth as Inspiration," emphasizing the arts as a unique, powerful opportunity for geoscience education and understanding. The celebration's learning resources and activities are engaging young people and others in exploring this theme.

How can you explore the relationship between creative inspiration and Earth science? Start with a visit to the Earth Science Week website (www.earthsciweek.org). Check out new links to educational resources and information. Engage young people and others in discovering how art and geoscience similarly involve critical thinking, problem solving, and innovation.

And keep learning about Earth science throughout the school year. Use this calendar, which features education resources, important geoscience dates, and exciting academic activities. Connect with geoscience learning all year long!

Geoff Camphire

Geoff Camphire
Outreach Programs Manager
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AGI american geosciences institute
connecting earth, science, and people

Linking to Earth Science Week

This year, you're invited to join the tens of millions of participants in all 50 states and nations worldwide who are celebrating Earth Science Week. Now in its 21st year, this exciting event has grown steadily in momentum and participation since the American Geosciences Institute held the first Earth Science Week in 1998.

Every year, people in schools, workplaces, civic centers, and elsewhere celebrate Earth Science Week to help build public understanding and appreciation of the Earth sciences, promote recognition of the value of Earth science research, and encourage stewardship of the planet. Earth Science Week serves the geoscience community by:

- giving students new opportunities to discover the Earth sciences,
- highlighting the contributions made by the geosciences to society,
- publicizing the message that Earth science is all around us,
- encouraging responsible stewardship of the planet through an understanding of Earth processes,
- providing a forum where geoscientists can share their knowledge and enthusiasm about the Earth and how it works, and
- making learning about Earth science fun!

Whether you are a faculty member, student, parent, geoscientist, or ordinary citizen, you can play a leading role in Earth Science Week. On the event's website at www.earthsciweek.org, you'll find ideas and tips for planning activities at your school or workplace, along with contact information for geoscience resources in your area where you can work with local geoscientists to plan activities.

In addition, this calendar features a variety of exciting activities that you can conduct—in the schoolyard, at home, or elsewhere in the community—to explore the theme "Earth as Inspiration." This year's theme encourages people everywhere to learn about the dynamic relationship between the geosciences and the arts.

Let us know how you are planning to celebrate! Send us an email at info@earthsciweek.org. Celebrate Earth Science Week:

OCTOBER 14-20, 2018!

WWW.EARTHSCIWEEK.ORG

How can you get involved? Explore the Earth Science Week website at www.earthsciweek.org. You'll find a host of tools designed to make your event experience easy, fun, and rewarding!

On the website, you'll see a list of tips to help you share your Earth science knowledge with young people, lead an excursion, or attend an event in your area: A planning checklist, tips for fundraising, recommendations for working with the news media, ideas for events, educational activities, ways to get official recognition, downloadable logos and images, kit ordering information, a map of potential partners and activities near you, and much more.

To stay up-to-date on the latest developments and upcoming activities, subscribe to the *Earth Science Week Update* electronic newsletter at www.earthsciweek.org. Check it out!

AUGUST 2018

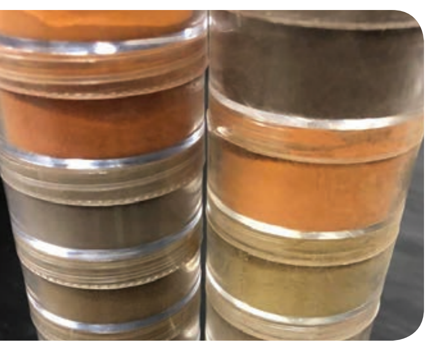
LEARNING ACTIVITY:

Painting With Soil

Grade Levels: 6-10

Materials

- Dry soil
- Hammer or mallet
- Mortar and pestle
- Paper cups (4 oz.)
- Knee-high panty hose
- Pencils
- Ink pens
- Paint brushes
- Artist acrylic or Elmer's® glue
- Sponges and rags
- Water color paper
- Masking tape
- Microscope or magnifying glass



Soil Science Society of America

Source: Soil Science Society of America, Adapted with permission.

Soils are one of our most important natural resources—just think of where all the food you eat comes from. They also are important for the beauty the many soil colors add to our landscapes.

Most of us overlook this natural beauty because we see it every day. Often these colors blend with vegetation, sky, water, etc. Soil colors serve as pigments in bricks, pottery, and artwork. The color and texture of soil painting is fascinating and a creative opportunity for all ages of students.

In this activity, the objective is to have fun and to gain a deeper appreciation of soils—one of our most important natural resources. The estimated time is about 1 or 2 hours.

Procedure

Prepare Your Soils

1. Gather several samples of soils of different colors and textures. If you cannot find these readily available in your area, you may search online for suppliers.
2. Air dry or oven dry on low heat.
3. Place some of the crushed soil into a mortar. Use a pestle to crush the soil into a fine powder. Repeat to crush all of the different colored soils.
4. (Extension: For each sample, keep a small amount—about 1 tablespoon—of uncrushed soil for students to examine under a microscope or magnifying glass.)
5. Place some of the powdered soil in a paper cup. Wrap a knee-high panty hose over the top. Turn cup upside down over a piece of paper and gently shake out finely powdered soil.
6. Place the different soils in paper cups—notice the colors and textures.

Create Your Artwork

1. Get inspired to create soils art by looking at soil art from around the world. Search online for examples.
2. Examine the colors and textures of the soils that your teacher provides to you. How could you use these characteristics to create your art?
3. Use a pencil to lightly sketch an outline of your artwork on water color paper. When you are satisfied with your composition trace your pencil lines with ink.
4. Pour a small amount of artist acrylic or glue into small paper cups. Add a small amount of finely powdered soil. You may also want to add a few drops of water to the soil mix. Experiment with depth of color and mixing the different soils.
5. Use different sizes and kinds of paint brushes, sponges, and rags. Experiment and have fun.
6. When your artwork is dry, you may want to apply another layer of soil paint. You may want to use a black ink pen to make finishing touches on your artwork.

www.soils4teachers.org **www.soils4kids.org**

NGSS Connections

- Science and engineering practices—Asking questions and solving problems
- Crosscutting Concepts—Patterns
- Disciplinary Core Ideas—Earth's systems: Earth materials and systems

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
5 **Friendship Day**	6	7	8	9	10	11
12	13	14	15	16	17 **Did You Know?** Hurricane Camille (Category 5) Strikes Mississippi, Louisiana, and Virginia, 1969	18
19	20 **Did You Know?** Florissant Fossil Beds National Monument, Renowned for Insect Fossils, Authorized 1969	21	22	23	24 **Did You Know?** Hurricane Andrew (Category 5) Hits Florida and Louisiana, 1992	25 **Did You Know?** Hurricane Katrina (Category 5) Strikes Florida, Later Louisiana, 2005
26	27 **Did You Know?** Colonel Edwin Drake Drills First U.S. Oil Well in Titusville, Pennsylvania, 1859	28	29	30	31	

LEARNING ACTIVITY:

Enliven Data With Art

Grade Levels: 4-12

Materials

- Paper
- Paint, brushes, coloring pencils, or other coloring utensils

Source: Science Friday. Adapted with permission.

There are many reasons people look to art for expression. Art is a means to express emotion, document events, and convey information. In this exercise, you will select a scientific graph that addresses an important real-world issue, create an illustrated graph from that original, and craft an effective artist's statement that connects the two. Once you're done, keep an eye out for other ways you can merge science with art. The possibilities are endless!

Procedure

1. Observe a few examples of art inspired by real-world, geoscientific data with your class. Some examples can be found at **www.sciencefriday.com/illustratedgraphs**. Discuss some of the following questions:
   - What do you see? What do you feel?
   - What do you think the artist is attempting to express?
   - Does anything strike you as powerful in this art?
   - Can you spot the line graph?
   - Before you read the artist's statement about each piece, consider, what data do you think the original graphs depict?

   Read artists' statements:
   - What is the focus of the written descriptions that accompany each piece?
   - What is the tone and style of the written descriptions?
   - Are there similarities among the various written descriptions? Distinct differences?

2. Find some Earth science data that is relevant and meaningful to you. This may be related to work you are doing in school or something else that interests you. Make sure the graph demonstrates a clear trend, pattern, or change.

   Make note of the source of your data and be sure to use reputable data. Consider how you can integrate the graph into a visual story. Are you trying to express causes, consequences, or something else?

3. Now, create art. When you have decided on the data you will use, print the graph, or create your own version of the graph on which you will create your art.

   Sketch out a few drafts of what your final piece will look like on extra sheets of paper, or you may use a computer to create your art. Create your final version of your piece, with color.

4. Create an artist's statement. Designate a title for your work. Describe the significance of the original graph. Explain the relationship between the illustration and the underlying scientific data. In other words, briefly tell the story that your image conveys about the data. Also, explain any personal connections to the data or why this particular graph/data set inspired your piece.

   Provide a link to the source of the original graph that viewers can visit to learn more. Beneath or to the side of your art, show the raw data used in your art. This may be a table or the graph itself.

5. Finally, display your work! Share it in a school gallery, or post it online for your friends and family. And check out the hashtag #illustratedgraph online!

NGSS Connections

- Science and Engineering Practices—Analyzing and interpreting data; Obtaining, evaluation and communicating information
- Crosscutting Concept—Patterns
- Disciplinary Core Ideas—Earth's place in the universe; Earth's systems; Earth and human activity

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2 **Did You Know?** Unnamed Hurricane (Category 5) Batters Florida Keys, 1935	3 **Labor Day**	4 **Protect Your Groundwater Day**	5	6	7	8 **Sept. 8-11, 2018:** Geoscience Event: AIPG National Meeting, American Institute of Professional Geologists, Colorado Springs, Colorado
9 **Rosh Hashanah begins (sundown)**	10 **Happy Birthday!** Stephen Jay Gould, U.S. Paleontologist and Evolutionary Biologist, Born 1941	11 **Rosh Hashanah ends** **Patriot Day**	12	13 **Did You Know?** Hurricane Ike (Category 4) Strikes Texas, 2008	14	15 **Sept. 15-23, 2018:** Geoscience Event: 61st AEG Annual Meeting/13th International Association of Engineering Geologists and the Environment (IAEG), San Francisco, California
16	17 **Citizenship Day** **Constitution Day**	18 **Yom Kippur begins (sundown)**	19 **Yom Kippur ends**	20	21	22 **Did You Know?** Hawaii Volcanoes National Park, Containing World's Most Active Volcano, Established 1961 **Autumnal Equinox** **National Public Lands Day**
23 30	24 **Sept. 24-26, 2018:** Geoscience Event: SPE Annual Technical Conference and Exhibition, Society of Petroleum Engineers, Dallas, Texas	25	26	27	28	29

LEARNING ACTIVITY:

ShakeAlert Earthquake Early Warning

Grade Levels: K-12

Materials (Per group)

- Rare earth magnets, preferably elongated design
- PVC pipe, about 1" in diameter, cut into 1.5" long pieces
- Spool of thin copper wire, with thin, insulating coating
- Fine sandpaper
- 2 gator clips
- Ammeter
- Thick cardboard
- Rubber bands
- Tape

Source: California Geological Survey. Adapted with permission.

Have you ever felt an earthquake? What was it like? What did you do? More than 143 million people are exposed to potentially damaging shaking in the United States.

When an earthquake happens, seismic waves travel outward in all directions. Primary (P) waves travel faster than secondary (S) waves, which do most damage. But electronic information can be sent faster than P and S waves. The **ShakeAlert** Earthquake Early Warning System can detect an earthquake quickly and send an alert before strong shaking arrives. A few seconds of warning does not sound long, but it is enough time to do something to protect yourself, such as Drop! Cover! and Hold On!

The U.S. Geological Survey (USGS) along with universities and state agencies in Washington, Oregon, Nevada, and California are developing the ShakeAlert Earthquake Early Warning (EEW) System for the West Coast. Several countries including Japan, Mexico, Taiwan, and China already use EEW systems.

A **ShakeAlert** can also be used to trigger automated actions such as starting emergency generators, slowing down trains, opening fire house doors, closing water system valves, or playing a pre-recorded message on a loud speaker. In this activity, you will explore these concepts by creating a seismometer that sends an electrical signal.

Procedure

1. Tightly coil copper wire around PCV pipe, leaving about ¼-inch at both ends and about 10 inches of wire extending out from each end. Tape the wire in place and use sandpaper to remove coating from the wire.
2. Connect a gator clip to each end of the wire, and connect each to the positive and negative connections on the ammeter.
3. Move magnets back and forth inside the solenoid. By doing this, the changing magnetic field creates a changing electric field, producing an electric current. What happens to the needle in the ammeter? This simple tool is an example of an early warning system. Shaking moves the magnet which generates a current, which can send a warning signal.
4. Build a system that includes your seismometer, for example, in the ground, a building, or a pipeline.
5. Develop, test, and modify your designs to see what works best. Share designs with the class.

ShakeAlert STEM Classroom Discussion

How would various situations be made more safe if people and automatic systems were alerted that they were about to experience earthquake shaking? A surgeon performing an operation? A chemistry teacher and students in a lab? An amusement park with lots of fast rides? What can you do to keep yourself safe during an earthquake?

Explore Further

Full Classroom Activity and More—STEM Connections to the US Earthquake Early Warning System: **www.ShakeAlert.org/resources**

NGSS 3-D Learning

- Science and Engineering Practices—Obtaining, Evaluating, and Communicating Information
- Disciplinary Core Ideas—Earth and Human Activity
- Crosscutting Concepts—Cause and Effect

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
7	8 **Columbus Day**	9	10	11 **Oct. 11-13, 2018:** Geoscience Event: NSTA Area Conference, National Science Teachers Association, Reno, Nevada	12	13
14 **Oct. 14-19, 2018:** **Geoscience Event:** SEG International Exhibition and 88th Annual Meeting, Society of Exploration Geophysicists, Anaheim, California	15 **Earth Science Literacy Day**	16 **Earth Observation Day** **No Child Left Inside Day**	17 **Did You Know?** San Francisco's 1989 Earthquake (Estimated Magnitude 6.9) Rocks Northern California, 1989 **National Fossil Day**	18 **Geoscience for Everyone Day** **Great ShakeOut** earthquake drill 10:18 a.m. Learn more at ShakeOut.org	19 **Geologic Map Day**	20 **International Archaeology Day**
21 **Oct. 21-27, 2018:** **National Chemistry Week**	22	23 **Did You Know?** Fossil Butte National Monument, Containing Nearly Perfectly Preserved Fossils, Established 1972	24	25	26	27
28	29	30	31 **Halloween**			

EARTH SCIENCE WEEK

LEARNING ACTIVITY:

What Covers Our Land?

Grade Level: 6-8

Materials

- Color print out or digital display of this Landsat satellite image of the Connecticut River: https://eoimages.gsfc.nasa.gov/images/imagerecords/91000/91115/connecticut_oli_2017278_lrg.jpg
- Grid printed on transparency sheets or see-through paper
- Dry erase or transparency markers or colored pencils

Source: NASA. Adapted with permission.

Looking at Earth from space is inspiring. All of the colors you see in a satellite image tell you a lot about the world around us. What is on the land around you? Pavement? A grassy lawn? A forest? What covers our land matters because we depend on crops and pasture to produce food, forests for wood products, plants for clean air, and water to support wildlife.

Mapping land cover is important for people studying how plant cover, water bodies, and other resources are changing with shifting temperature and rainfall patterns. It helps scientists and land managers understand fire and flood risks too. We can make land cover maps by going outside and charting what we see, but we also can use satellite data for the "big picture" scale.

Different kinds of land cover have different colors in satellite images. A ground-based map is a very detailed map of a small area. A satellite map shows a large area, but in less detail. Both mapping techniques are needed to get a complete view of Earth's changing land cover. You can make a land cover map using both techniques in this activity.

Procedure

1. Perhaps beforehand to save time, print a color copy of the satellite image. Also, print or make a grid on a transparency or thin see-through paper. A printable grid can be found on page 19 of this document: https://landsat.gsfc.nasa.gov/wp-content/uploads/2013/05/Landsat_QuantifyChanges.pdf
2. Look at the satellite image of the Connecticut River. Does the land look the way you think you might see it from space? Why?
3. Discuss what you see in the satellite image. The image includes city, forest, farms, and bodies of water. What color are cities? Forest? Farmland? Water? A description of the image is at https://earthobservatory.nasa.gov/IOTD/view.php?id=91115
4. Working in small groups or individually, place the transparent grid over the image, then color all of the grids according to which feature covers most of that square:

Feature	Color	Number of Cells	Percent of Land cover
Forest	Green		
Farmland	Orange		
Cities	Black		
Water	Blue		
Other:			

If more than one land cover type is in a square of the grid, choose the type that covers the most area.

5. Your colored grid is a land cover map. Count all of the forest squares. What percentage of the total land is forest? Calculate this by counting the total number of squares in the grid. Divide the number of forest squares by the total and multiply by 100.
6. What percent of the land is farmed? What percent is city? Water?
7. What would a land cover map of your schoolyard look like? Assign each student a square area of the schoolyard to map. Choose land cover types appropriate for your area like grass, pavement, or trees. Combine all of the squares into a land cover map.

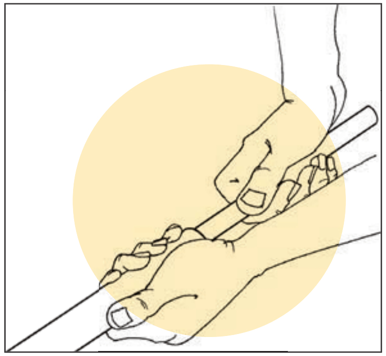
NGSS 3-D Learning

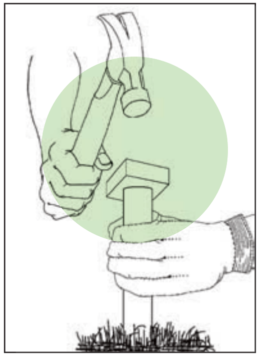
- Science and Engineering Practices—Analyzing and Interpreting Data
- Disciplinary Core Ideas—Earth Systems: water and land use changes (ESS2.C), land cover changes (ESS3.C)
- Crosscutting Concept—Scale, Proportion, and Quantity

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 **Happy Birthday!** Alfred Wegener, German Meteorologist, Framer of Continental Drift Theory, Born 1880	2	3
4 **Nov. 4-7, 2018:** **• AAPG ICE Conference, Cape Town, South Africa** **• GSA, Indianapolis** **• ASA-CSSA-SSSA Meeting, Baltimore**	5	6	7 **Happy Birthday!** Marie Curie, Polish Geochemist and Physicist, Born 1867	8	9	10
11 **Veterans Day** **Nov. 11-17, 2018: Geography Awareness Week**	12	13	14 **GIS Day (Geographic Information Systems) Day** **Happy Birthday!** Charles Lyell, Scottish Geologist, "Principles of Geology" Author, Born 1797	15 **Nov. 15-17, 2018: Geoscience Event** NSTA Area Conference, National Science Teachers Association, National Harbor, Maryland	16	17
18	19	20	21	22 **Thanksgiving**	23	24
25	26	27	28	29 **Nov. 29- Dec.1, 2018: Geoscience Event:** NSTA Area Conference, National Science Teachers Association, Charlotte, North Carolina	30	

LEARNING ACTIVITY:

Digging Into Soil





Grade Levels: 5-8

Materials

- Piece of heavy-duty PVC pipe about one inch in diameter and 10 inches long
- Piece of wood doweling that will fit inside the PVC pipe
- Hammer
- Wood block
- Leather garden glove
- Hand lens or microscope
- Non-toxic marker
- Large sheet of white posterboard
- Six clear plastic sandwich bags
- Plastic knife
- Tools for separating soil, such as tweezers, tongue depressor, drinking straw
- Paper towels (for clean up)

Source: American Geophysical Union. Adapted with permission from "Soils Sustain Life," AGI.

Procedure

1. Choose a spot to investigate the soil on publicly owned land, such as your school's property. Have an adult make sure the selected spot is safe to use.
2. Place one end of the PVC pipe on the ground, set the block on top, and hammer it into the soil.
3. Move the pipe gently in a circular motion to loosen it. If the pipe is stuck, use gentle side taps with the hammer to free it. Carefully pull the pipe out of the ground, making sure the soil remains inside the pipe.
4. Insert the dowel into the open end of the pipe and carefully push the core of soil out onto a flat surface.
5. Trying not to break the soil core apart, record your observations of the core. Make note of anything interesting, especially:
   - How the core is different at the top than at the bottom
   - Any color changes along the core
   - Different types of material in the core, including size, color, and shape
   - Any living things in the core
6. Draw a picture of the core sample in the middle of your posterboard, using colored pencils and markers. Include and label all parts and objects you observe.
7. Cut the core down the center with the plastic knife. Note any new materials or interesting items you uncover, and mark them on your drawing.
8. Using the tools you have, pull the core apart. Separate different materials into groups. You'll probably find at least four or five groups. Think about how you decided to group, or classify, these materials.
9. Look at each material using the hand lens or microscope. Record information in a data table like the one below. If possible, take a close-up image of each object. Create a table with the following information for each object or material.
   - Column A: Image or Sketch
   - Column B: Type of Material
   - Column C: Color
   - Column D: Size
   - Column E: Location (Where it appears in the core in centimeters from the surface)
   - Column F: Name (Try to figure out what these materials might be)
10. After you identify all materials in the soil, place each group in a clear plastic bag. Arrange the plastic bags around your drawing of the core sample to create a display. Draw arrows from each material to the part or parts of the core sample from which most of that material came.
11. Repeat this activity at a different times of the year and compare your notes. You may consider doing this before, during and after droughts, spring and fall, or once per month. What has changed? What has stayed the same? Why?

NGSS Connections

- Science & Engineering Practices—Planning and carrying out investigations
- Disciplinary Core Ideas—Earth's systems: Biogeology; Earth materials and systems
- Crosscutting Concepts—Stability and change; Cause and effect

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2 **Did You Know?** Aniakchak National Monument, One of World's Finest Examples of Dry Caldera, Established 1980 **Hanukah Begins (Sundown)**	3	4	5 **World Soil Day**	6	7 **Pearl Harbor Remembrance Day**	8
9	10 **Dec. 10-14, 2018: Geoscience Event:** AGU Fall Meeting, American Geophysical Union, Washington, DC **Hanukah Ends**	11 **International Mountain Day**	12	13	14	15
16 **Did You Know?** First of Three Earthquakes in New Madrid, Missouri (Estimated Magnitude 8.0), Causes Mississippi River to Change Course, 1811	17	18	19	20	21 **Winter Solstice**	22
23 30	24 31 **New Year's Eve**	25 **Christmas**	26 **Did You Know?** Earthquake Off West Coast of Northern Sumatra (Magnitude 9.0), Sets Off Massive Tsunami, 2004 **Kwanzaa**	27	28	29

LEARNING ACTIVITY:

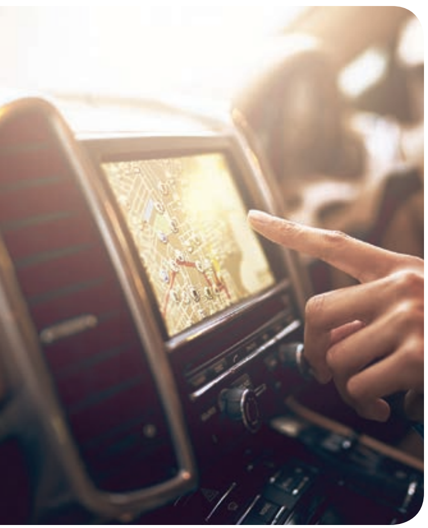
Latitude and Longitude

Grade Levels: 6-8

Materials

For a group of four:

- Orange, or other spherical object
- World map or globe
- Pencils and black marker
- Index cards
- Internet access



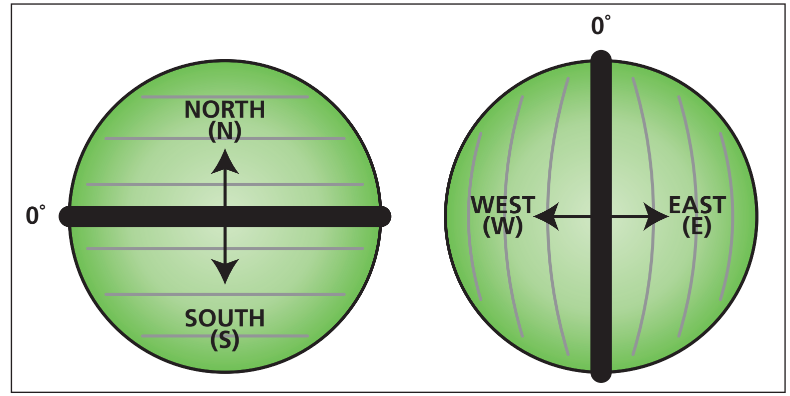
Source: Geological Society of America. Adapted with permission.

You may have seen or used Global Positioning System (GPS) devices in cars or on camping trips. These devices use data from satellites orbiting the Earth to locate places on our planet. GPS devices describe the locations to us in the form of latitude and longitude coordinates.

Citizen scientists involved in the Geological Society of America's EarthCaching project (www.earthcache.org) use GPS technology and latitude and longitude coordinates to locate places on the Earth. This activity will help you learn how to find locations using latitude and longitude.

Procedure

1. Imagine that your orange is Earth. Place a mark somewhere on the orange to represent where you live. How could you communicate to someone exactly where you live? Working in a group of about four students, discuss.
2. Now, look at the map or globe. Notice the lines that run horizontally and vertically across the map or globe. What do you think these lines represent? How can they help you locate places on the planet?
3. Locate the lines that run across the Earth horizontally, or in the East-West direction. These are the lines of latitude. What does the line in the middle represent? What number do you see on, or next to, that line? As you move away from this line, towards the North and South pole, what happens to these numbers? Why? These numbers are the degrees of latitude. Where are the highest latitudes?
4. Locate the lines that run from north to south on the map or globe. These lines are called "meridians." Locate 0-degrees longitude. This is called the "Prime Meridian." What is the largest number you see associated with meridians? What happens if you go past this number?



5. Find where you live on the globe or map. What is the latitude there? If it's north of the equator, you read the latitude as so many degrees "north." What is the longitude? If it's west of the Prime Meridian, you read it as so many degrees "west."
6. Locate the country that is 35 degrees North latitude and 25 degrees East longitude. What body of water surrounds this country? If possible, look up this country on the Internet and find out who lives there, as well as and something about the country's history and culture.
7. Locate a country you would like to visit, and write down latitude and longitude within that country on an index card (don't include the name of the country). Trade your card with another person in your group, and locate that person's country. Who is able to find the other country first? Check with each other to see if you located the countries correctly. Research your country online, and trade what you find out with your partner.

NGSS Connections

- Science and engineering practices—Developing and using models
- Crosscutting Concepts—Systems and system models
- Disciplinary Core Ideas—Earth and the solar system

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 **New Year's Day**	2	3	4	5
6	7	8 **Did You Know?** Voyageurs National Park, Featuring Some of North America's Oldest Rocks, Established 1975	9	10	11	12 **Did You Know?** Earthquake (Magnitude 7.0) Strikes Capital of Haiti, Causing Nearly 300,000 Deaths, 2010
13	14 **Happy Birthday!** Arthur Holmes, British Geologist, Pioneer of Radioactive Dating of Minerals, Born 1890	15	16	17 **Happy Birthday!** Benjamin Franklin, U.S. Scientist, Pioneering Inventor and Diplomat, Born 1706 **Did You Know?** Northridge Earthquake (Magnitude 6.7) Strikes Los Angeles Area, California, 1994	18	19
20	21 **Martin Luther King, Jr. Day**	22	23 **Happy Birthday!** Andrija Mohorovicic, Croatian Physicist, Seismologist and Meteorologist, Namesake of Base of Earth's Crust, the "Moho," Born 1857	24	25	26
27	28	29 **Happy Birthday!** Friedrich Mohs, German Geologist and Mineralogist, Creator of Scale of Mineral Hardness, Born 1773	30	31		

LEARNING ACTIVITY:

Determining Mineral Reserves

Grade Level: 6-12

Materials

- Cardboard boxes (similar to those that a ream of copy paper comes in)
- Plaster cloth sheets
- 2-3 bags of clean, dry sand (or "play sand," #400)
- 1 box of plastic sipping straws

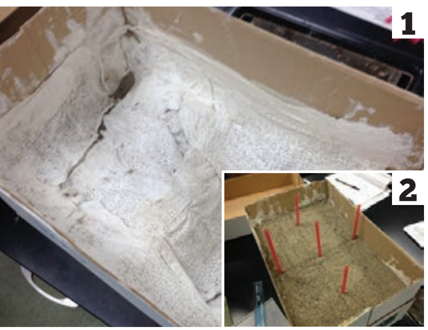


Figure 1. *Box without sand. Note irregular bottom surface of empty box.*

Figure 2. *Box with sand added and five straws used to estimate volume of sand in box.*

Source: Minerals Education Coalition. Adapted with permission.

Common things we use every day, like roads, sidewalks, schools, hospitals and homes—to name just a few—are made up of rocks and minerals. As a resource, they are called mineral reserves and include materials like sand, gravel, limestone, granite, and other aggregate and construction materials.

These important resources are located underground, requiring technicians and scientists to utilize various tools to determine the quantity and quality of these materials. This activity explores the physical testing, calculations, and scientific methods commonly used to determine the quantity of mineral reserves.

Procedure

1. Work in groups of two or three students per box.
2. Place plaster cloth sheets in your box to simulate a rolling, undulating surface. This represents the surface of solid bedrock. Use wadded paper or other materials to create an irregularly shaped contour. Use duct tape to close openings between plaster cloth and box sides.
3. Fill the box with sand, and spread a level surface approximately 2-3" below the box top. Trade your box with another group.
4. Calculate the volume of aggregate (sand) in the box above the bedrock. You cannot take the sand out to measure its true volume until the very end.
5. To calculate, "drill" five holes throughout your territory and measure the depth of each drill hole. You may use straws or a ruler to drill, mark, and measure where you drill. Create a diagram, like a map, and mark these locations. Consider: Why are you choosing these locations? How will you use your measurements to calculate a volume? You will use this strategy after you take measurements.
6. "Drill" into your drill sites and record the measured depth at each location. Use your strategy to calculate the volume of aggregate that you decided on in the previous step.
7. Once you have "estimated" as closely as possible using your system of measuring volume, measure the volume using large beakers or measuring cups.
8. Calculate the accuracy of your results. Use the following equation:

$$\textbf{Percent error} = \frac{\textbf{(your value – actual value)}}{\textbf{Actual value}} \textbf{ X 100}$$

Consider: What were your sources of error? What would you do differently to decrease the percent error? Would a different "drill pattern" give more accurate results? Would more "drill holes" help? In the real world, each "drill hole" costs money. Do you think your method was cost-effective?

Extension: Build your own shoebox-size model of real geologic structures such as faults, folds, and plateaus. Cover them with sand. Let others try to identify the structures using the straw method.

Celebrate Earth Science Week With MEC Education Resources:
www.mineralseducationcoalition.org/esw

NGSS Connections

- Science and engineering practice—Developing and using models, Using mathematics and computational thinking
- Crosscutting Concepts—Systems and system models
- Disciplinary Core Ideas—Natural Resources

This activity was adapted with permission from the Ohio Mining & Mineral Education Program (OMMEP) of the Ohio Aggregates & Industrial Minerals Association (OAIMA) in partnership with Wright State University.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2 **Groundhog Day** **World Wetlands Day**
3	4	5	6	7 **Did You Know?** Earthquake (8.8 Magnitude) Shakes Chile, Triggering a Tsunami that Hits Hawaii, 2010	8	9
10	11 **Did You Know?** Death Valley National Park, Lowest Below Sea Level in North America, Proclaimed 1933	12 **Happy Birthday!** Charles Darwin, English Naturalist, "The Origin of Species" Author, Born 1809	13	14 **Valentine's Day**	15	16
17 **Feb. 17-23, 2019: National Engineers Week**	18 **Presidents Day**	19	20	21	22	23
24	25	26 **Did You Know?** Grand Canyon National Park, Exhibiting Largest Section of Geologic Time on Earth, Established 1919	27	28		

LEARNING ACTIVITY:

Investigating Rock Types

Grade Levels: 5-9

Materials

For a group of four:

- Sedimentary rock samples, preferably of several different types (e.g. sandstone, shale, limestone, conglomerate, etc.)
- Hand lens or stereoscopic microscope
- Index cards (at least one per person)

In any science, it is important to accurately and understandably describe your observations for others. Whether for advancing research or informing the public, communicating your work is critical.

For geologists, this comes down to describing rocks' colors, patterns, shapes, and other features. These features may reveal evidence about the past, clues to their suitability for a construction project, or signs of valuable natural resources hidden within them.

For example, when you travel around your community, observe the various buildings and other structures. How many are made from rocks or materials that come from rocks?

Procedure

1. Your teacher will give you a rock sample, hand lens, and index card. Observe the rock closely, first just with your eyes and then with the hand lens. Also observe the rock's shape and texture. Avoid describing the size and shape, as these characteristics depend mainly on how the rock was broken down into its current appearance. Write your name and your observations on the index card.
2. All the rock samples will be collected and placed in a long line. Trade your card with a classmate and locate their rock from the line of rocks and bring it back to your table. Check with the owner to make sure that you have identified it correctly.
3. In your group, discuss how hard or easy it was to find the rock. What information would make it easier to find? Look over your observations to see whether you included features such as color, size, and arrangement of crystals or grains, fractures or breaks in the rock, layering, or relative hardness. Add any new details to your card.
4. The rocks will be collected and put into a long line again. This time, you will be given someone else's card and will need to find that person's rock. When you find the rock, check with the owner to make sure that you have identified it correctly.
5. Take the new rock and card back to your seat, and use them to answer these questions:
   - What could the owner have done to make finding the rock easier?
   - Can you make any more observations about this rock that are not included on the index card?
6. The types of rock samples you have been observing are called sedimentary rocks. Are there any features that all of these rocks share that suggest they should be categorized in one group?

Extension: Go online and research how each type of sedimentary rock was formed. Identify in each rock evidence about its past.

NGSS Connections

- Science and Engineering Practices—Obtaining, evaluating and communicating information
- Disciplinary Core Ideas—Earth materials and systems
- Crosscutting Concepts—Patterns

Source: AAPG. Adapted with permission from "Investigating Earth Systems," AGI.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 **Did You Know?** Yellowstone National Park, Containing Half of World's 1,000 Known Geysers, Becomes First National Park, Established 1872	**2**
3	**4**	**5**	**6** **Ash Wednesday**	**7**	**8**	**9**
10 **March 10-16, 2019: National Ground Water Awareness Week** **Daylight Saving Time Begins**	**11**	**12**	**13**	**14** **Happy Birthday!** Albert Einstein, German-American Physicist, Author of "Theory of Relativity," Born 1879	**15**	**16**
17 **St. Patrick's Day**	**18**	**19**	**20** **Vernal Equinox**	**21**	**22** **World Water Day**	**23**
24 **Happy Birthday!** John Wesley Powell, U.S. Geologist and Anthropologist, Grand Canyon Explorer, Born 1834 **31**	**25**	**26**	**27** **Did You Know?** Great Alaska Earthquake (Magnitude 9.2) Is Second-Largest of 20th Century and Largest Recorded in Northern Hemisphere, 1964	**28**	**29**	**30**

LEARNING ACTIVITY:

It's the "Rain," Man

Grade Level: K-12

Materials

- A straight sided glass container
- Scissors
- Paper
- Ruler
- Clear tape
- Chart for recording rain measurements (see JetStream link below)
- Map of the area around your location for plotting the students' reports

Source: National Oceanic and Atmospheric Administration. Adapted with permission.

People find inspiration in many different places and things. Among them is taking joy in sensing the Earth around you. Feel the breeze on your face. Take in the fresh smell of the air after a spring rain. Use your hands to build something. Wherever you live you can get outside, savor your surroundings and observe what makes up the rhythms of the place you live.

Credit: CoCoRaHs

Mark Anderson of Univ. of Nebraska, a CoCoRaHS volunteer, explains how to use a rain gauge.

Weather is easy to observe, but changes constantly across time and space. It is rarely the same across a large—or even small—area. You may be surprised how different temperature, sunshine or rain can be just a short distance apart.

In this activity, you will build a rain gauge, collect data about the amount of precipitation, and compare your measurements from home or around your school to those of your classmates.

Procedure

1. Create a classroom network of rain stations: Weather forecasting includes many steps including using models, collecting data, and interpreting data. The first step in forecasting for many scientists begins with measuring the current weather around us. One measurement that has been around a long time is the amount of rain a location has received. You will build a rain gauge and when rain occurs, you will collect measurements and compare your data to your classmates'.

   Visit JetStream—An Online School for Weather for instructions on how to construct your rain gauge and observe rain in your neighborhood: www.weather.gov/jetstream/ll_rain

2. Citizen science opportunity: Now, if you are inspired to broaden your horizons, you can collect precipitation and weather data and share it with a nationwide network of rain, hail and snow observers! The Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) is a community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow) by using low-cost measurement tools.

   CoCoRaHS is a community project. Everyone can help, young, old, and in-between. The only requirements are an enthusiasm for watching and reporting weather conditions and a desire to learn more about how weather can affect and impact our lives.

   The data you collect is important! It can contribute to severe storm warnings, water resource analysis, and regional drought monitoring. Visit www.cocorahs.org.

NGSS Connections

- Crosscutting Concepts—Patterns
- Science and Engineering Practices—Planning and carrying out investigations
- Analyzing and interpreting data
- Obtaining, evaluating, and communicating information
- Disciplinary Core Ideas—Weather and climate

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 **Did You Know?** Start of Midwest Flood of Upper Mississippi River Basin That Would Cover Nine Midwestern and Great Plains States, 1993 **April Fool's Day**	**2**	**3**	**4**	**5**	**6**
7	**8**	**9**	**10**	**11** **Apr. 11-14, 2019: Geoscience Event:** NSTA National Conference on Science Education, National Science Teachers Association, St. Louis, Missouri	**12** **Did You Know?** Arches National Park, World's Highest Concentration of Natural Arches, Established 1929	**13**
14 **Did You Know?** Start of Mount Eyjafjallajökull Eruption in Iceland, Grounding Flights Across Europe for Almost a Week, 2010	**15**	**16**	**17**	**18** **Did You Know?** Great 1906 San Francisco Earthquake (Estimated Magnitude 7.8) Tears 270-Mile Rift Along San Andreas Fault, 1906	**19** **Did You Know?** Soviet Union Launches Salyut 1, First Space Station, 1971 **April 19-27, 2019: Passover**	**20**
21 **Did You Know?** Start of Great Flood of Mississippi River Valley That Would Inundate 27,000 Square Miles, 1927	**22** **Earth Day**	**23**	**24**	**25**	**26** **Arbor Day**	**27**
28	**29**	**30**				

LEARNING ACTIVITY:

Awesome Fossils

Grade Levels: K-8

Materials

Set up

- Plaster of Paris
- Sawdust or soil
- 1 small paper cup per student
- 1 small chicken bone or shell per student

Class activity

- Fossil notebooks or note paper and pen or pencil
- Construction paper
- Craft sticks
- Small paintbrushes

Source: National Park Service. Adapted with permission.

Any evidence of past life preserved in a geologic context, such as within rock or sediment, is called a fossil. In this activity you will work as a paleontologist—a scientist who studies fossils to understand ancient landscapes, climate, and life on Earth—to find and identify fossils.

The National Park Service preserves fossils of many types of organisms and traces evidence of their living behaviors, such as making tracks and burrows. Fossils provide visitors with clues or hints of spectacular landscapes of the past. Because fossils are irreplaceable, it is important to protect them. If you find one in a park, leave the fossil where it is and share your discovery with a park ranger.

Procedure

Set up: A day or two before beginning this lesson, the teacher must prepare "fossils" for students to excavate:

- First, put on a mask to protect your nose and mouth. Mix Plaster of Paris with soil or sawdust until the consistency is almost as thick as mashed potatoes.
- Pour this mixture into paper cups until it covers the bottom of the cup (one cup per student).
- If possible, add scratches, breaks, or chips to the bones and shells that you will add to the plaster.
- Drop in the chicken bone or shell and cover with more plaster mixture. Many fossils are discovered because a small part sticks out of the ground. If possible, try to model this.
- Allow to dry for a day or two, then remove paper cups.

Class activity:

1. Take one "model rock" that your teacher has prepared and place it on your construction paper. Do you see anything sticking out of the rock? What do you think it is? What makes you think that?
2. Your job as a paleontologist is to carefully remove the rock from around a fossil inside. What do you think would be the best technique for excavating the fossil? Using craft sticks as picks, pick away at the rock to reveal the embedded fossil, taking care not to damage it. Use paintbrushes to remove smaller particles of plaster from the fossils.
3. Illustrate your fossil in your fossil notebook or on your note paper and label your drawing as best you can. Be sure to label anything you notice. If you notice anything surprising on your fossil, what do you think it might tell you about what happened to the animal that left behind this fossil?
4. Discuss: What did you enjoy about the process of "digging out" your fossil? Was there anything you did not enjoy? What qualities should a paleontologist have to be successful at finding and excavating fossils? Can anyone look for fossils in national parks? Why or why not?

National Fossil Day

www.nps.gov/fossilday

On the Wednesday of Earth Science Week, celebrate the National Fossil Day! Events are being held nationwide to encourage people to explore and appreciate the animal, plant, and trace fossils in national parks and other public lands. Paleontologists and park rangers are sharing fossil discoveries and explaining the importance of preserving fossils so everyone can share a sense of discovery!

NGSS Connections

- Science and Engineering Practices—Planning and carrying out investigations; Engaging in argument from evidence
- Crosscutting Concepts—Patterns
- Disciplinary Core Ideas—The history of planet Earth; Biogeology

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4 **Did You Know?** Powerful Tornado (F-5) Rips Greensburg, Kansas, 2007
5 **Cinco De Mayo**	6	7 **National Teachers' Day**	8	9	10	11
12 **Mother's Day**	13	14 **Did You Know?** Lewis and Clark Expedition Across Louisiana Territory Begins, 1804	15	16	17	18 **Did You Know?** Mount St. Helens Volcano Erupts South of Seattle, Washington, 1980 **Armed Forces Day**
19 **May 19-22, 2019:** AAPG Annual Meeting, American Association of Petroleum Geologists, San Antonio, Texas	20	21	22 **Did You Know?** Chile Earthquake (Magnitude 9.5) Is Largest Earthquake of 20th Century, 1960	23	24 **Did You Know?** Powell Expedition to Explore Grand Canyon Begins in Green River City, Wyoming, 1869 **Happy Birthday!** Harry Hess, U.S. Geologist, Originator of Idea of Sea Floor Spreading, Born 1906	25 **Did You Know?** Mammoth Cave National Park, World's Longest Cave System With 360 Mapped Miles, Established 1926
26	27 **Memorial Day**	28 **Happy Birthday!** Milutin Milankovitch, Serbian Geophysicist, Best Known for Theory of Climate Change, Born 1879	29	30	31	

LEARNING ACTIVITY:

Making Earth Art With Google Earth

Grade Levels: K-12

Materials

- Computer with internet access via Chrome, Chrome OS, and mobile devices (Android and iOS)

Source: Google.
Adapted with permission.

If you were an alien visiting Earth for the first time, you might remark on the diverse and incredible landscapes and patterns around majestic mountains, green forests, rolling grasslands, and turquoise oceans. You also might recognize geometries of civilization and changing weather patterns. All this can be explored from space. In this activity you will explore our planet using Google Earth and locate natural and man-made patterns and landscapes on Earth's surface that inspire you.

Procedure

1. Open your internet browser and go to https://earth.google.com/web/.
2. Using each feature in Google Earth listed below, identify one pattern or landscape that you will share with your home planet. On a separate document describe what you selected, how it was formed, and what it inspires in you.
3. **Map Style.** View the world differently by clicking on the top sidebar icon and selecting "Map Style." Zoom out to a full globe view and under "custom" turn the clouds on and off. What patterns do you see in the clouds structure and location? (This is real cloud data collected from weather satellites.)
4. **Search for World Wonders.** Already inspired? Have a specific place in mind? Use the search bar to view the 3D landscape. For example, try searching for Mount Fuji (goo.gl/ykfy2c) and learn about Fuji's tourism and natural hazards issues with Google Earth Education in Japan (goo.gl/muKPA2).

Google Earth search connects to Google's Knowledge Graph—its database of information about the world—to display information in knowledge cards. Save this location to your bookmarks by clicking on the icon in the Knowledge Card that appears.

5. **Take a Chance.** Want to explore Earth but need inspiration? The "I'm Feeling Lucky" button takes you to a city, mountain, lake, beach, cave, temple, museum, waterfall or somewhere else to get you started. Once there, use the Sidebar ( ) to turn on "Photos" and explore more views of your location.

Save this location to your bookmarks by clicking on the icon in the Knowledge Card.

6. **View Stories and Test Your Earth Knowledge.** The "Voyager" feature takes users through geospatial collections and stories using satellite imagery as the canvas. For teachers it offers subjects including finding the ABCs from space and seeing how artists create art from satellite imagery. Locations within Voyager cannot be saved directly. You will need to make a note of that location, and search for it separately, which will allow you to save that location with the bookmark option. Star by viewing a Voyager tour. For example, see art on the landscape (goo.gl/mRyyUi) or turn the landscape into art (goo.gl/Ntu7LE).
7. **Save and share your favorite places.** Your saved locations can be found in "My Places" ( ), in the left panel. The locations saved in My Places can be exported as a KML file (Google Earth's content file format), allowing others to see the same views. Click the icon next to "Bookmarks," then select the ⋮ icon. Click "Export as KML file" and email the file that saves to your teacher.

Learn more at www.google.com/earth/education.

NGSS Connections

- Science and Engineering Practices—Asking questions and defining problems
- Crosscutting Concepts—Patterns
- Disciplinary Core Ideas—Earth's Systems; Earth and Human Activity

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3 **Happy Birthday!** James Hutton, Scottish Geologist, "Father" of Modern Geology, Born 1726	4	5	6	7	8 **World Oceans Day**
9	10	11	12 **Did You Know?** Big Bend National Park, Featuring Fossilized Skeleton of Quetzalcoatlus, Largest Winged Animal, Established 1944	13	14 **Flag Day**	15 **Did You Know?** The Philippines' Mount Pinatubo Erupts in Second-Largest Volcanic Eruption of 20th Century, 1991
16 **Father's Day**	17	18	19 **Did You Know?** U.S. Viking 1 Becomes First Spacecraft to Land Safely on Mars, 1976 **Juneteenth**	20	21 **Summer Solstice**	22
23 30 **International Asteroid Day**	24	25	26	27	28	29

LEARNING ACTIVITY:

Earth and Ancient Architecture

Grade Levels: 6-10

Materials

- Computer with internet access
- World map outline

Ziggurat at Ur

Temple 4, Tikal

Source: Archaeological Institute of America. Adapted with permission.

Great Pyramid, Giza

Stepped Pyramid, Saqarra

Great Pyramid, La Venta

Monks Mound, Cahokia

Architects and engineers often design and build structures inspired by the earth's natural formations and shapes. This was also true for the ancient builders who built pyramidal structures and platforms with broad bases and tapered sides, inspired in most cases by the hills and mountains they saw around them. While many societies built them, pyramids and platforms across different cultures were not all alike, differing in shape, function, and construction materials, and techniques.

The construction of these monumental structures took many years and involved thousands of people. Ancient builders used the materials available to them. For example, the scarcity of stone in ancient Mesopotamia led the builders to use bricks made of mud to build their platforms called "ziggurats." The Egyptians used locally available limestone and granite for their pyramids, and Mississippian cultures in North America often built their mounds entirely from dirt.

It is clear from the archaeological evidence and monumental size of these structures that they were built by and for powerful rulers and leaders. Whether they were used as tombs or as platforms for temples, pyramids and platforms are testaments to the ingenuity of the ancient architects, engineers, and builders and also to the power and wealth of the rulers who could afford build them.

Procedure

For each of the pyramids pictured below, mark their location on a world map and discuss the following questions. You may also share your research with a presentation, or poster. On your map, create a key with symbols that designate buildings with pointed tops or flat tops.

1. What culture built it? When was it built?
2. What was its purpose? What about the design of the structure made it ideal for this purpose?
3. What materials is it made of?
4. How high is it and what are the dimensions of the base?
5. Are there any connections between the material used and the height of the structures? How could you represent this graphically?
6. How were the sides and tops shaped?
7. From how far away was the material brought?
8. What is the climate like where the pyramid was constructed?
9. How has climate affected the pyramid since it was constructed?

NGSS Connections

- Science and Engineering Practices–Analyzing and interpreting data
- Disciplinary Core Ideas—Earth and Human Activity
- Crosscutting Concepts—Structure and Function

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4 **Independence Day**	5	6
7	8	9	10	11	12	13
14 **Happy Birthday!** Florence Bascom, U.S. Geologist, First American Female Ph.D., Born 1862	15	16	17	18	19	20 **Did You Know?** U.S. Apollo 11 Astronaut Neil Armstrong Becomes First Human to Walk on Moon, 1969
21	22	23	24	25	26	27
28 **Parents' Day**	29	30 **Happy Birthday!** Marie Tharp, U.S. Geologist, Sea Floor Cartographer, Born 1920	31			

What Is Earth Science Week?

The American Geosciences Institute has organized this annual international event since 1998 to help people better understand and appreciate the Earth sciences and to encourage responsible stewardship of the planet. Earth Science Week takes place October 14-20, 2018, celebrating the theme "Earth as Inspiration."

Visit the Earth Science Week website—www.earthsciweek.org—to learn more about how you can become involved, events and opportunities in your community, the monthly Earth Science Week newsletter, highlights of past Earth Science Weeks, and how you can order an Earth Science Week Toolkit.

You are invited to help keep the spirit of Earth Science Week alive all year long by posting this calendar in your classroom, office, or home. Whoever you are and wherever you go, you can celebrate Earth science!

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Association for Women Geoscientists
Association of American State Geologists
Association of Earth Science Editors
Association of Environmental & Engineering Geologists
Clay Minerals Society
Council on Undergraduate Research
Environmental & Engineering Geophysical Society
Friends of Mineralogy
Geo-Institute of the American Society of Civil Engineers
Geochemical Society
Geological Association of Canada
Geological Society of America
Geological Society of London
Geoscience Information Society
History of Earth Sciences Society
International Association of Hydrogeologists/ U.S. National Chapter
International Medical Geology Association
Karst Waters Institute
Mineralogical Society of America
Mineralogical Society of Great Britain and Ireland
National Association of Black Geoscientists
National Association of Geoscience Teachers
National Association of State Boards of Geology
National Cave and Karst Research Institute
National Earth Science Teachers Association
National Ground Water Association
National Speleological Society
North American Commission of Stratigraphic Nomenclature
Paleobotanical Section of the Botanical Society of America
Paleontological Research Institution
Paleontological Society
Petroleum History Institute
Seismological Society of America
SEPM (Society for Sedimentary Geology)
Society for Mining, Metallurgy & Exploration
Society of Economic Geologists
Society of Exploration Geophysicists
Society of Independent Professional Earth Scientists
Society of Mineral Museum Professionals
Society of Vertebrate Paleontology
Soil Science Society of America
The Society for Organic Petrology
United States Permafrost Association

EARTH SCIENCE WEEK

October 14-20, 2018

FUTURE DATES

October 13–19, 2019
October 11–17, 2020
October 10-16, 2021

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