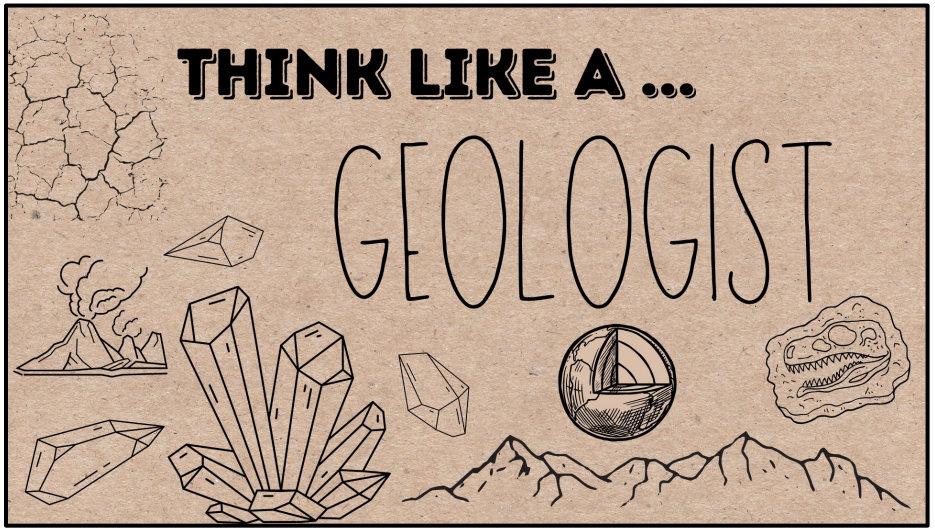
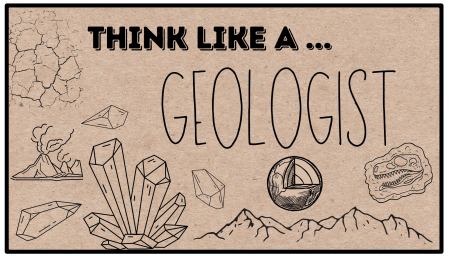
Sedimentologist:

A geologist who examines certain rock types, but usually soil from a variety of areas



Eggshell Geodes

How might a geologist describe the details of geodes using language of the discipline?



Eggshell Geodes

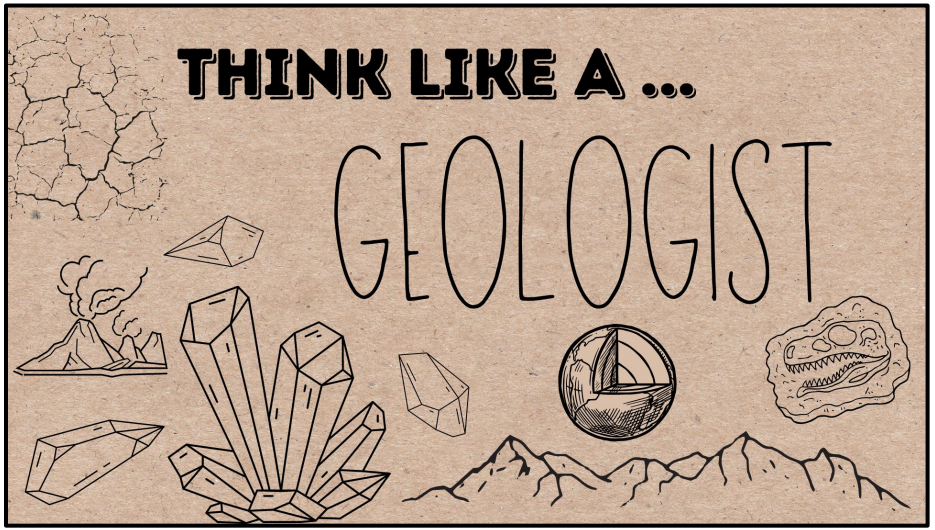
Materials Needed: 4 egg shells, 1 ¾ cup Borax powder, 5 plastic cups, Food coloring, 4 cups boiling water

Procedure:

- Bring 4 cups of water to a boil and stir in the borax powder until it is dissolved. There should be a little borax on the bottom of the pan that does not dissolve.
- Set up 5 separate cups in a location where they won't be disturbed. Pour ¾ cup of the borax mixture into each cup. Next, you can add food coloring and stir.
- Place an eggshell down into each cup making sure the inside of the shell is face up. You want to put the eggshells into the cups while the water is still very hot. Work quickly.
- Let the shells sit in the cups overnight or even for two nights for plenty of crystals to grow on them! You don't want to agitate the cups by moving them or stirring them, but make sure to check on them with your eyes to observe the process.

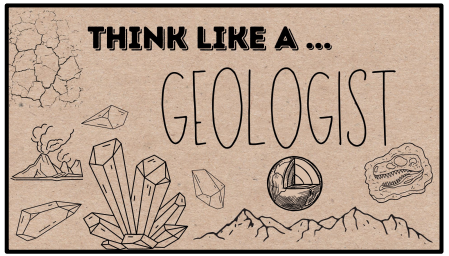
Paleontologist:

A geologist who studies or is an expert in the branch of science concerned with fossil animals and plants



Fossils

What unanswered questions regarding fossils are necessary for us to gain better understanding of Earth Science?



Coffee Ground Fossils

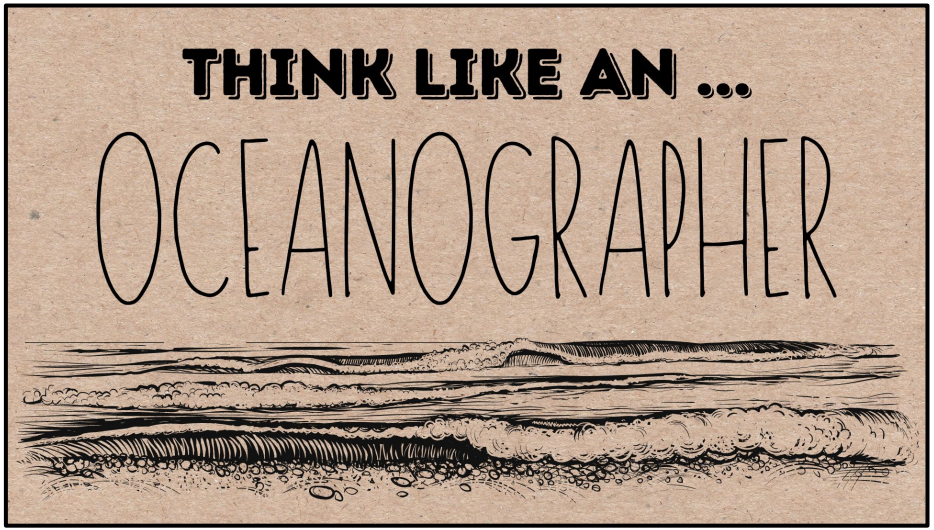
Materials Needed: 1 cup used coffee grounds, ½ cup cold coffee, 1 cup flour, ½ cup salt, wax paper, mixing bowl, items for impressions (seashells, leaves, dinosaur toys, etc)

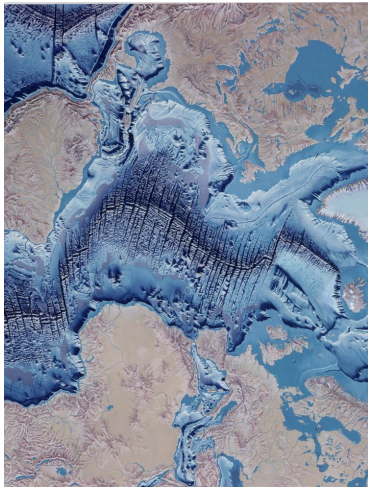
Procedure:

- Stir together the coffee grounds, coffee, flour, and salt until mixed well.
- Knead the dough and then flatten it out onto the wax paper.
- Press your seashells or other items firmly into your fossil dough to leave an imprint.
- Allow your newly formed coffee-ground fossils to dry and harden, leaving them on wax paper and exposed to air.

Hydrographer:

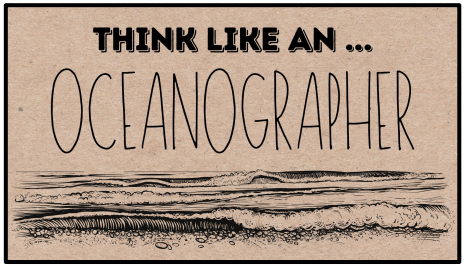
An oceanographer who surveys and charts bodies of water, such as seas, lakes, and rivers.





Underwater Mapping

How is hydrography related to other branches of science, social studies, math, and language arts?



Underwater Mapping

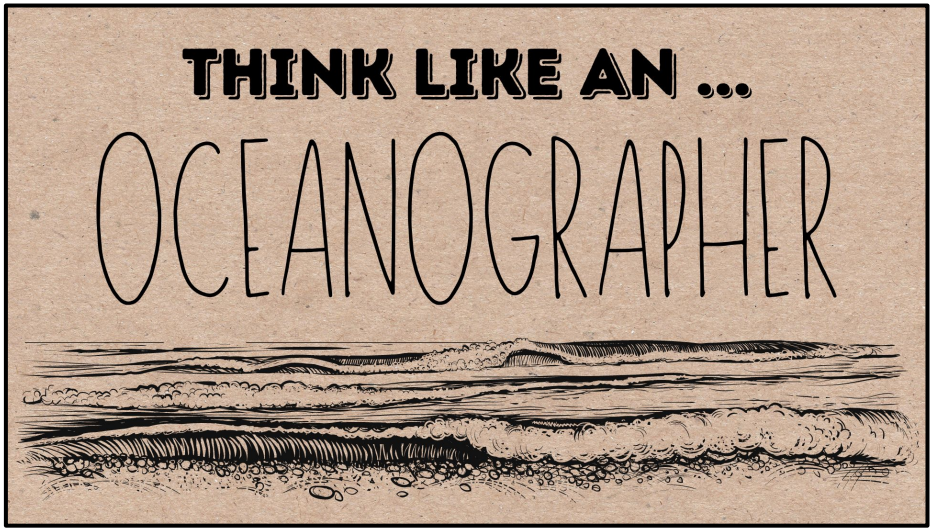
Materials Needed: shoebox ocean model*, wooden skewers, graph paper, colored pencils, markers

Procedure - Create a map of the ocean floor

- Mark your wooden skewer every centimeter with a different color. Associate each depth with a different color. This will allow the various depths to be distinct when the measurements are transferred to the "chart" or graph paper.
- Poke the skewer into the box through the graph paper and until it touches the bottom.
- Record the depth on the "chart" or a separate graph paper. Continue taking "soundings"
- Shade in the graph paper to make a color-coded bathymetry map.

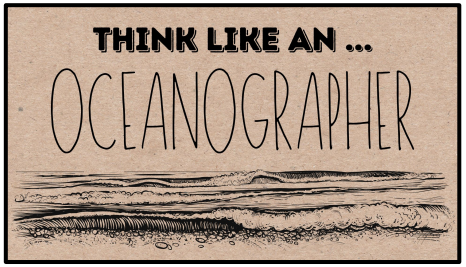
Marine Biologist:

A scientist who studies biological oceanography and the associated fields of chemical, physical, and geological to understand marine organisms.



Live Streams

What controversies exist regarding marine biology?



Aquarium of the Pacific

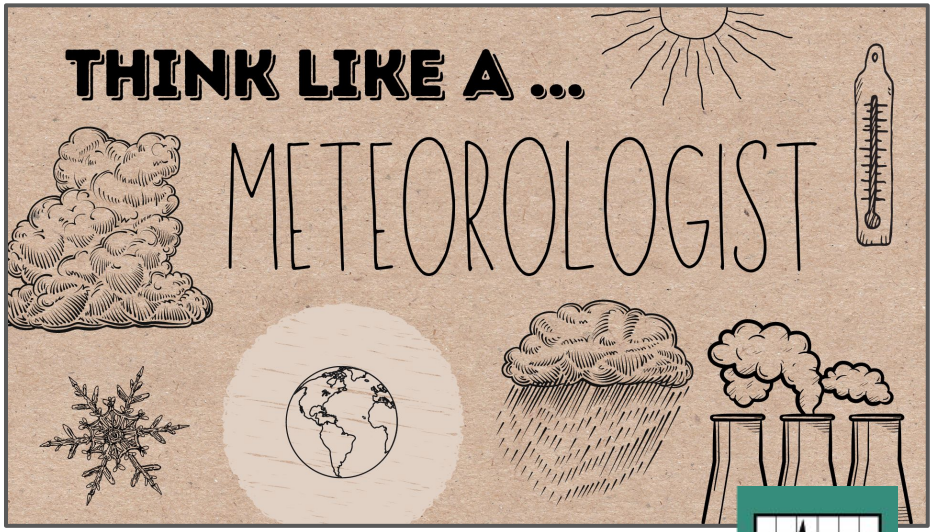
Live Streams

Procedure: View several live streams from the Aquarium of the Pacific, located in Long Beach, California. Be sure to scroll down to the Information box to understand what you may be observing.

Tropical Reef Aquarium Live Stream
Shark Lagoon Live Stream
Tropical Fish Coral Predators Live Stream
West Coast Sea Nettles - Jellyfish Tank Live Stream
Blue Cavern Aquarium Live Stream
Magellanic Penguin Nest Live Stream
Moon Jelly Live Stream
Penguin Beach Live Stream
Penguin Underwater Live Stream

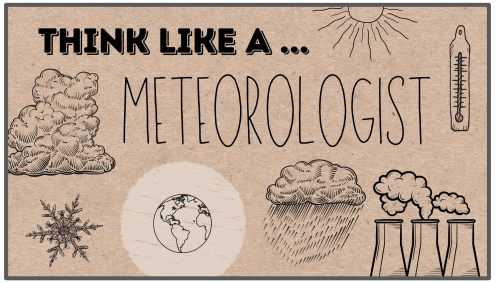
Fulminologist:

A meteorologist who studies the causes of lightning and thunder and their after-effects.



Make Your Own Lightning

Certain parts of the world have much more frequent lightning strikes than others. Check out this yearly lightning strike map. The areas shaded in red and orange have frequent flashes, while blue and purple areas experience lightning less frequently. What do the red and orange areas have in common? When you are done with the yearly map, head over to the daily strike map to investigate where lightning is striking today. How does it compare with the yearly map? Remember: When the Northern Hemisphere is experiencing winter, the Southern Hemisphere is experiencing summer. Do you notice more strikes in the Northern or Southern Hemisphere? What does that tell you about lightning and thunderstorms?



Make Your Own Lightning

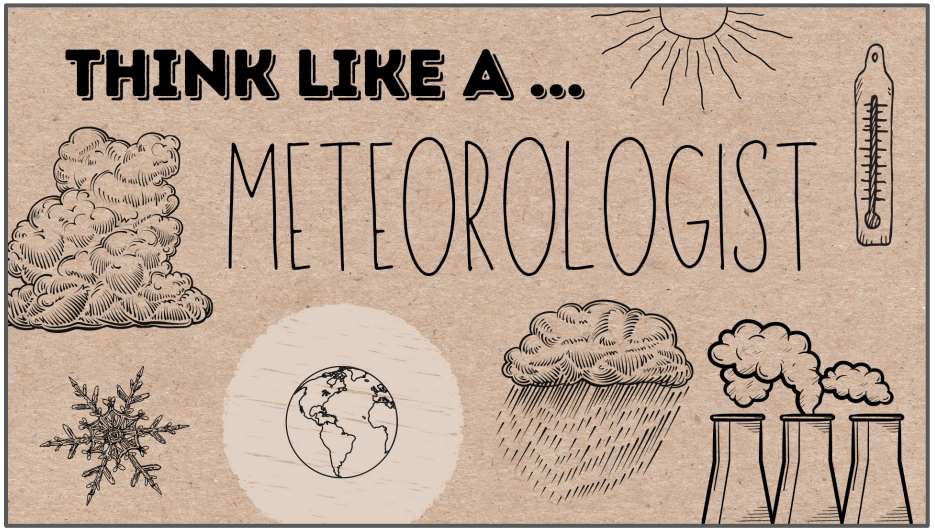
Materials Needed: scissors, Styrofoam tray, masking tape, aluminum pie tin

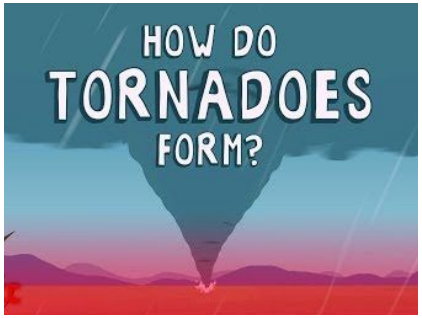
Procedure:

- Cut a piece off one corner of the Styrofoam tray. You'll have a long bent piece that looks a little like a hockey stick. Tape the bent piece to the center of the pie tin. Now you have a handle!
- Rub the bottom of the Styrofoam tray on your hair. Rub it all over, really fast.
- Put the tray upside down on a table or on the floor.
- Use the handle to pick up the pie tin. Hold it about a foot over the Styrofoam tray and drop it.
- Now--very slowly--touch the tip of your finger to the pie tin. Wow! What a spark! (Be careful. DON'T touch the Styrofoam tray. If you do, you won't get a spark.)
- Use the handle to pick up the pie tin again. Touch the tin with the tip of your finger. Wow! You get another great spark
- Drop the pie tin onto the Styrofoam tray again. Touch the pie tin. Another spark! Use the handle to pick up the pie tin. More sparks!

Atmospheric Scientist:

A meteorologist who studies tornadoes and has the technology to forecast and track tornado outbreaks.

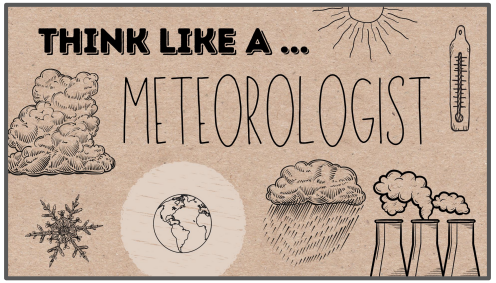




TedEd: Tornadoes

There is a specific pattern for tornado formation.

Why is this pattern so valuable?



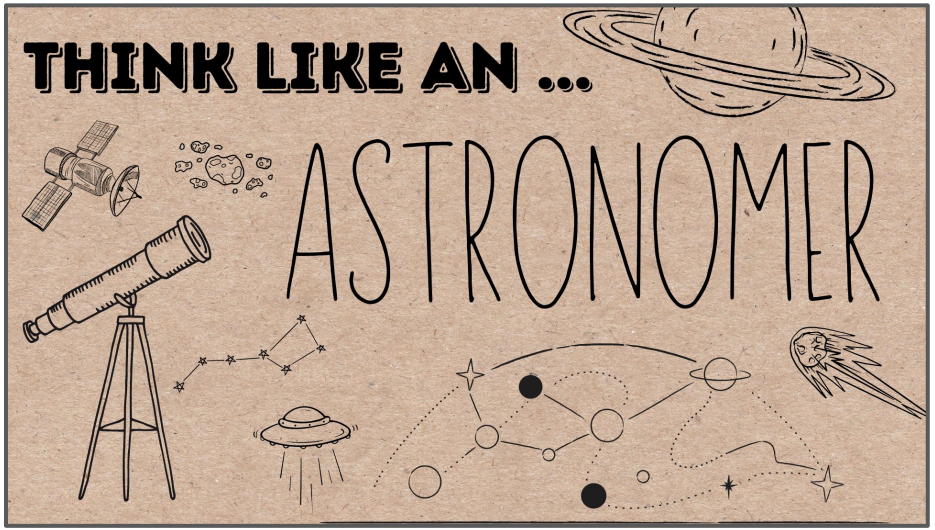
TedEd: Tornadoes

Procedure:

- Scan the QR code to watch the TedEd Video: How Tornadoes Form.
- The National Oceanic and Atmospheric Administration (NOAA) has an awesome review of many different types of severe weather from its National Severe Storms Laboratory. Visit the site and learn more about all the types of extreme weather and more about tornadoes. What kind of severe weather are you most interested in? Have you ever experienced any yourself?
- Want to know the likelihood of a storm occurring today? NOAA also has a Storm Prediction Center that will give you up to date information.

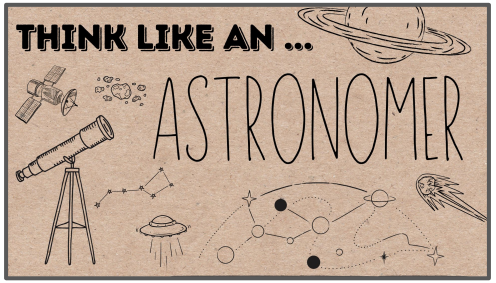
Stellar Astronomer:

An astronomer who studies the life cycle and structure of stars, both individuals and populations.



Constellations

How does the perspective about constellations of ancient people differ from our perspective today?



Constellations

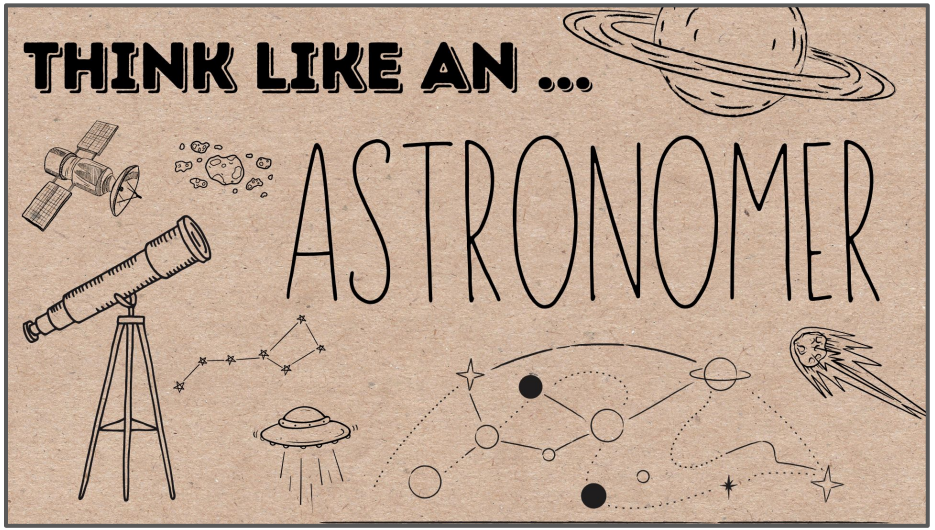
Materials Needed: constellation cards, hole punch, flashlight, black construction paper, star sticks, chalk markers

Procedure:

- Use the constellation cards to learn more about the constellations.
- Use a hole punch to punch out the stars of each constellation.
- Use a flashlight and shine through the holes. The constellation should appear on the wall. Have your group members guess what constellation you are projecting.
- Create your own constellation. Use the star stickers and chalk markers to create your own constellation on a sheet of black construction paper. Be creative. Give it a unique name and backstory.

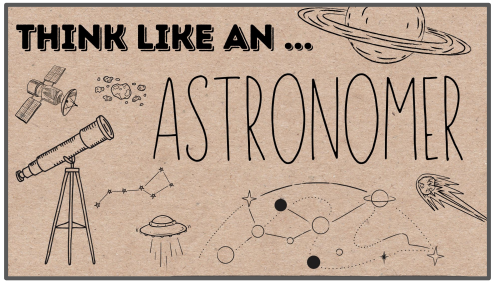
Galactic Astronomer:

An astronomer who studies our Milky Way galaxy and all its contents.



Galaxy Watercolors

How has our understanding of galaxies changed over time?



Galaxy Watercolors

Materials Needed: circle template, scissors, white acrylic paint, watercolors, paintbrush, coarse salt, watercolor paper

Procedure:

- Cut out the circle/satellite template.
- Drip several colors of watercolor paint onto watercolor art paper.
- Spread the paint around with a large paintbrush. Repeat with more drips.
- After the last set of drips, add a handful of course salt to the paint puddles and let dry.
- Now splatter a few drips of white paint on top of your 'galaxy' to add stars.
- Glue your circle/satellite on top of your galaxy art.