



EYE-OPENING EARTH SCIENCE ACTIVITIES



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DIGGING DEEP

Do you often wonder how the world around you works? When you visit your favorite beach, do you wonder why it looks different than the last time you saw it? On a cloudy day, do you ask yourself how clouds form? To find out the answers to questions like these, curious scientists do experiments.

Now it's your turn to be a curious scientist. Get ready to use your creativity and get a little messy! You will learn about the rock cycle, cool cave formations, and more. The results will be eye opening!



Safe Science

Read through each activity before starting. Collect all of the materials that you will need. You may need an adult to help you find or buy some materials. Experiments can be tricky. Be sure to ask an adult for help if you need it.



CLOUD IN A JAR

To some people a cloudy sky means a ruined day at the beach, but clouds are an important part of Earth's weather. Clouds are made up of tiny water droplets and ice crystals that are so small they float in the air. Learn how these droplets form and make your own cloud in a jar!

Materials:

- jar with a lid
- 1/2 cup (118 milliliters) very hot water
- ice cubes
- hairspray

Steps:

1. Ask an adult to help you pour the hot water into the jar.
2. Turn the lid upside down and place it on top of the jar.
3. Put a handful of ice cubes on top. Let the ice cubes sit there for 15-20 seconds.
4. Remove the lid and spray a bit of hairspray into the jar.
5. Quickly replace the lid with the ice still on top. Watch the cloud form inside the jar!

How it Works:

Three things are needed to make a cloud: moist air, cooling, and small particles for water **vapors** to **condense** onto. When the hot water is added to the jar some of it turns to water vapor. The vapor rises to the top of the jar. It comes in contact with the cold air caused by the ice cubes. In nature, water vapor may condense onto things such as dust particles, pollen, or air pollution. In this activity, the water vapor condensed onto the hairspray. That is why you see a cloud form in the jar!

vapor—a gas made from something that is usually a liquid or solid at normal temperatures

condense—to change from a gas to a liquid: water vapor condenses into liquid water



CRAYON ROCK CYCLE

Have you ever wondered why some rocks are broken up into small pieces and others are round and smooth? Have you seen rocks that look like they are made up of different layers? Use crayons to learn about the rock cycle! Crayons can be heated, **compressed**, and cooled to help us better understand the three types of rocks that make up the rock cycle. These types of rocks are **sedimentary**, **metamorphic**, and **igneous rocks**.

Materials:

- 2–3 different colored wax crayons, papers removed
- handheld pencil sharpener or plastic knife
- aluminum foil or foil cupcake liners
- source of hot water
- container to hold hot water

Steps:

1. Use a sharpener or plastic knife to shave the crayons into small pieces. Keep the different colors separate.

Step 1



2. Sprinkle a layer of each color crayon onto a piece of aluminum foil. This represents the laying down of sediments.
3. Fold up the foil and press down on it very hard. This is an example of the pressure that creates sedimentary rock. Unwrap the foil and examine your first crayon rock.

Step 2



Step 4



4. Ask an adult to pour hot water into a bowl. Rewrap your crayon rock from step 3 in foil and dunk it in the water for 15-20 seconds.

compress—to squeeze together into less space

sedimentary rock—rock formed by layers of rocks, sand, or clay that have been pressed together

metamorphic rock—rock that is changed by heat and pressure

igneous rock—rock that forms when magma, melted rock found beneath Earth's surface, cools