

Lava Flow

Have a blast exploring volcanic eruptions! Create your own volcano and watch the lava flow. Try this experiment several times and change variables to see if you can get different results.

TEKS:

3.3C Represent the natural world using models such as volcanoes or Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials.

4.3C Represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations, including accuracy and size.

3.7B Investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides

5.5D Identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water.

Materials:

- 1 piece of copy paper
- Baking soda
- Crayons or markers
- Dish soap
- Flat tray or pan
- Red and yellow food coloring
- Scissors
- Spoon
- Tape
- Vinegar
- Vitamin jar or container of similar size

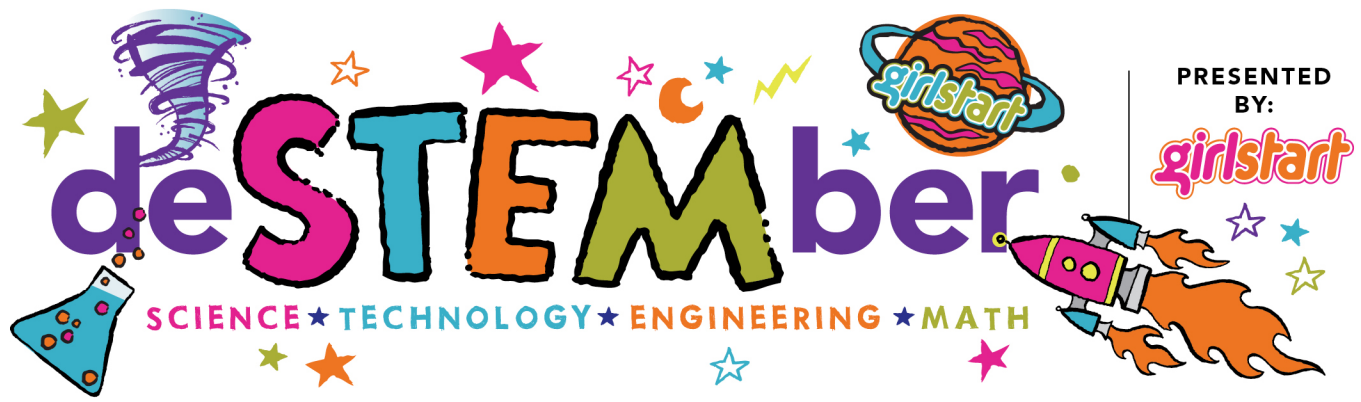
How To

1. Cut a strip of copy paper in half lengthwise.
2. Form an open ended cone shape that is large enough to fit over the vitamin bottle. Make sure that the smaller opening (top of the cone) is large enough to fit your metal spoon through. Tape the ends of the paper to secure the cone shape. Trim the bottom of the cone so that it is straight and can stand up upright.
3. Decorate the cone so that it looks like a volcano.
4. Place the vitamin bottle on the tray with the cone over the top of the bottle.
5. Add two spoonfuls of baking powder.
6. Add about a spoonful of dish soap.
7. Add several drops of red and yellow food coloring.
8. Now that you are ready. Pour in about an ounce of vinegar.
9. Quickly set the lid of the container over the opening. Do not fasten it on the bottle.
10. Watch what happens!

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Why Does it Work?

A volcano is produced over thousands of years as heat and pressure build up. A volcano consists of an opening, or a vent, through which magma and dissolved gases are released. Just underneath the Earth's crust is a layer called the mantle, which is made of up plates that are always moving and shifting. Sometimes the plates separate. That creates heat and causes the mantle to melt into magma. The magma comes up through the crack between the plates, and forms lava at the Earth's surface. The lava spreads out, cools down, and becomes rock again.

How is this experiment like a volcanic eruption? This volcano model erupts due a chemical reaction between the baking soda and vinegar, and not due to heat and pressure as in a real volcano. Like some volcanoes, this model releases a gas (carbon dioxide) into the air and lava flows slowly over the sides of the vent to form a river or lake of lava. By placing the lid over the medicine bottle you can see how the force of the eruption pushes the lid away from the vent, allowing the lava to flow.

Career Connection:

A **volcanologist** studies the remains of either dead or dormant volcanoes and monitors currently present volcanoes that may be active. Volcanologists work to understand how and why volcanoes erupt, how to predict eruptions, the impacts of eruptions on Earth's history and how eruptions affect humans and their environment.

Resources: <http://www.sciencebob.com/experiments/volcano.php>

<http://www.stevespanglerscience.com/lab/experiments/erupting-peroxide-volcano>

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