

MOUNTAIN OF FIRE

STEM ACTIVITY

Make Your Own Volcano

Materials

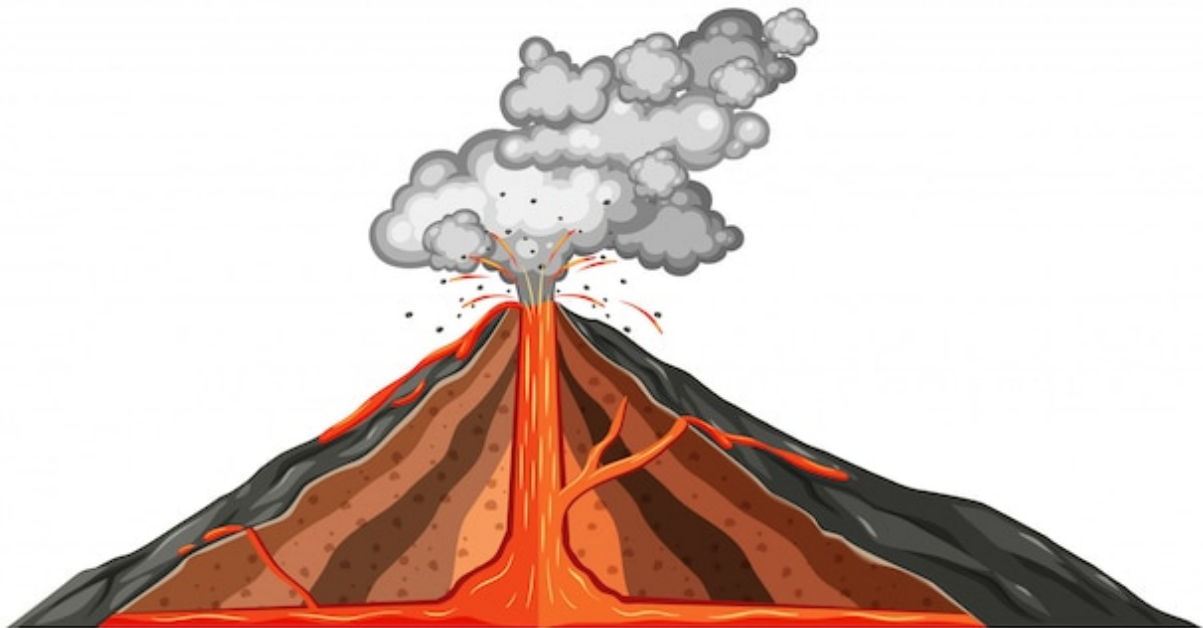
- 6 cups flour
- 2 cups salt
- 4 tablespoons cooking oil
- warm water
- plastic pop bottle
- dishwashing detergent
- food coloring
- vinegar
- baking dish or another pan
- 2 tablespoons baking soda

Method

1. Start by making the cone of your volcano by mixing 6 cups flour, 2 cups salt, 4 tablespoons cooking oil, and 2 cups of water. The resulting mixture should be smooth and firm (add more water if needed).
2. Stand the pop bottle in the baking pan and mold the dough around it to form a volcano shape. Be sure not to cover the hole or drop dough inside the bottle.
3. Fill the bottle most of the way full with warm water and a bit of red food coloring. (You can do this prior to sculpting the cone as long as you don't take so long that the water gets cold.)
4. Add 6 drops of detergent to the contents of the bottle. The detergent helps trap bubbles produced by the chemical reaction so you get better lava.
5. Add 2 tablespoons baking soda to the liquid in the bottle.
6. Slowly pour vinegar into the bottle, and then watch your volcano erupt!

The science behind this experiment

- Δ The lava is the result of a **chemical reaction** between the baking soda and the vinegar.
- Δ In this reaction, **carbon dioxide** gas is produced, which is also present in actual volcanoes
- Δ As the carbon dioxide gas is produced, **pressure** builds up inside the bottle until gas erupts from the mouth of the volcano



Source:

Helmenstine, Anne Marie, Ph.D. "How to Make a Baking Soda Volcano." ThoughtCo, Apr. 5, 2023, [thoughtco.com/baking-soda-volcano-science-fair-project-602202](https://www.thoughtco.com/baking-soda-volcano-science-fair-project-602202).