

HOMESCHOOL SCIENCE

LAB SHEET

Name: _____

Date: _____

Lesson/Topic: _____

Making a Miniature Erupting Volcano

In this experiment, you will build a model volcano with realistic geological layers. Then you will make it erupt using a simple chemical reaction to simulate how real volcanoes erupt.



OBJECTIVE

To model the structure of a volcano and demonstrate how gas pressure from underground can cause an eruption.



MATERIALS

- Clear cup or small plastic container
- Modeling clay or play dough (multiple colors)
- Small funnel or rolled paper cone
- Baking soda
- Vinegar
- Dish soap (optional)
- Red food coloring (optional)
- Spoon or scoop
- Tray or plate (to catch mess)
- Water
- Labels or toothpick flags (optional)



SAFETY

- Do this experiment on a tray to contain spills.
- Do not taste any of the materials.
- Avoid getting vinegar in eyes. Wash hands after the experiment.
- Adult supervision is recommended.

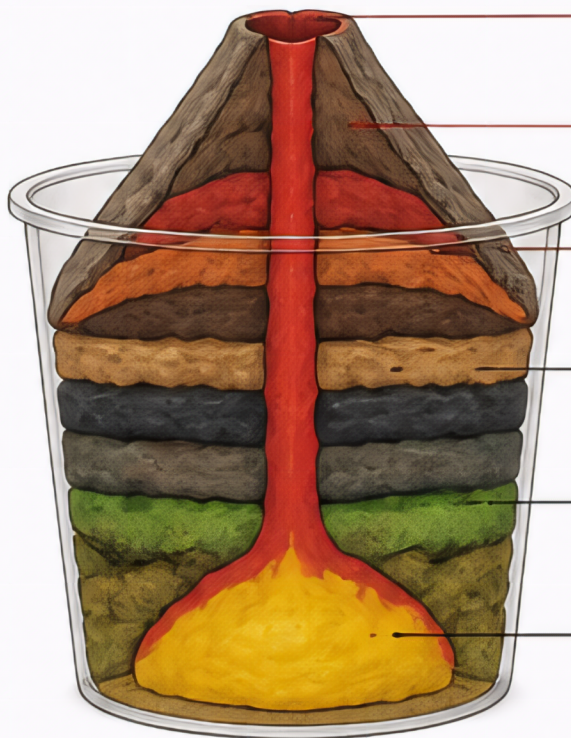


BUILDING STEPS

1. Place the funnel or paper cone in the center of the cup. This will be the main vent.
2. Start adding layers around the vent using different colors of clay to represent lava and ash layers.
 - Example: Lava layer (red/brown), then ash layer (gray), then lava again. Repeat several times.
3. Build the layers up to the top, forming a cone shape around the vent.
4. Remove the funnel carefully. This leaves a hollow vent from the top to the bottom.
5. Shape the top to form a crater (a small bowl around the vent opening).

PART 1: BUILD THE VOLCANO – GEOLOGICAL LAYERS

Build your volcano in layers to show how real volcanoes are formed.



CRATER

The bowl-shaped opening at the top of the volcano where eruptions come out.

VENT (MAIN CONDUIT)

The channel that allows magma, gas, and ash to travel to the surface.

LAVA LAYERS

Layers of lava flows that have cooled and hardened over many eruptions.

ASH LAYERS

Layers of ash, dust, and small rock pieces that settle between lava flows.

BASE ROCK

The older, solid rock that forms the foundation of the volcano.

MAGMA CHAMBER

Underground reservoir of hot, molten rock (magma) that feeds the eruption.

PART 2: MAKE THE VOLCANO ERUPT!



1. Place the volcano on your tray.
2. Pour 2–3 tablespoons of baking soda into the vent.
3. Add a few drops of dish soap (optional) and food coloring.
4. Slowly pour 1/4 cup of vinegar into the vent and step back!
5. Watch your volcano erupt with foamy "lava"!



WHAT'S HAPPENING?

The baking soda (a base) reacts with the vinegar (an acid) to produce carbon dioxide gas. The gas builds up pressure and pushes the foamy mixture out of the volcano—just like real volcanic eruptions!



OBSERVATIONS & REFLECTION

1. Describe what happened during the eruption. _____
2. Which layer do you think was the strongest? Why? _____
3. How is this model similar to a real volcano? _____
4. What questions do you still have about volcanoes? _____

VOCABULARY

Volcano: An opening in Earth's crust where magma, gas, and ash escape.

Magma: Molten rock beneath the Earth's surface.

Lava: Molten rock that reaches the Earth's surface.

Eruption: When magma, gas, ash, and rock are expelled from a volcano.

Vent: The pathway that magma uses to reach the surface.