



BUILDING A MODEL OF A VOLCANO

WITH INTERNAL LAYERS

In this experiment, you will build a model of a volcano that shows what is inside the Earth.

OBJECTIVE

To build a model of a volcano with its internal layers and identify the parts of the Earth that make up a volcano.



BACKGROUND

A volcano is an opening in Earth's crust where magma, ash, and gases can escape from below the surface. Beneath a volcano are many layers of the Earth. Magma forms in the mantle, rises through cracks and vents, and can erupt onto the surface.

The main internal layers involved are:

- **Crust** – The thin, outer rocky layer.
- **Mantle** – A hot, thick layer of rock beneath the crust.
- **Magma Chamber** – A pocket of molten rock that collects magma.
- **Main Vent** – A pipe-like opening that carries magma to the surface.
- **Volcano Cone** – The mountain built from layers of lava, ash, and rock.



MATERIALS

- Cardboard or foam board (base)
- Modeling clay or playdough (multiple colors)
- Small cup or bottle cap (for crater)
- Plastic knife or sculpting tool
- Toothpicks or labels
- Paper and pencil (for notes)
- **Optional:** Paint, brushes, and glue



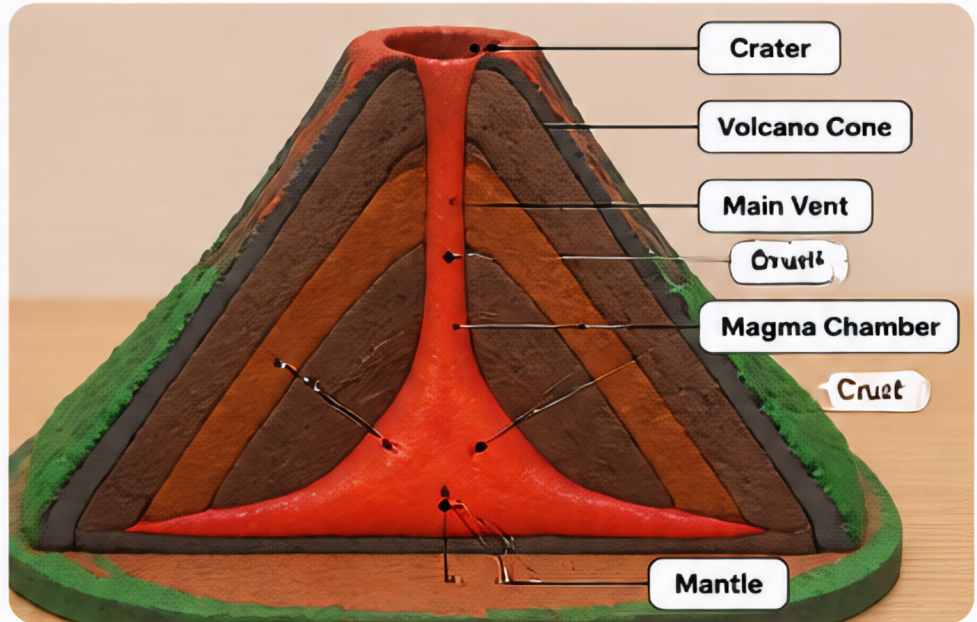
THINK & ANSWER

- Where does magma form?

- How does magma reach the surface?

- Why do you think volcanoes are shaped like cones?

- What would happen if the main vent was blocked?



PROCEDURE

1. **Prepare the Base:** Place your cardboard or foam board on a flat surface.
2. **Build the Mantle:** Use one color of clay to make a thick layer for the mantle. Spread it across the base.
3. **Add the Magma Chamber:** Use a second color to form a blob or rounded shape within the mantle layer for the magma chamber.
4. **Create the Main Vent:** Roll a long, thin tube of clay from the magma chamber up through the mantle and to the surface.
5. **Add the Crust:** Cover the mantle with a thin layer of another color of clay to represent the crust. Make sure the vent reaches the top.
6. **Build the Volcano Cone:** Shape the clay around the vent to form a cone or mountain. Leave the top open for the crater.
7. **Add the Crater:** Place a small cup or bottle cap at the top opening to create the crater shape.
8. **Label the Layers:** Use toothpicks and labels to identify: **Crust**, **Mantle**, **Magma Chamber**, **Main Vent**, **Volcano Cone**, and **Crater**.
9. **Decorate (Optional):** Paint or add details to make your volcano look realistic.
10. **Study Your Model:** Observe the layers and how magma travels from the chamber to the surface.



OBSERVATIONS

Draw a diagram of your volcano model and label the internal layers.