

Objective

By the end of this lesson, you will be able to create a paper mache volcano and understand the basic science behind volcanic eruptions.

Materials and Prep

- Newspaper
- Cardboard
- Masking tape
- Flour
- Water
- Mixing bowl
- Paint
- Paintbrushes
- Vinegar
- Baking soda
- Optional: Food coloring

Prior knowledge required: Basic understanding of volcanoes and their eruptive behavior.

Activities

- Create the volcano structure using cardboard and tape.
- Tear newspaper into strips and mix flour and water to create a paper mache paste.
- Dip the newspaper strips into the paste and cover the volcano structure with multiple layers.
- Allow the paper mache volcano to dry completely.
- Paint the dried volcano to resemble a real volcano.
- Set up a safe area for eruption experiments.
- Pour vinegar into the volcano crater.
- Add a spoonful of baking soda into the crater and observe the eruption.
- Repeat the eruption experiment with variations, such as adding food coloring to the vinegar or adjusting the amount of baking soda.

Talking Points

- Volcanoes are openings in the Earth's crust where molten rock, ash, and gases can escape from deep within the Earth.

"Volcanoes are like the Earth's pressure valves. They release built-up pressure from underneath the surface."

- Volcanic eruptions occur when the pressure inside the volcano becomes too great, causing the magma to rise to the surface.

"When the pressure inside the volcano becomes too high, it's like a soda bottle that's been shaken. The magma wants to escape and it shoots out of the volcano."

- The vinegar and baking soda reaction mimics the chemical reaction that occurs during a volcanic eruption.

"When vinegar (acid) reacts with baking soda (base), it produces carbon dioxide gas, just like

when magma and gases mix inside a volcano. The gas buildup causes the eruption."

- Volcanic eruptions can vary in intensity, from gentle lava flows to explosive eruptions with ash clouds and pyroclastic flows.

"Some volcanoes erupt with slow-moving lava flows, while others explode with a lot of force, shooting ash and debris into the air."

- Volcanoes can be found all over the world and have shaped the Earth's landscape over millions of years.

"Volcanoes have been around for a very long time and they have played a big role in shaping our planet's surface. They can create new islands, mountains, and even change the climate."