

2e

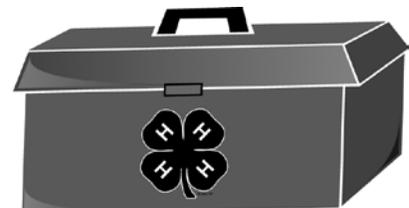
"Make a Volcano"

Lesson

Plan

VOLUNTEERIN

4-H Toolkit for Success





Learning Objectives

1. Explore how volcanoes help form igneous rocks.
2. Describe what happens during a volcanic eruption.
3. Build a mini volcano.

Intended Audience

4-H Club members



Supplies & Resources Needed

- Lesson plan outline
- Baking soda
- Vinegar
- Red food coloring
- 8 oz. glass jar
- Safety goggles



References

Purdue University Extension. (2007). *Geology – Level 1* (4-H 985). West Lafayette, IN.

Projected Length

15-20 minutes

Introduction



Have you ever wondered how rock is formed? In this activity we'll take a look at how rocks are formed as a result of volcanoes. And, we'll make a mini-volcano!



Objectives 1 & 2

Explore how volcanoes help form igneous rocks.
Describe what happens during a volcanic eruption.

Magma is melted rock below the Earth's surface. It is called lava when it flows out to the surface of the Earth. Igneous rocks are formed under conditions of intense heat or produced by the solidification of volcanic magma on or below the Earth's surface. Igneous rocks are formed from magma that is cooled and hardened into rock.

Magma moves toward the surface of the Earth filling in cracks, forcing its way between the layers of other rocks, and occupying large spaces as the surrounding rock is melted or pushed aside. All of this takes a long, long time.

Sometimes magma finds a weak spot and flows slowly to the surface of the Earth where it cools. Sometimes magma blows violently out through a hole in the Earth, and we say that a volcano has erupted. The magma that spills out of a volcano is called lava.

Objective 3

Build a mini volcano.



Now let's build a mini volcano on our own! For this activity, be sure you have on your safety goggles.

Show 4-H Club members the principles of volcanic eruptions by creating a volcano (without the high temperature).

1. Place 3 to 4 tablespoons of baking soda into the glass jar.
2. Add a few drops of food coloring to ½ cup vinegar. Pour vinegar over the baking soda and watch it fizz.
3. You can also create a hollow mountain structure from paper mache, cardboard, or clay and place a cup containing the baking soda inside. Leave the top open as the volcano's vent. Pour the vinegar into the vent and over the baking soda and watch the miniature volcano erupt.

Group Discussion

Ask the group some of the following discussion questions.

- What happened when you poured the vinegar onto the baking soda?
- What causes lava to flow?
- What change happens to the magma when it cools on the Earth's surface?

It is the policy of the Purdue University Cooperative Extension Service that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran.

Purdue University is an Affirmative Action institution. This material may be available in alternative formats.

