

Bay Area Scientists in Schools Presentation Plan

Lesson Title: All about Volcanoes

Presenter: Joan Rueter

Grade Level: Kindergarten

Standards Connection: Earth Science – Characteristics of different landforms

Abstract: In this lesson, we will learn about volcanoes: what they are, where they are, what's inside them, and what makes them erupt.

Vocabulary/Definitions:

Volcano: a landform created when magma from the earth's interior escapes through an opening in the earth's surface and flows out.

Magma: melted rock inside the earth.

Lava: melted rock outside the earth.

Igneous rock: a rock formed from lava or magma.

Materials:

I will bring: rock samples, volcano cup, paper plate, vinegar, baking soda, volcano coloring sheets.

Students will need: crayons, markers, or colored pencils

Classroom Set-up:

Students should be seated at desks or tables with a clear view of the chalkboard.

Classroom Visit

1. Personal Introduction and Topic Introduction: 5-10 minutes

- Hi, my name is Joan. I am a student at Laney College. I am studying geology. Geology is the study of the earth and what it is made of. A lot of the earth is made up of rock. I really like rocks.
- Ask students questions: What do you know about rocks? Did you know that some rocks come from volcanoes? What do you know about volcanoes? What would you like to know about volcanoes?

2. Learning Experiences: 35-40 minutes

- One type of rock is an igneous rock. Sometimes it comes from volcanoes. Volcanoes are landforms created when magma from inside the earth escapes and becomes lava. Magma is melted rock beneath the earth's surface. Lava is melted rock above the earth's surface. When magma and lava cool, they make rocks.



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Activity 1: Volcanic rock identification. Hand out rocks formed from lava and rocks formed from magma. Describe the characteristics of each rock and ask students to separate into two groups according to which rock they have: magma (from inside the earth) or lava (from outside the earth).

- Volcanoes erupt when gas in the magma brings it close to the earth's surface. We are going to make an active volcano.

Activity 2: Vinegar and baking soda volcano

Hand out paper plates – students can color the plates with the setting they want their volcano to be in (e.g. ocean, beach, grass, fantasy). Hand out empty cups and cups with baking soda. Fill each empty cup with magma (vinegar & food coloring). When each student has all of the supplies and is ready, we will pour the magma into the volcano at the same time and watch them erupt!

- Recap: Magma is inside the earth, it becomes lava when it comes out.

Activity 3 (if time): Volcano coloring

Hand out volcano coloring sheets and recap the difference between magma and lava. Color in the magma and lava, and anything else! If we are out of time, students can take the coloring sheet home.

3. Wrap-up: Sharing Experiences and Building Connections: 10 minutes

- Igneous rocks are made from magma or lava. You can find them all over the place if you look!
- We have a volcano in the Oakland hills! It is in a place called Sibley Volcanic Regional Preserve. However, it has not exploded for 10 million years. You can visit the preserve and see volcanic rocks.

4. Close: 5 minutes

- Thanks and good-bye!
- Clean-up

TOTAL 60 Minutes



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Build your own volcano!

Materials needed:

- * 1-12" or larger plate
- * 1.3oz dixie cup
- * 1/4 cup VINEGAR
- * 1tbsp. baking soda
- * scissors
- * glue
- * construction paper

Step 1:

Cut out the shape drawn on this page. Trace the shape onto construction paper and cut out. Use glue to stick the straight edges of the shape together to form a cone.

Step 2:

Put 1 tablespoon baking soda into dixie cup, and put cup inside the top opening of cone.

Step 3:

Put the volcano on the plate. This will contain the mess!
Pour 1/4 cup vinegar into the cup and watch the volcano erupt.



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Follow-up – After Presentation

Additional resources for future learning:

The site www.geology.com: provides resources for teaching and learning about earth science; contains up to date information about the latest news and discoveries in the field.

Sibley Volcanic Regional Preserve is part of the East Bay Regional Parks District. Includes an unstaffed visitor center and miles of trails that have views of exposed volcanic rock.

<http://www.ebparks.org/parks/sibley>

Reading Connections:

- How Mountains Are Made by Kathleen Weidner Zoehfeld

<http://www.amazon.com/Mountains-Made-Lets-Read-Find-Out-Science/dp/0064451283>

- Igneous Rocks by Melissa Stewart

http://www.melissa-stewart.com/books/earth/bk_igneo.html

- The Best Book of Volcanoes by Simon Adams

<http://www.amazon.com/Best-Book-Volcanoes-Simon-Adams/dp/0753453517>



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