

IGNEOUS ROCKS

Grade Level: 2

Purpose: This lesson focuses on igneous rocks. First review the rock cycle and then explore volcanic activities, observe igneous rocks, and eventually create class volcanoes.

Goals: As a result of this lesson children will understand how igneous rocks are formed.

Objectives:

1. Children will be able to state how igneous rocks are formed.
2. Children will work together with their group to build a volcano.

Background: Igneous rocks are formed when magma either cools below the earth's surface or erupts from a volcano and cools on the ground.

Materials/Preparation:

Rock cycle chart (created in the lesson on Sedimentary Rocks)

Video on volcanoes (see Resources below)

Igneous rock samples

ISM Geology Online GeoGallery

For each volcano made:

- 9 x 12 piece of cardboard
- brown tempera paint
- newspaper to wad up
- paper mache mix
- a small empty container
- tape
- vinegar
- baking soda
- red food coloring

Procedure:

1. Review the steps in the rock cycle. Add information your class suggests to the KWL chart started during the lesson, "Rocks, Rocks, and More Rocks".
2. Emphasize that today's lesson will focus on igneous rocks.
 3. View the video and discuss what happens during a volcanic eruption.
3. Remind the students of the properties they should look for when observing rocks and pass the igneous rock samples for their inspection. Compare them to the sedimentary rocks you observed in the lesson, "Sedimentary Rocks".

4. Break into cooperative groups and create volcanoes. You can use these directions or create volcanoes with your own ideas. You can also create a volcano as a class project instead. This may prove to be more time effective
 - wad up newspaper in various size balls
 - tape them down to the cardboard
 - put the small container in the middle
 - cover the paper balls with paper mache leaving an opening over the container and allow to dry
 - paint
 - when the volcano is completed, place on a large section of newspaper and fill the container 1/2 full with baking soda
 - mix the vinegar and red food coloring
 - pour the vinegar into the container and watch the fun!!!

Extensions:

- Create stories about living near a volcano.
- Plan a luau style party for your volcano eruptions.
- Read myths about Pele and explore how volcanoes have shaped the Hawaiian culture.
- Students will enjoy the activities at <http://library.thinkquest.org/J002289/index.html> It has rock jokes, games, and more information.

Assessment: Have students write a brief description of the volcanic process. It should include the terms magma, lava, and igneous rocks.

Illinois State Board of Education Goals and Standards:

- 12.E.1a:** Identify components and describe diverse features of the Earth's land, water and atmospheric systems.

Lesson Specifics:

Skills - This lesson encourages the Applied Learning Skills of working on teams, communicating, and using technology.

Optimum class size - 16 – 24 students.

Duration - Three sessions, each approximately 45 minutes.

Video Resources

Each is approximately 30 minutes long:

The Magic School Bus Blows Its Top, Scholastic, 1993

Hill of Fire, Reading Rainbow, 1986

Volcano, Eyewitness, Dorling Kindersley producer, 1994

Web Resources

ISM Geology Online - GeoGallery

<http://geologyonline.museum.state.il.us/geogallery>

ThinkQuest Library

<http://library.thinkquest.org/J002289/index.html>