

Proceeding on... Visions of Idaho

GEOLOGY

2

Teacher's Guide Outline

CONCEPT The land is the beginning of all history. We think of the land as a constant, but Idaho's land is always changing. **Geology** focuses on three major geological activities in the state's history: volcanic activity, floods and earthquakes.

STUDENT OUTCOMES After viewing and discussing **Geology**, students will be able to:

1. Identify some of the forces that have changed or will change Idaho.
2. List different ways in which geology can affect daily life.
3. Understand how individuals can take advantage of geological effects.

SUMMARY **Geology** reviews three major types of geological activity. The tape begins with the host, Phyllis Edmondson, asking students to think about how Idaho's land is changing. That leads into a look at geological activity such as lava flows and geysers. There is also a discussion about geothermal energy and its uses.

Not all of Idaho's mountains came from volcanic activity. Phyllis introduces students to the batholith with its diverse mineral accumulations. She asks students to think about the impact the batholith has had on Idaho history.

Idaho's landscape has also been changed by floods. Students learn about three major floods, the Missoula, the Bonneville and the Teton Dam and the aftermath of each one.

The third geological activity reviewed in the tape is an earthquake. Phyllis uses the example of the 1983 Borah earthquake to show what earthquakes do to the land and the people.

Phyllis closes by reviewing the three major geological activities. She challenges students to look around at their environment, and reinforces the idea that Idaho's land is always changing.

PREPARATION EXERCISES

1. Make a volcano with the following recipe: Combine 1 cup flour, 1 cup salt, 1/2 cup water. Shape dough into the form of a volcano. Let dry. Paint with food coloring as desired. Makes enough for one student.
2. Examine different types of rocks. Have students write down words that describe each rock and where they might have come from.

**PREPARATION
EXERCISES
(Cont.)**

3. Have the students stack different layers of clay and use that to show land shifts and uplifts.
4. Lead students in a discussion. Ask the following questions:
What is a volcano? Where are volcanoes found? Have you ever been in an earthquake? Have you seen one on television?

**QUESTIONS
FROM TAPE**

1. What would you think if you saw a river of fire? Or if you saw the earth crack?
2. Have you ever picked up a rock and wondered where it came from? What it's made of?
3. Why do you suppose they call this Craters of the Moon?
4. Why does it look like this?
5. Can you think of another place in or near Idaho where the earth's crust is thin?
6. How do you think people use geothermal water?
7. Can you find the batholith on a map?
8. Is it close to where you live?
9. Can you name any of the changes in the land that resulted from the Missoula flood?
10. Did the Bonneville flood leave any rocks near where you live?
11. Do you know what an earthquake is? What it might feel like?

VOCABULARY

Batholith-A large amount of rock pushed up from beneath the earth's crust but never breaking the surface

Crater-A hollow area that looks like the inside of a bowl

Earthquake-A shaking or trembling of the ground

Erode- To wear or wash away

Geological activity-A movement or action having to do with the earth

Geologist-A person who studies geology

Geology- The science that deals with the earth and its structure, the plants, the animals and the human life on it

Geothermal-Heated by the molten rock underneath the earth's surface

VOCABULARY
(Cont.)

Geysers—An underground pool of hot water that is shot up into the air

Lava—Melted rock that flows out of a volcano

Legacy—Something left behind for the next generation

Magma—Melted rock which flows beneath the earth's surface

Volcano—An opening in the earth's surface through which lava, ash and gases flow

FOLLOW-UP
DISCUSSION
AND
QUESTIONS

1. Discuss what geological features are in your area and what activity formed them.
2. How can geological features affect our lives?
3. What were the three main geological forces presented in the tape and what were the effects of those forces?
4. Discuss the possibility of geological action occurring in your area today. What kind could it be? What would be the effect? How would everyone deal with it?

EXTENSION
ACTIVITIES

1. Gather a group of rocks and try to identify each kind. Discuss where they were found and how they got there.
2. To demonstrate the effects of earthquakes on buildings, have students build sugar cube structures on top of a block of gelatin. Once a structure, however simple or complex, is built, have students tap the gelatin to simulate an earthquake. Have the students try different structures to determine what kind of building has the best chance to hold up during an earthquake.
3. Review how other cultures have explained geological phenomenon by the use of myths and gods. Have students write a mythological story to explain a geological event.
4. Place a number of small rocks in the bottom of an empty ice cream box. Fill with water and freeze. Remove from the container and scrape the "glacier" along the ground. Discuss how glaciers changed the land.

SPECIAL PROJECT *Idaho Relief Map*

Paste outline drawing on a stiff backing such as cardboard. Using different peas and beans, create a montage of Idaho showing the various geological features. Indicate in the legend box which bean or pea stands for which type of feature.

LEGEND

- Mountains**
- Rivers**
- Lakes**
- Reservoirs**
- Plains**
- Desert**
- Other**

