

Contents



The Premise	1
A Word to the Teacher	2
1. Rationale for Self-directed Learning	3
2. The Format.....	6
3. Suggested Readings	7
4. The Interest Development Centre	8
5. Getting Started	9
6. The Unit: VOLCANOLOGY	
UNIT I: Prep to Year Three	11
Suggestions for Adapting the Unit	25
UNIT II: Years Four to Eight.....	26
Bibliography	41
7. Exploring the Arts	43

A Word to the Teacher



Volcanology

The Volcano . . . a source of mystery, fear and curiosity throughout the ages. Once, maidens were sacrificed to quiet the 'angry' mountains. Now, the seismograph records the rumblings of the earth . . . and people are still at the mercy of this devastating response to the forces of nature.

In 1500 B.C. a mountain on Thera, an island in the midst of the Aegean Sea, exploded. It destroyed a beautiful and civilised city and left only pieces of the original island. Mount Vesuvius provided fertile land on its slopes for six hundred years for the prosperous people of Pompeii. In 179 A.D., with some gentle warnings, the mountain erupted, killing perhaps 20,000 people. Vesuvius still rumbles. In 1631, once again, it erupted. This time about 4,000 more people were killed. Mount Etna, on the island of Sicily, has erupted many times. An estimated one million people have been killed by eruptions of this volcano. Mount Krakatoa, on a small island in Indonesia, erupted in 1680, then lay dormant until 1883. Krakatoa exploded with a force greater than any known before in history. Debris fell over an area of 700,000 square kilometres. Thirty-six thousand people were killed. The sea responded to the vibration of the explosion and tsunami destroyed villages in Sumatra and Java with waves 40 metres high.

More recently, attention has been turned to Mount Saint Helens, in the state of Washington. Between the years of 1831 and 1854, the mountain had been quite active. For the next 125 years, it was noted only for its snow-covered beauty. Suddenly, on 20 March, 1980, Mount Saint Helens began to rumble. Volcanologists, with their instruments, rushed to the site to study, measure and speculate. The speculation was that it was ready to 'blow'. Eight weeks later, it did. The force was greater than that of the first atom bomb. The sound was heard for 300 kilometres. In the time since the eruption, Mount Saint Helens continues its activity . . . sometimes gently . . . other times with more vigour.

What is the value of the study of the volcano? Can people really learn to 'read' and interpret the messages the earth is giving? Perhaps a greater question might be . . . will people listen and respond to the message?

Interest Development Centre



Volcanology

The purpose of the Interest Development Centre is to stimulate interest in the topic area. Students need time for browsing and investigation for maximum benefit.

(Beginning ideas . . . you and your students will think of more . . . let parents and other teachers know about the Centre and it will grow without effort.)

BOOKS, VIDEOS, POSTERS, SLIDES ABOUT:

VOLCANOES

VOLCANOLOGISTS

TOOLS OF THE VOLCANOLOGIST

MYTHS AND LEGENDS ABOUT VOLCANOES

VOLCANIC ACTIVITY ON OTHER PLANETS

ART AND EXCAVATION OF UNCOVERED

CITIES

THE CIRCLE OF FIRE

LAVA FLOWS

GEYSERS

EARTH FAULTS

GEOLOGY

ARCHAEOLOGY

PALAEONTOLOGY

EARTHQUAKES

PLANETARY

ALIGNMENT

SAN ANDREAS

FAULT

WEATHER

TSUNAMI

RECORDINGS OF VOLCANIC ERUPTIONS

MAPS, GLOBES

PHOTOGRAPHS

GRAPHS SHOWING SEISMOGRAPH READINGS

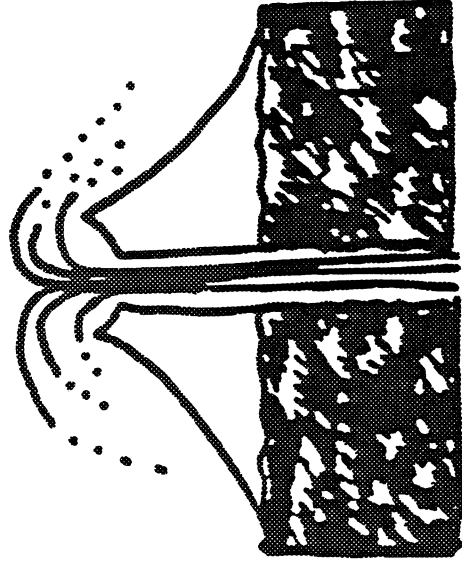
VOLCANIC ROCK

VOLCANIC ASH

EXAMPLES OF POTTERY USING VOLCANIC ASH

MATERIALS, BOOKLETS, FLYERS FROM NATURAL HISTORY MUSEUMS

Find out about Volcanoes



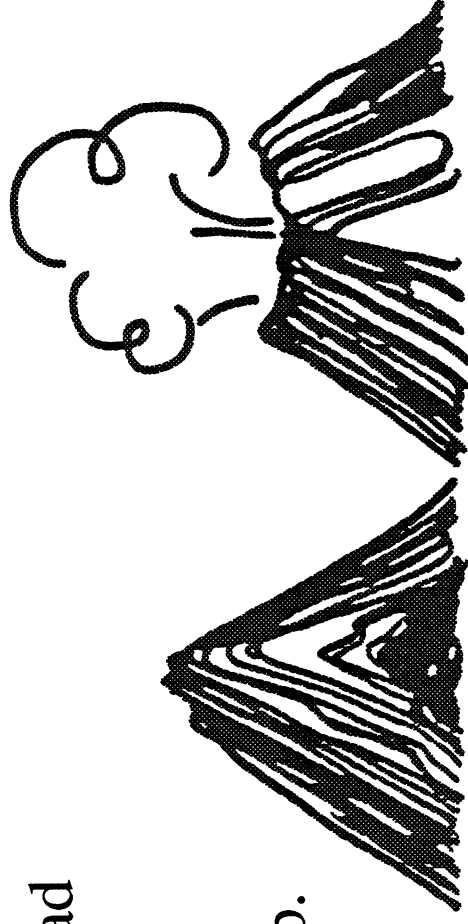
Find some books about volcanoes that look interesting . . .

Get about 5 books if you can.

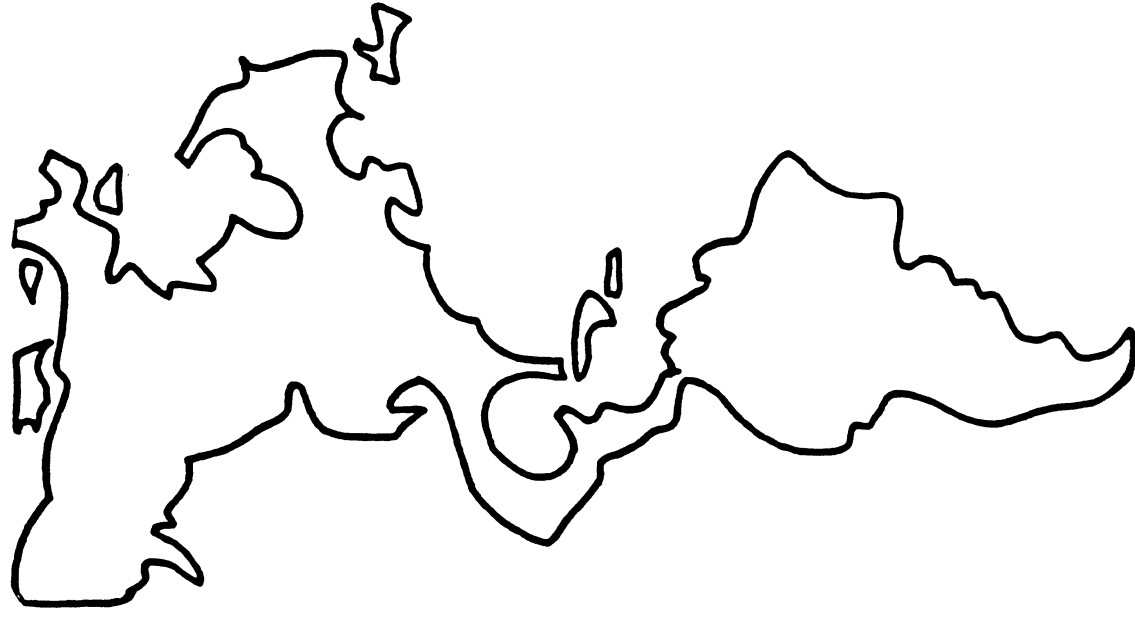
Take some time to study the books.

Look at the pictures carefully and read what you can.

Get help with words if you need help.



1. Now You are Ready to Begin



There are volcanoes all over the world.

Find out the names of a famous volcano in each of these countries:

Japan _____

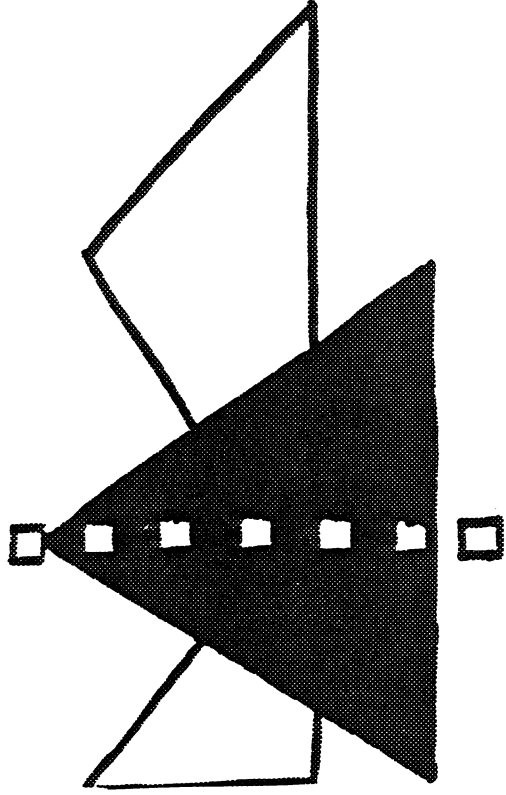
Italy _____

Hawaii _____

United States _____

Mexico _____

2. What Do You Know About Volcanoes ...?

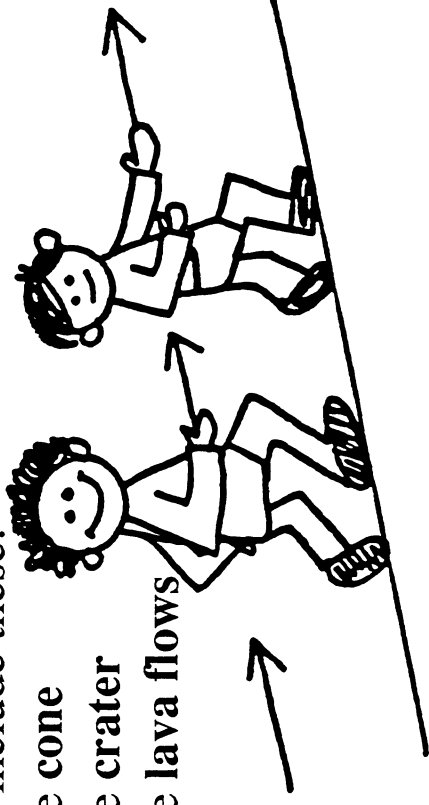


Make a large picture of a volcano.

Label the parts.

Be sure to include these:

- The cone
- The crater
- The lava flows



Is there a **caldera** on your volcano?

Is your volcano **active**?

Do what you can to show that in your picture.

Put a picture of yourself climbing the slope, if you dare!