

Lesson – Volcanoes

THE FOLLOWING VIDEO HAS BEEN APPROVED FOR ALL AUDIENCES
BY THE EARTH SCIENCE TEACHERS ASSOCIATION OF AMERICA, INC

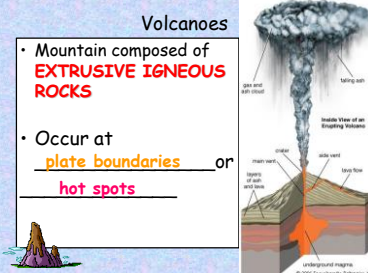
THE VIDEO HAS BEEN RATED

I **INTELLIGENT**
UNDER 15 REQUIRES TEACHER ASSISTANCE
STRONG EARTH SCIENCE LANGUAGE, DETAILED DIAGRAMS, AND SUPER AWESOMENESS

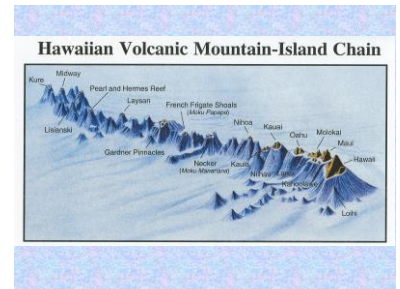
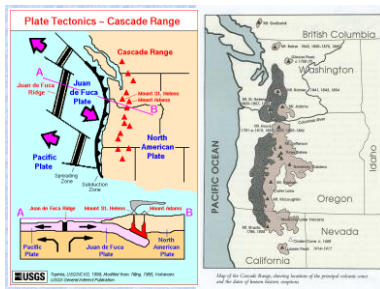
- I can define what a volcano is
- I can describe what is occurring during eruptions & what features are being formed
- I can explain the dangers & how to predict volcanic eruptions
- I know volcano safety

Volcanoes

- Mountain composed of **EXTRUSIVE IGNEOUS ROCKS**
- Occur at **plate boundaries** or **hot spots**



© 2004 Encanto Education, Inc.




- I can define what a volcano is
- I can describe what is occurring during eruptions & what features are being formed
- I can explain the dangers & how to predict volcanic eruptions
- I know volcano safety

DURING ERUPTION:

- GASES & LAVA escape onto EARTH'S SURFACE or ATMOSPHERE
- Exit through opening or vent of a volcano

Soufrière Hills volcano on the Caribbean island of Montserrat. →





Mt. Hverfjall is a 2500 years old tephra crater, that is about 1 km in diameter & 140 meters deep. The round shape of the crater is disrupted by a landslide that occurred at the south edge of the crater during the eruption.



Wherever the lava encountered lakes and wetland, steam explosions formed craters. Such craters are called pseudocraters since they are not outlets for lava but steam.

Rock Features Formed

INTRUSIONS

- Intrusive Igneous rocks from **MAGMA**
- Stays within the **LITHOSPHERE**

Námasarð, Iceland

Geology

Cold ground water seeps down to magma intrusions, where it is heated and transformed into steam, and then comes back to the surface. Along with the steam comes fumarole gas, which contains sulphur hydroxide which is responsible for the hot spring smell most people know. In hot spring areas, sulphur deposits are formed when fumarole gas mixes with air. Besides the sulphur deposits, a mixture of silica and gypsum forms around the fumaroles. In mud pots, fumarole gas rises through surface water, producing sulphuric acid, which makes the water acid. Rock and soil dissolve in this acid water, producing the mud which is typical of mud pots and their surroundings.

EXTRUSIONS

- Extrusive Igneous rock from **LAVA**
- **LAVA FLOWS** occur

Flowing lava engulfs a car of Chief Boyardice, russia!



- I can define what a volcano is
- I can describe what is occurring during eruptions & what features are being formed
- I can explain the dangers & how to predict volcanic eruptions
- I know volcano safety

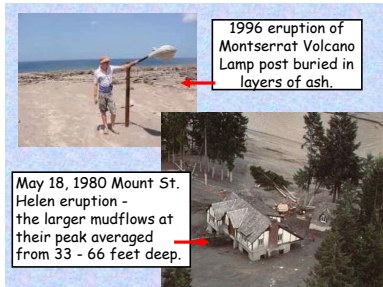
DANGERS of ERUPTION

- Mudslides & Flooding
- **GAS RELEASE:**
-Sulfur, Chlorine, & CO₂
- Volcanic **ASH**
BLOCKING Sun's Ray
(**COOLING** of Earth)

Erupting volcanoes photographed from space

'Lord of the Rings' Volcano

Ash from New Zealand's Mount Tongariro (where many scenes from Lord of the Rings were filmed) covers houses and farmland in this still image taken from video, August 7, 2012. A New Zealand volcano dormant for more than a century (115 years) has spewed boulders and spread an ash cloud over the center of the country, disrupting air traffic but causing no other damage or injuries.



Predicting Volcanic Eruptions

SATELLITES:
-Report on increasing **HEAT** from magma

TILT METERS:
-Increased **SLOPE** as volcano **INFLATES** with magma

Monitor **INCREASES** in

- 1) Elevation
- 2) Width
- 3) Number of **EARTHQUAKES**

- I can define what a volcano is
- I can describe what is occurring during eruptions & what features are being formed
- I can explain the dangers & how to predict volcanic eruptions
- I know volcano safety

Safety

Before

- Have a disaster plan

During

- Get to high ground
- Avoid breathing poisons gas

After

- Cover your mouth and nose.
- Wear goggles to protect your eyes
- Keep your skin covered.

- I can define what a volcano is
- I can describe what is occurring during eruptions & what features are being formed
- I can explain the dangers & how to predict volcanic eruptions
- I know volcano safety

<http://www.youtube.com/watch?v=4aYQixhdWY4>