

VIDEO DISCUSSION GUIDE: VOLCANOES.....

Volcanoes

Chapter 2: Volcano Formation (5:00)

Chapter 3: Types of Volcanoes: Composite Shield, and Cinder Cones (3:47)

Chapter 4: Volcanic Activity and Prediction (5:13)

Chapter 5: Investigation: Using a Tiltmeter to Predict Volcanic Eruption (2:51)

Investigation: Students demonstrate how a tiltmeter shows changes in the slope of the ground near a volcano. (2:49)

Chapter 6: Predicting Volcanic Eruptions (3:24)

Discussion Questions

1. Describe the layers of Earth. (1:47 - 5:01)
2. How can magma escape Earth's interior? (3:00 - 6:32)
3. How are magma and lava alike? How are they different? (4:55 - 6:32)
4. What are some signs that a dormant volcano might become active? (10:32 - 10:52)
5. How do you know when a volcano might erupt? (10:32 - 10:52)
(18:43 - 19:02)
6. How do active volcanoes change Earth? 19:51
22:45

1 What are the layers of Earth?

layers:

inner core } 6100°C
outer core } 5000°C
mantle } extremely hot
crust } less pressure at top
 } earth material
 } is molten
 } thin hard
 } outer layer

Ch. 2 (1:47-5:01)

2 How can magma escape Earth's interior?

- magma in constant slow mo.
- hot magma is less dense than cooler magma
- less dense liquids = always rise
- convection currents
- under pressure, cracks in plates in Earth's crust
- heat + pressure + cracks = eruption

Ch. 2 (3:00-6:32)

3 Compare/Contrast Lava + Magma

hot, has gas

Lava

Magma

- | | |
|--------------------------|----------------------------|
| ◦ outside volca. | ◦ inside volcano |
| ◦ gas not under pressure | ◦ has gas + under pressure |

Ch. 2 (4:55-6:32)

4 What are some signs that a dormant volcano might become active?

- no one can predict a volcano's behavior
- lasers can detect a swelling in crater or on side
- tilt meter to detect swelling
- if rate tilt speeds ↑, it's time to leave the area
- plume of smoke
- warm earth materials

5 How do you know when a volcano might erupt?

- swelling/tilt meter
- lava samples chem comp.
- estimate source of lava
- rock slides, plume of smoke
- poisonous gas (CO₂)
- warm earth materials (soil, lakes, ground)

6 How do active volcanoes change Earth?

- build new land - lava flows
- create fertile soils (22:45)
- destroys land (19:51)