Inside the Earth
Creating Magma

Types of Melting:

- Partial Melting
- Decompression Melting
  - Divergent
  - No increase in temperature
- Addition of Water
  - Convergent
  - Basaltic
- Temperature Increase
  - Granitic
Creating Magma

(Cross section by José F. Vigil from *This Dynamic Planet* — a wall map produced jointly by the U.S. Geological Survey, the Smithsonian Institution, and the U.S. Naval Research Laboratory.)
Types of Magma

- **Basalt (oceans)**
  - Least eruptive
  - Least viscous
- **Andesite**
  - Intermediately eruptive
- **Rhyolite, felsic, granitic (continental)**
  - Most eruptive
  - Most viscous
Viscosity

Viscosity: *Resistance to Flow*

*Increase in viscosity = increase in eruption*
Volcanism

Divergent

- Rift valleys
  - East African Rift
  - Mount Kilimanjaro
- Fissures
- Oceanic ridges
  - Iceland
Volcanism

Intraplate

- Hawaii (hot spot)
- Yellowstone (hot spot)
- Deccan Plateau (fissure)
Volcanism

Convergent

- Ocean to Ocean (Aleutian Chain, Japan, Caribbean)
- Ocean to Continent (Andes, Mt. Rainer)
Volcanism

Mount Pelee
Volcanism
Volcanoes

(Features, Magma, Examples)

Shield

Cinder Cones

Stratovolcanoes (Composite)
What is this an example of?
What is this an example of?
What is this an example of?
Eruptions

Draw a diagram of the process of an eruption.

Use pages 233-234 to discover: What determines the size of an eruption?

Name the two types of lava (pg. 236). What are the differences?

What are the four types of pyroclastic materials? Which is the smallest? Which is the largest?

How are volcanic bombs and volcanic blocks different?
What is another name for a pyroclastic cloud?

Name two famous examples of destruction caused by a pyroclastic cloud.

What type of lava cause different the largest eruptions?

What type of lava causes the smallest eruptions?
Other Hazards

- Lahars
- Tsunamis
- Respiratory health
- Climate
After Eruption

Caldera vs. Craters
Crate lakes
Yellowstone-type calderas
Hawaiian-type calderas
After Eruption

Intrusive Bodies
- Batholiths (Mountain belts)
- Stocks (smaller)
- Dikes (discordant)
- Sills (parallel)
- Laccoliths (Lens shaped)

Extrusive
- Flood Basalt
  - Intraplate
  - Divergent
- Necks
- Pipes
References


[Untitled image of Mauna Loa]. Retrieved March 17, 2015 from http://www.glogster.com/mizgingunes1/mount-mauna-loa/g-6l5h1dj9e49fnrhkhe0jsa0

