Why do I always take the time to read these when all I do is wonder why I read these .... And now I'm reading this again! Geez ... there I go, reading this again!

Volcanoes

Ag Earth Science – Chapter 10.1

10.1 VOCABULARY

viscosity

- A measure of a fluid's resistance to flow

vent

- An opening in the surface of Earth through which molten rock and gases are released

pyroclastic material

- The volcanic rock ejected during an eruption, including ash, bombs, and blocks

volcano

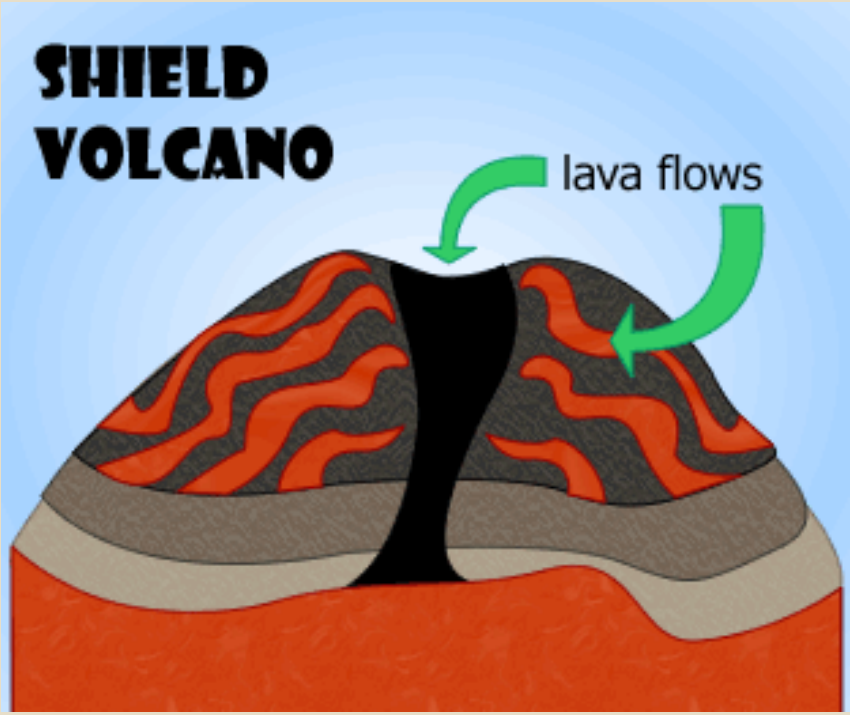
- A mountain formed of lava and/or pyroclastic material

crater

- The depression at the summit of a volcano or that which is produced by a meteorite impact.

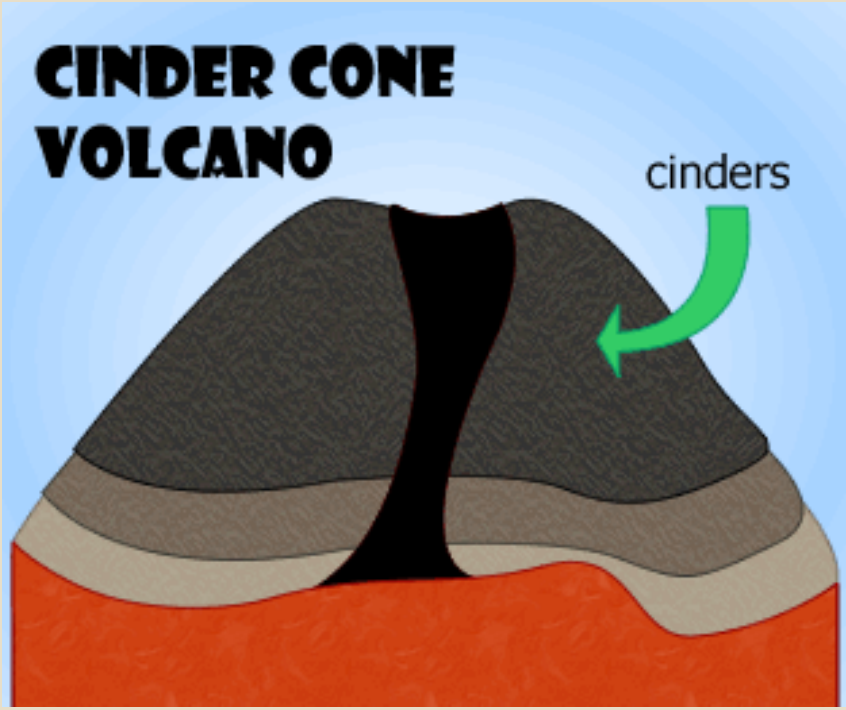
shield volcano

- A broad, gently sloping volcano built from fluid basaltic lava



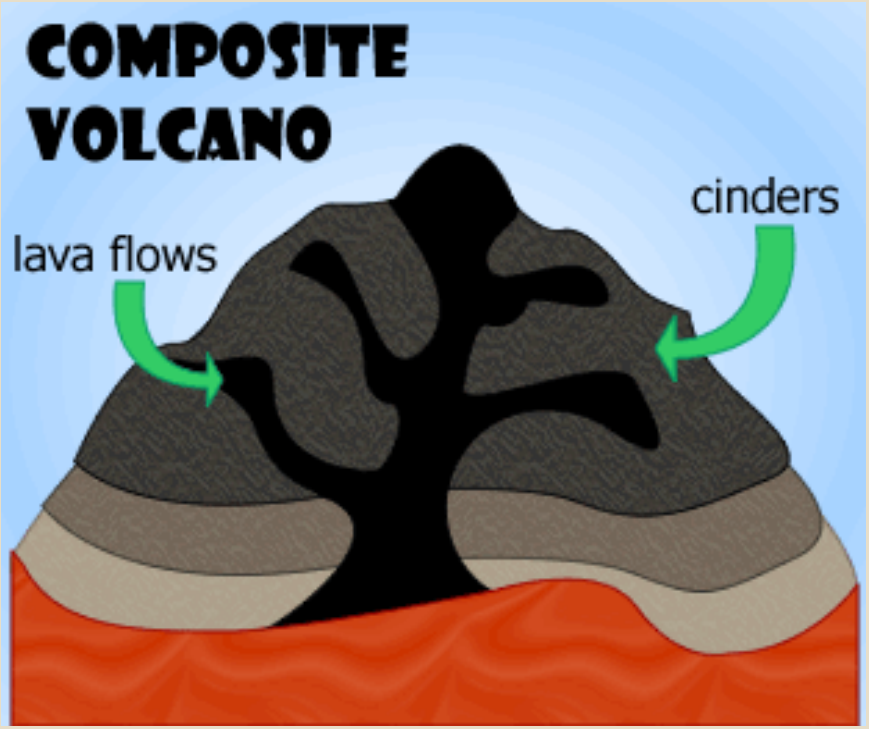
cinder cone

- A small volcano built primarily of pyroclastic material ejected from a single vent



composite cone

- A volcano composed of both lava flows and pyroclastic material



caldera

- A large depression typically caused by collapse or ejection of the summit area of a volcano

"Bummer of a birthmark, Hal."

Factors Affecting Eruptions

- The primary factors that determine whether a volcano erupts violently or quietly include magma composition, magma temperature, and the amount of dissolved gases in the magma.

Factors Affecting Eruptions

- Viscosity – a substance's resistance to flow.
  - *Example* – warm maple syrup vs cool maple syrup
- Dissolved Gases – During explosive eruptions, the gases trapped in magma provide the force to eject molten rock from the vent.
  - Vent – an opening to the surface

Volcanic Material

- Lava Flows
  - Hot basaltic lavas are usually very fluid because of their low silica content.
  - Silica-rich (rhyolitic) lava is often to slow to be visible.

Volcanic Material

- “Pahoehoe” – braids and rope-like

Volcanic Material

- “aa” – rough, jagged blocks (sharp)

Volcanic Material

- Gases
  - Magmas contain various amounts of dissolved gases

Volcanic Material

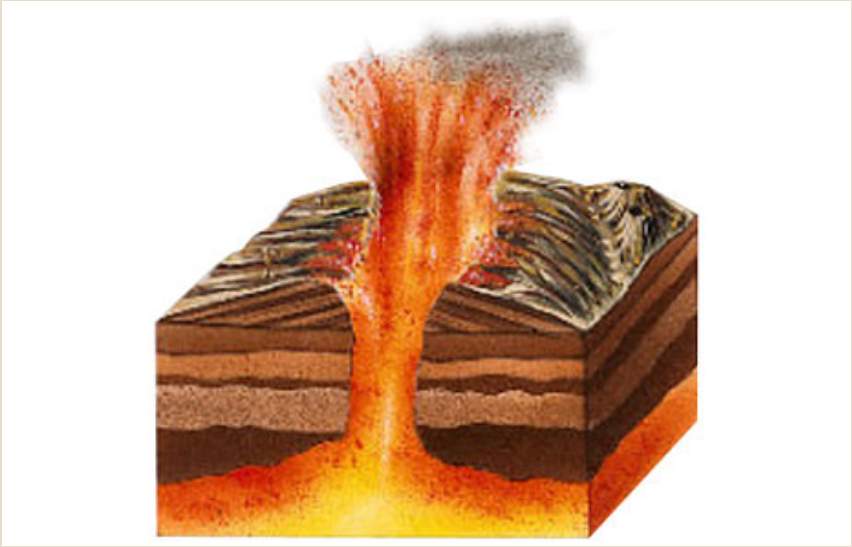
- Pyroclastic Materials
  - Pyroclastic material – the name of particles produced in volcanic eruptions
  - The fragments ejected during eruptions range in size from very fine dust and volcanic ash to pieces that weigh several tons.

Types of Volcanoes

- The three main volcanic types are shield volcanoes, cinder cones, and composite cones.
  - Volcano – Repeated eruptions of lava or pyroclastic material often separated by long inactive periods eventually building into a mountain.
  - Crater – steep-walled depression on the summit of a volcano

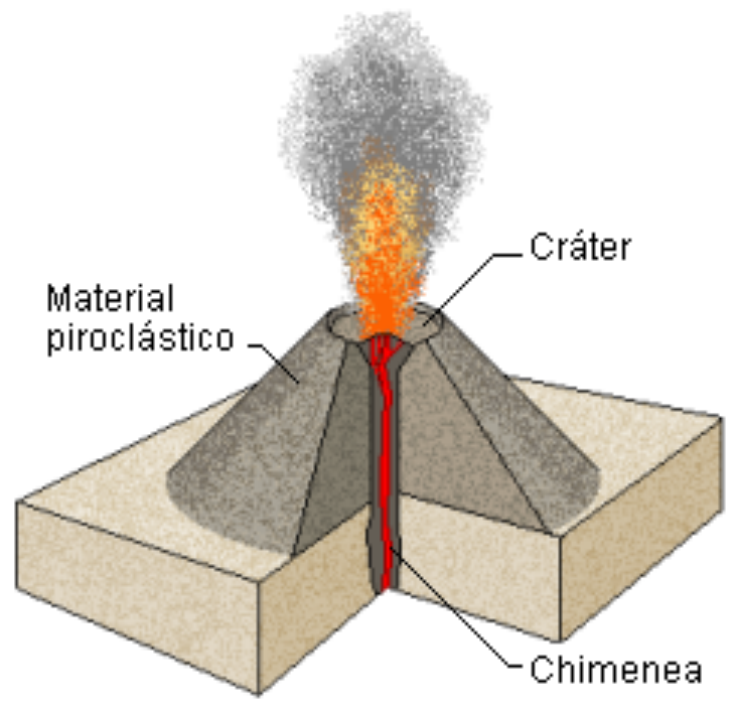
Types of Volcanoes

- Shield Volcano
  - Produced by the accumulation of fluid basaltic lavas. (broad, slightly domed)



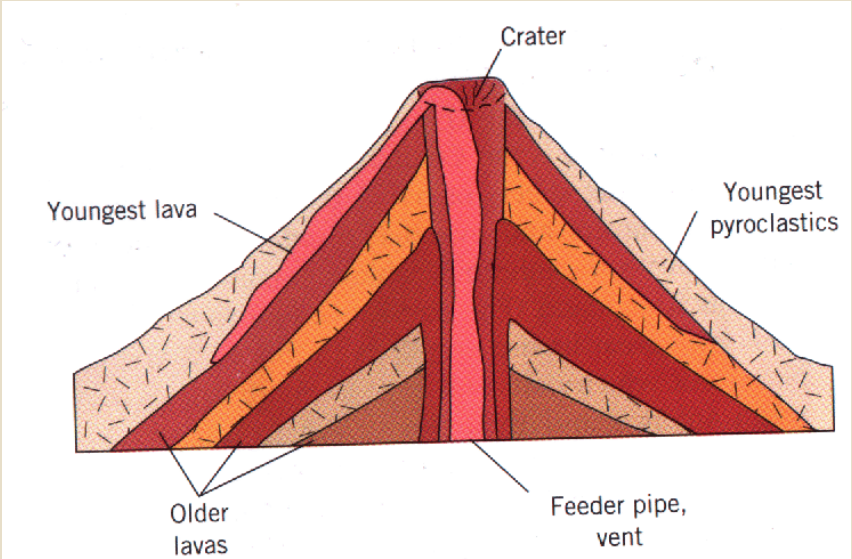
Types of Volcanoes

- Cinder Cones
  - Ejected lava fragments the size of cinders, which harden in the air



Types of Volcanoes

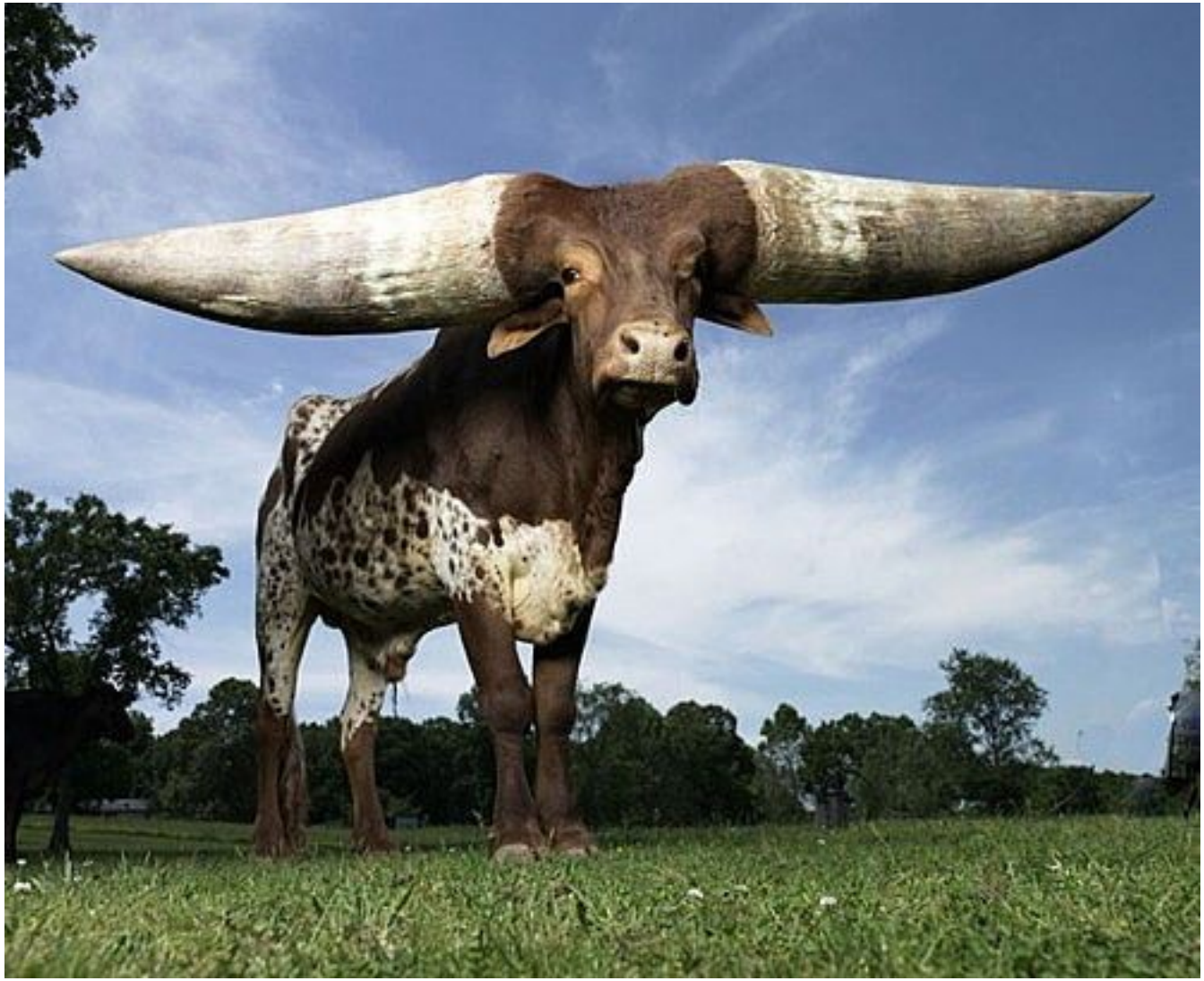
- Composite Cones
  - a large, nearly symmetrical structure composed of layers of both lava and pyroclastic deposits



Other Volcanic Landforms

- Calderas – a large depression in a volcano

- Necks and Pipes – Most volcanoes are fed magma through conduits, called pipes, connecting magma chamber to the surface.

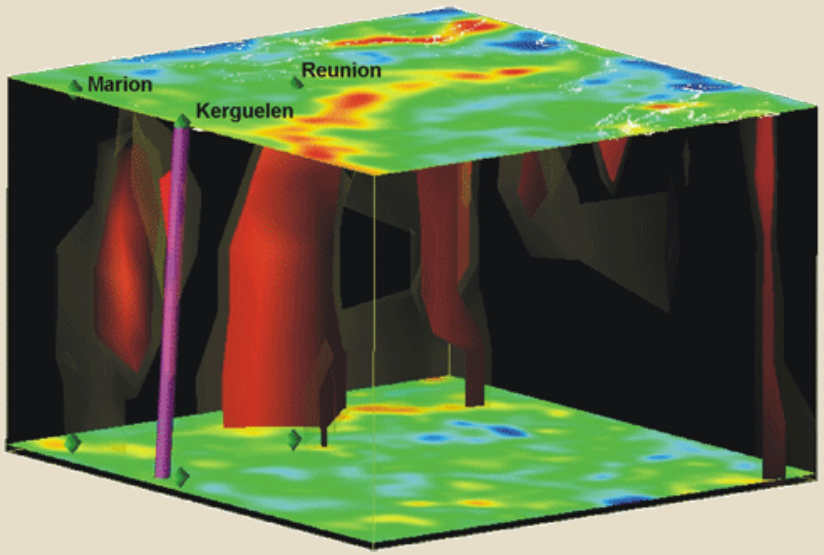


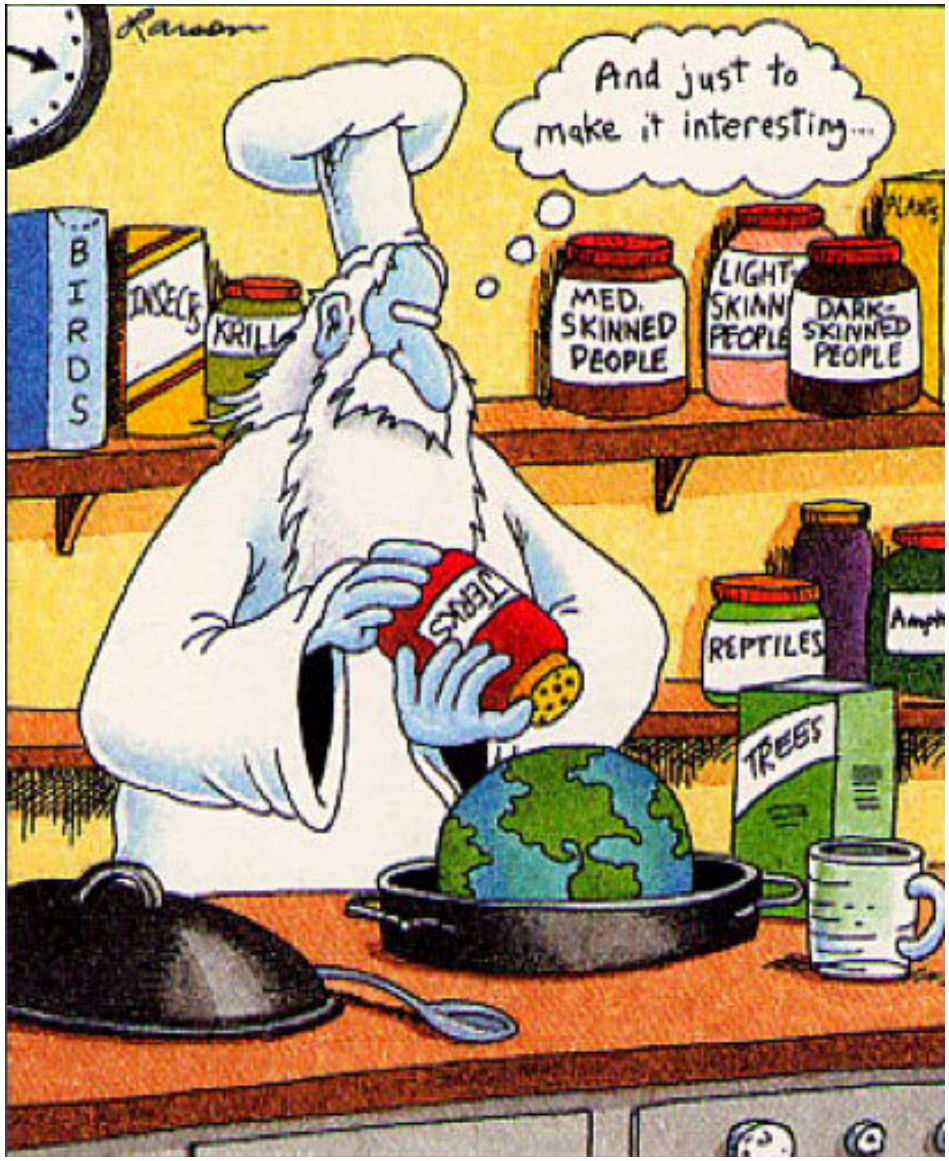
Ag Earth Science – Chapter 10.3

10.3 VOCABULARY

intraplate volcanism

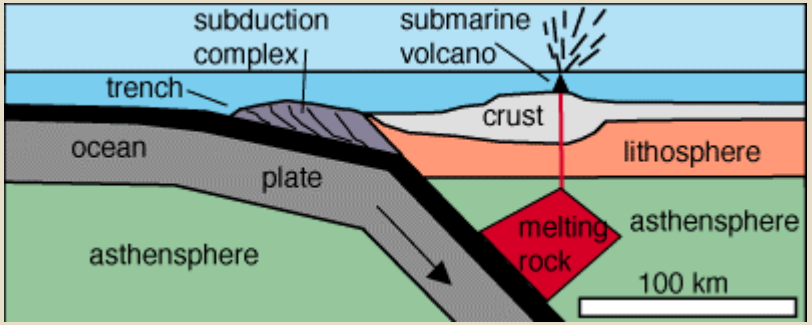
- Igneous activity that occurs within a tectonic plate away from plate boundaries




And just to make it interesting...
BIRDS
INSECTS
KRILL
MED. SKINNED PEOPLE
LIGHT-SKINNED PEOPLE
DARK-SKINNED PEOPLE
PLANTS
REPTILES
TREES

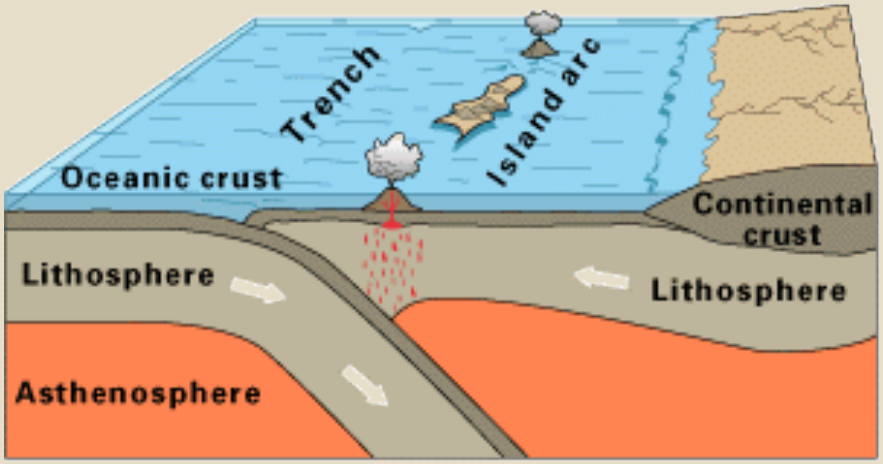
Convergent Plate Boundaries

- The basic connection between plate tectonics and volcanism is that plate motions provide the mechanisms by which mantle rocks melt to generate magma.



Convergent Plate Boundaries

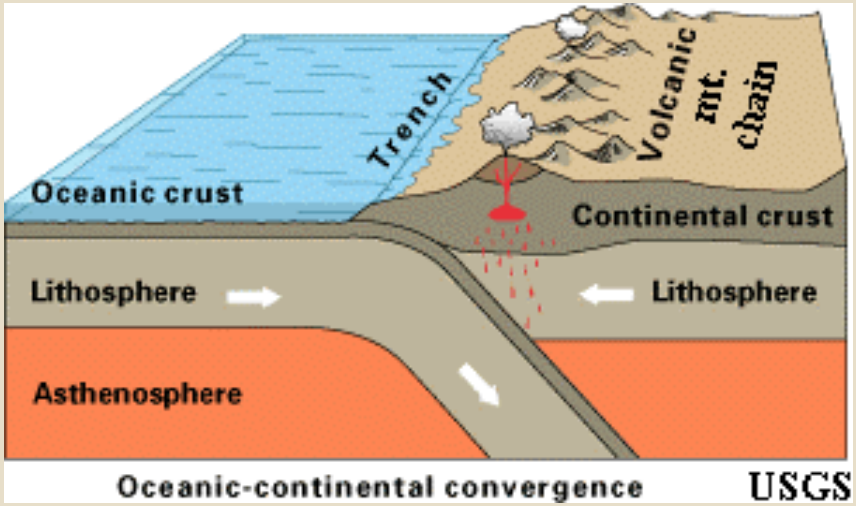
- <u>Ocean-Ocean</u>
  - Volcanism at a convergent plate where one oceanic slab descends beneath another results in the formation of a chain of volcanoes on the ocean floor.



Oceanic-oceanic convergence

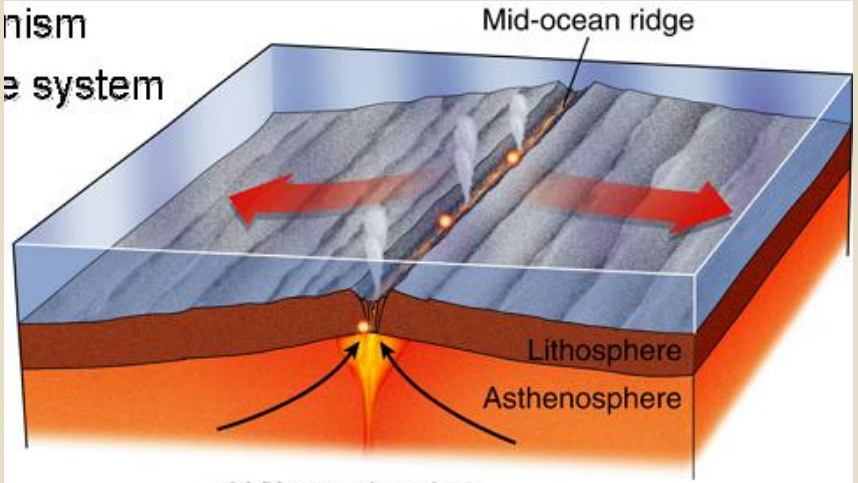
Convergent Plate Boundaries

- <u>Ocean-Continent</u>
  - Volcanism associated with convergent plate boundaries may also develop where slabs of oceanic lithosphere are subducted under lithosphere to produce a continental volcanic arc.



Divergent Plate Boundaries

- Most magma is produced along the oceanic ridges during seafloor spreading.



(a) Divergent boundary

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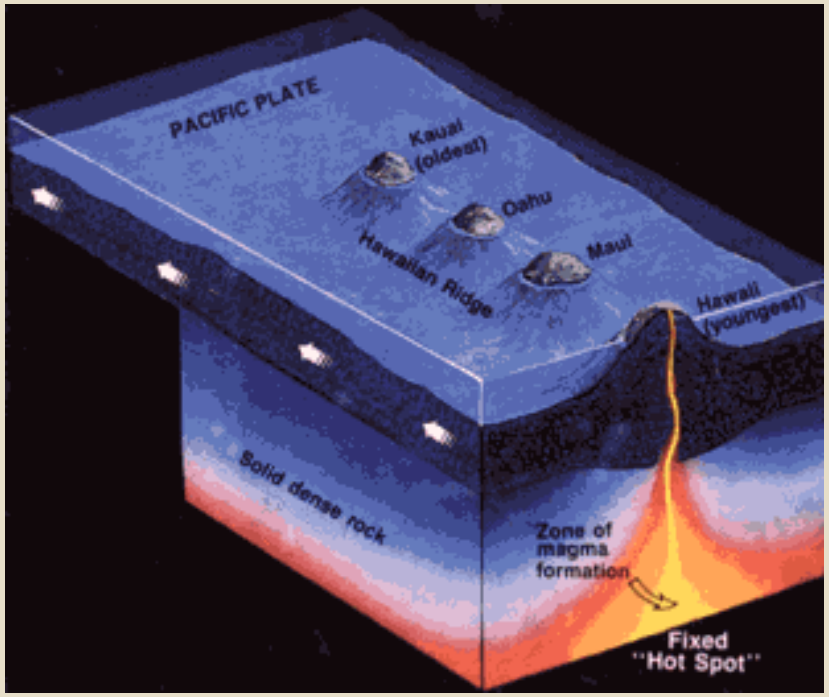
Intraplate Igneous Activity

- Intraplate volcanism occurs within a plate, not at a plate boundary.
  - *Example* – Hawaii's Kilauea volcano.
- Most intraplate volcanism occurs where a mass of hotter than normal mantle material called mantle plume rises towards the surface.



That's Random