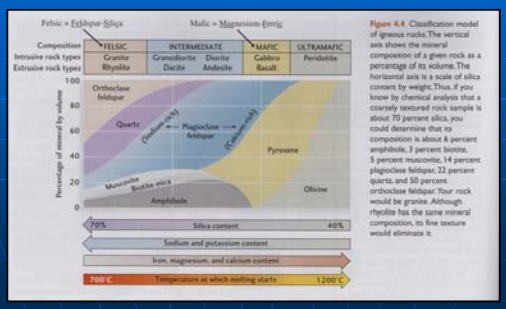
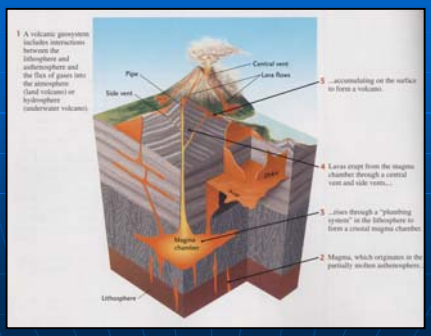
Volcanic/ Extrusive Igneous Rocks

Classification of Igneous Rocks



Volcanic System



Why do Volcanoes Erupt?

- Gases are dissolved in the magma fluid under the high pressures found at depth in the interior of the Earth.
- As the magma rises the pressures on it decrease and the gases start to come off the fluid.
- If that process happens rapidly it will cause an eruption

Magma Erupts onto the Earth's Surface as:

1)Lava Flows 2)Pyroclastic Debris

Lava Viscosity Controlled by:

1) Temperature
2) Composition (silica content)
3) Gas content

Surface Texture of Lavas of Different Viscosity (pahoehoe & aa)

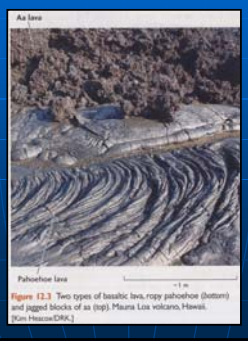


Figure 12.3 Two types of basaltic lava, ropy pahoehoe (bottom) and jagged blocks of aa (top). Mauna Loa volcano, Hawaii. [Kim Heacox/DRK.]

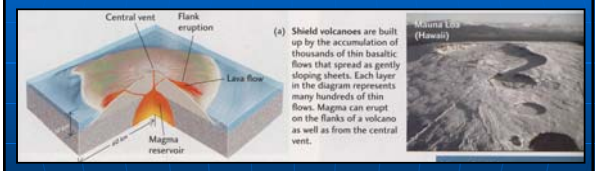
Vesicular Texture in Lava Flow

Figure 12.6 Vesicular basalt sample. [Glenn Oliver/Visuals Unlimited.]

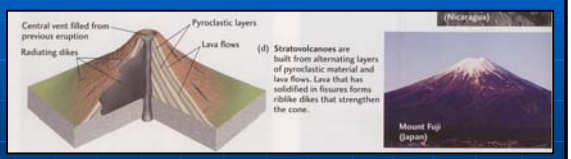
Pyroclastic Debris: 1) Tephra 2)Pyroclastic flow

Figure 12.7 Pyroclastic eruption at Arenal volcano, Costa Rica. [Gregory G. Dimijian/Photo Researchers.]

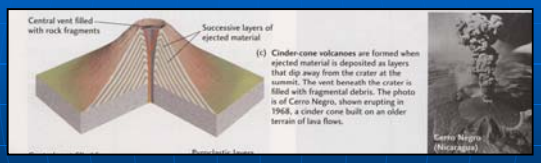
Volcano Types: Shield Volcano



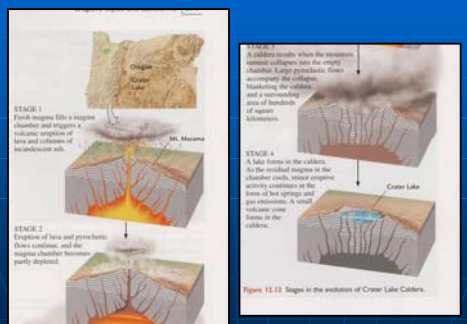
Volcano Types: Stratovolcano



Volcano Types: Cinder Cone



Caldera Formation



World Distribution of Volcanoes

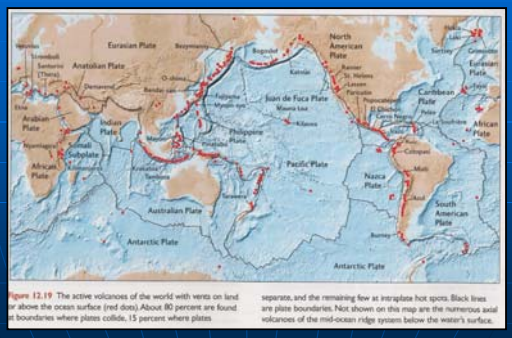
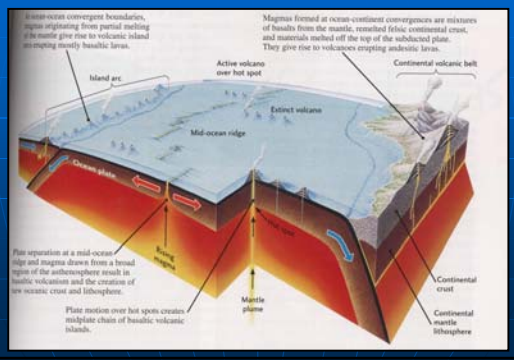


Plate Tectonic Model of Volcanism



Hotspots