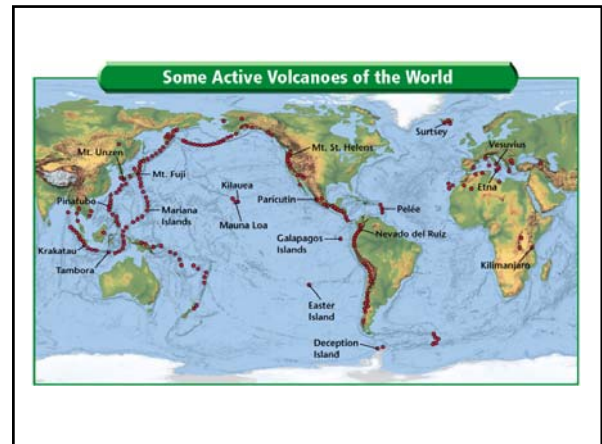
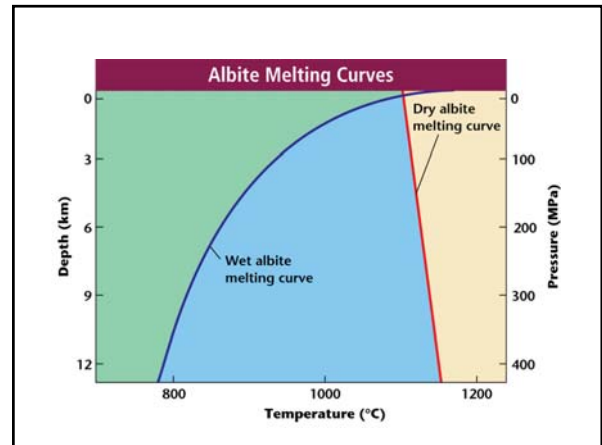


Chapter 18 Volcanic Activity

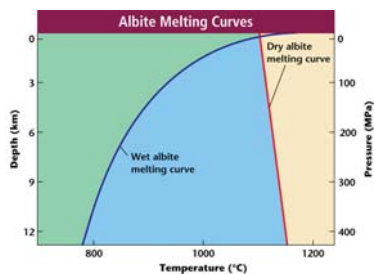


Magma

- Formed from mixture of
 - Molten rocks
 - Dissolved gases
 - Mineral grains
- Melting point varies depending on
 - Type of rock - recall fractional crystallization concept
 - Pressure - direct relation
 - Water content - inverse relation

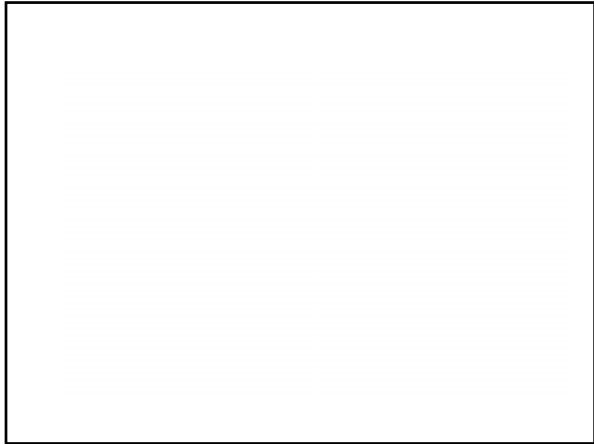


What does the presence of water do to the melting point of rocks?



Types of Magma

- Basaltic
 - mid ocean ridges, hot spot zones
 - Molten upper mantle / ocean floor crust
 - Low silica and gas content
 - Flows easily
 - Gentle eruptions
 - Mauna Loa, Kilauea, Iceland

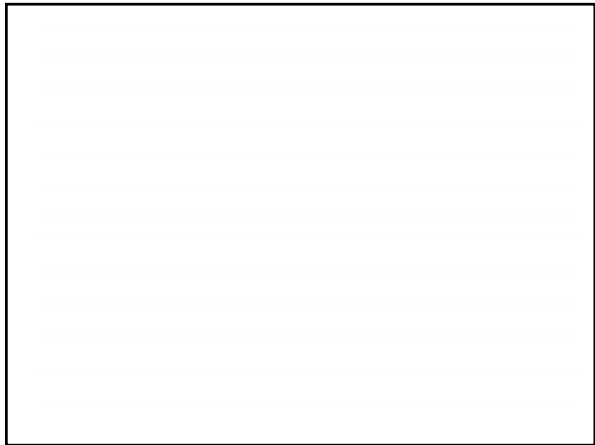


Types of Magma

- Andesitic
 - Continental-Oceanic subduction zones
 - Molten ocean sediments / oceanic crust
 - 60% silica and intermediate gas content
 - Resists flow
 - Intermediate eruptions
 - Mt. Saint Helens, Mt. Ranier, Andes Mtns.

Types of Magma

- Rhyolitic
 - Continental margins, continents
 - Molten continental crust
 - High silica content / high gas content
 - Most flow resistance
 - Violent eruptions
 - Mount Saint Helens, Yellowstone



Types of Magma

- Viscosity
 - The ability of a substance to resist flow
 - Thickness / thinness of a substance
 - Try to order these by increasing viscosity
 - Liquid soap, water, petroleum jelly, molasses
- Factors impacting viscosity
 - Silica
 - Water content
 - Gas
 - Temperature
- High viscosity magma allows pressure to build resulting in violent eruptions