**Study Guide: plate tectonics, volcanism, geologic time**

* **Convection Currents**
* **Lithosphere**
* **Hydrosphere**
* **Atmosphere**
* **Biosphere**
* **Asthenosphere**
* **Mantle**
* **Core**
* **Crust**
* **Convergence**
  + **Oceanic-oceanic**
  + **Continental-oceanic**
    - **Subduction, trench formation**
  + **Continental-continental**
    - **Orogenies**
      * **Folding (synclines, anticlines, monoclines)**
* **Divergence**
  + **Mid-ocean ridge (pillow basalts) (seafloor spreading)**
* **Transform**
  + **San Andreas Fault**
* **Faulting**
  + **Normal: Tension**
  + **Reverse: Compression, Thrust**
  + **Strike-slip**
* **Pangaea (alleghany orogeny: birth of Pangaea)**
  + **Central Pangaea Mountains**
* **Alfred Wegner-Continental Drift Theory, Horst & Graben**

**Volcanism**

* **Composite**
* **Shield**
* **Cinder cone**
* **Complex**
* **Mafic vs felcic**
* **Pyro clastic materials**
* **Ring of fire**
* **Lahars**
* **Mudflows**
* **Caldara**
* **Nuee ardante**
* **Plutons, batholiths, laccoliths, sills, dikes, other igneous flows**
* **Accretion**

**Geologic time**

* **Eons: larger than eras, cover much more time**
  + **Precambrian supereon encompasses, Hadean, Archean, Protoerozoic…all prior to Cambrian, first four billion years of the planet!**
* **Eras: Paleozoic, Mesozoic, Cenozoic**
* **Epochs: smaller periods within an era, more commonly used by paleontologists**
* **Pre-paleozoic: stromatolites…fossilized blue-green algae colonies**
* **Paleozoic: Oldest (age of life, to begin with, at least)**
  + **Almost all life was based in the water!**
* **Mesozoic: age of lizards**
* **Cenozoic: age of mammals**
* **Extinctions and major events**
  + **Cambrian explosion of life 540 mya**
  + **Ordovician-Silurian extinction: 440 mya small marine organisms died out**
  + **Devonian ext: (365 mya)tropical marine organisms died out…major climatic change**
  + **Permian-Triassic: 250 mya**
  + **Cretaceous-Tertiary: 65 mya Chixulub meteor**
  + **Chesapeake Bay impact crater…only 35 mya (late Eocene)**