Earth Science 11
Unit 2 – The Geology of Earth
Day 1 – Earths History

Name: Schaub

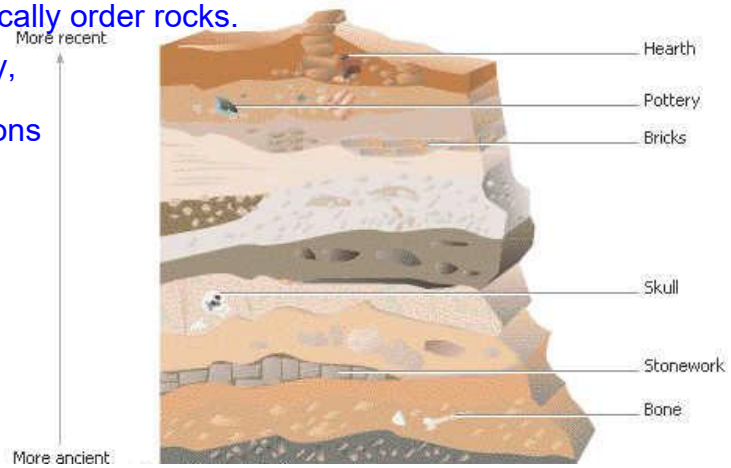
Date: _____

Block: _____

Geologist/Geophysicist/Earth Scientist: Primary goal is to interpret Earth's history. Rocks record geological events and evidence of ancient life forms.

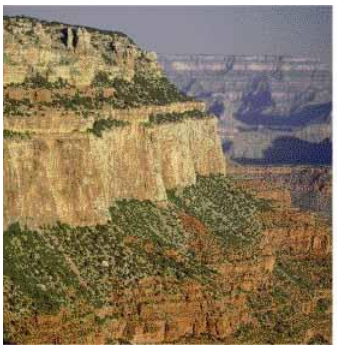
Uniformitarianism: Geological processes of today are similar to those of the past. "The present is the key to the past."

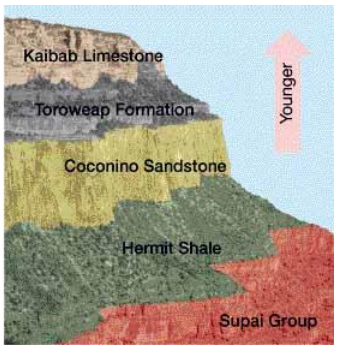
Relative Dating: Method geologists used to chronologically order rocks. Law of superposition, principle of original horizontality, principle of cross-cutting, unconformities, and inclusions all help determine the relative ages of rock layers



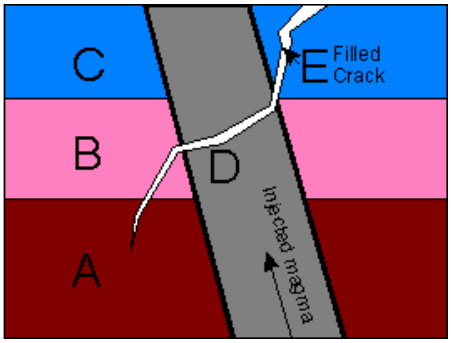
Law of Superposition: Sequence of sedimentary rock layers with younger rocks on top of older rock layers

Principal of Horizontality: Sediments are deposited in relatively horizontal layers Erosion and gravity tends to flatten everything down over time.

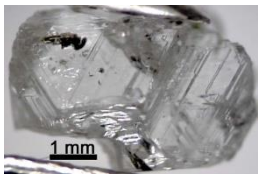




Principal of Cross-Cutting: Magma intrusions are younger than the rocks they cut through. Occurs near present and past geological active zones

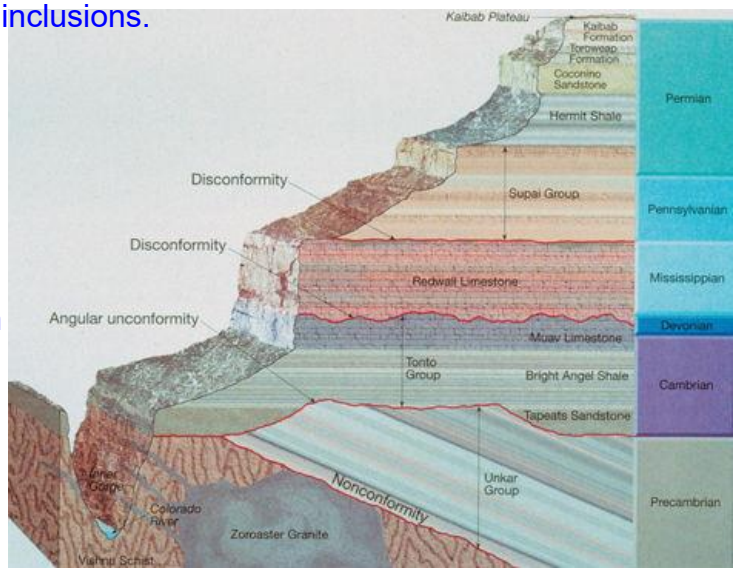


Inclusions: Pieces of rock inside another are older than the rock they are in. Example is diamond inclusions.



Unconformities: Break in the rock record due to erosion or lack of deposition

Geologists determine, which time intervals are not present in the rock layers



What, when, where, how?

Fossils: Remains, imprints, or traces of once-living organisms preserved in rock

Fossils are formed by the conditions in which they died and how it was buried.

Radioactivity: Unstable atomic nuclei spontaneously break apart, or decay, releasing energy

Three types of radioactive decay: ~~Alpha emission~~ Beta emission ~~Electron capture~~

Half Life: Amount of time necessary for one half of the nuclei in a sample to decay to its stable isotope

Isotope: Form of an element (varies in the number of neutrons).

Carbon-14 Dating: When an organism dies, the amount of C-14 gradually ~~decreases and decays.~~ The ratio between Carbon-14 and Carbon-12 informs scientists the ~~amount of half-lives.~~

Half-life of C-14 is 5730 years. Used to date geological events up to 75,000 years