

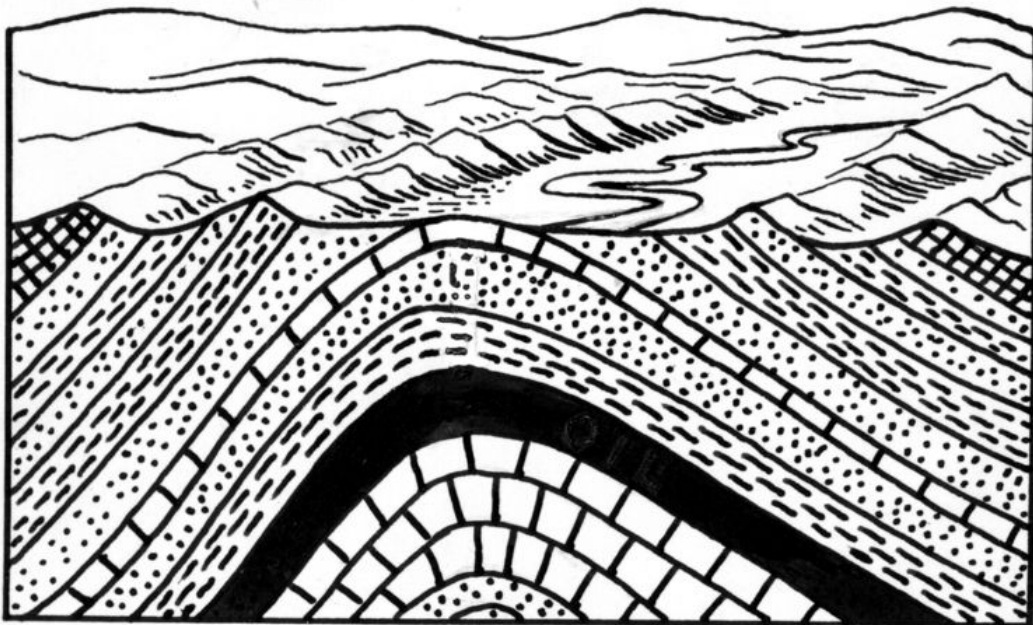
Geologic Principles

RELATIVE GEOLOGIC TIME

Two kinds of time

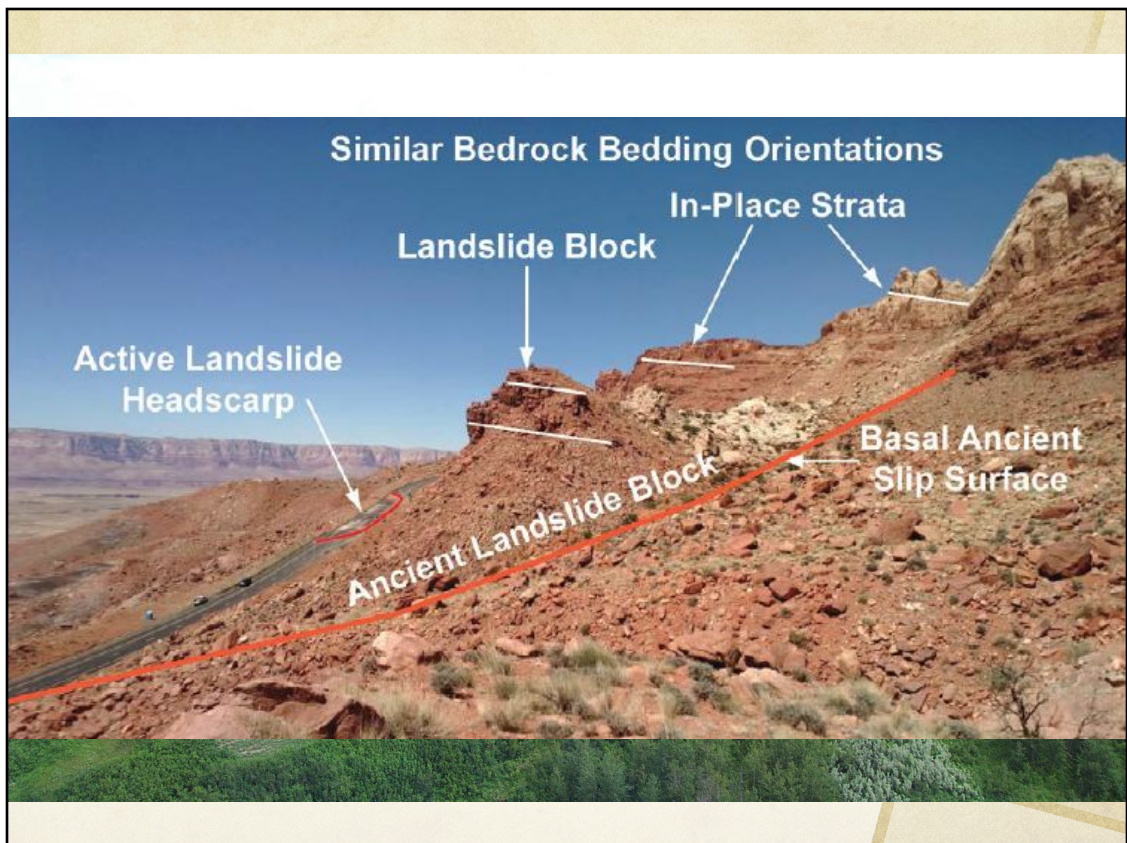
- **Relative Time:** Compares the age of one rock, layer or life form to another **without** using numbers:
 - i.e. older, younger, before or after
- **Absolute Time:** Describes the age of a rock layer or life form **using** numbers:
 - i.e. 10 years old, 25 million years ago

Our Goal: Tell the Geologic
History of these rocks.



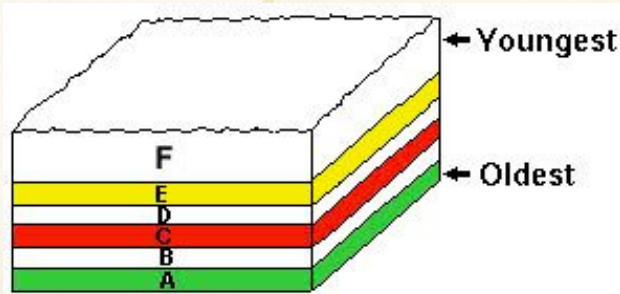
Uniformitarianism

- The concept that current geological processes explain all past geological occurrences.
 - What is happening now is the same as what happened in the past.



The Law of Superposition

- Superposition
 - Oldest rock layers are on the bottom
 - Youngest rock layers are on the top
 - As long as they have not been disturbed



Original Horizontality

- Sediments are deposited in horizontal layers.
- It is only because of uplift that layers become tilted, faulted, and /or folded.

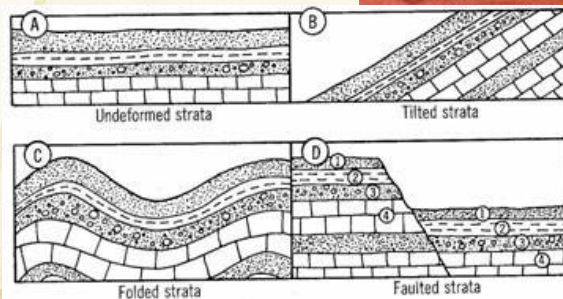
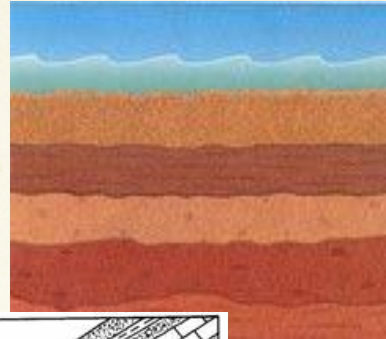
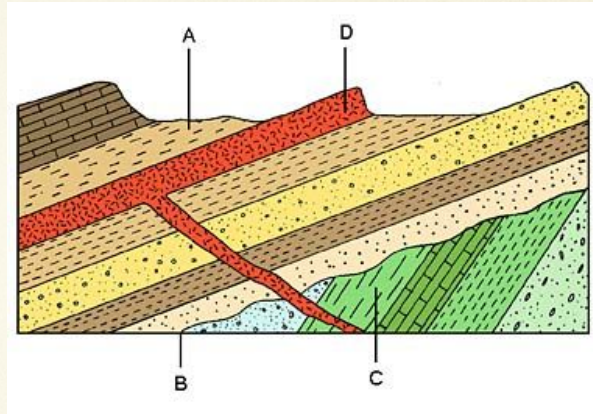


Figure 12-1. Three types of deformed horizontal strata. The numbers in Diagram D mark strata that were originally continuous.



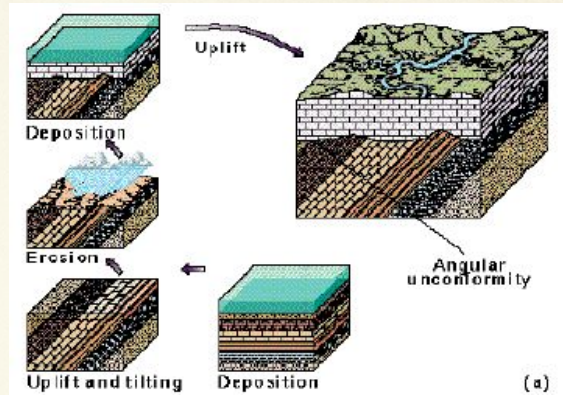
Cross-cutting Relationship

- If a layer cuts across other layers, it must be younger than the layers it cuts across.
 - This includes igneous rocks, faults, folding, uplift, etc



Unconformity

- An ancient erosion surface
 - Ancient land surface
- Represents missing time



Unconformity

