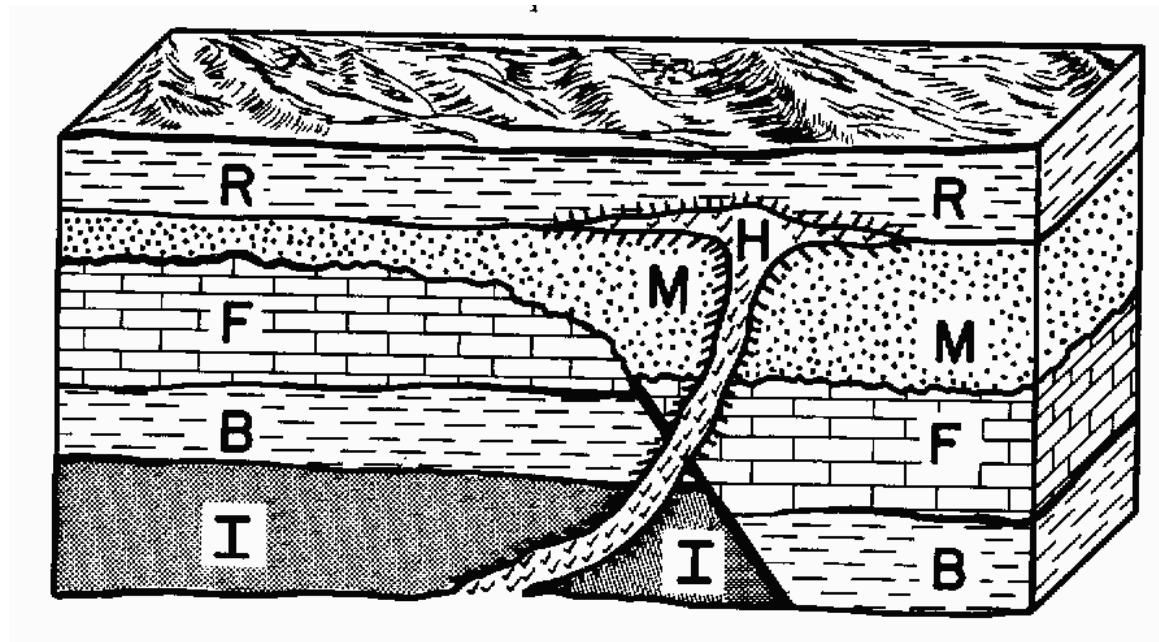


Biology  
Relative Dating Worksheet



1. How does the rock layer H compare to rock layer M? Why?
2. How come the rock layers on the left side of the picture do not line up with the rock layers on the right side of the picture?
3. When did the event described in #2 relatively occur? Why?
4. If a particular fossil was found in Rock Layer F (on the left side of the picture) and another fossil was found in rock layer M on the right side of the picture, which one would be older? Why?
5. Of the layers shown, which layer is probably NOT a sedimentary rock layer?
6. Which rock layer would you NOT expect to find fossils? Why?
7. If a particular fossil was found in Rock Layer R on the right side of the picture and another fossil was found in Rock Layer R on the left side of the picture, how would their ages compare? Why?
8. List the rock layers from youngest to oldest relative ages.

## Rules for Relative Dating

### Determining the Age Relationships

#### Among Layers and Structures from Geologic Cross Sections

1. **Law of Original Horizontality** - Sedimentary strata and lava flows are deposited in horizontal sheets. If these layers are not horizontal, subsequent movements have occurred.
2. **Law of Lateral continuity** - Strata and lava flows extend laterally in all directions and pinch out at the edge of their deposition.
3. **Law of Superposition** - In an undisturbed sequence of strata or lava flows; each layer is older than the one above and younger than the one below.
4. **Law of Inclusions** - Inclusions are rocks, crystals, or fossils contained in another type. Any inclusion is older than the rock that contains it.
5. **Law of Cross-Cutting** - any feature that cuts across a rock or sediment must be younger than the rock or sediment through which it cuts. Ex. Fractures, faults, and igneous intrusions.
6. **Law of Unconformities** - Unconformities represent gaps in geologic time when layers were not deposited or when erosion removed the layers.
  - a. *Disconformity* - Unconformity between parallel layers.
  - b. *Angular Unconformity* - Tilted strata are overlain by younger more parallel strata.
  - c. *Nonconformity* - Sedimentary layers deposited on igneous or metamorphic rock.
7. **Faunal succession** - Fossil organisms succeed one another in a definite, irreversible, and determinable order.
8. **Index Fossils** - Use to correlate rock sequences from different locations.
  - a. Must have lived for a short geologic period of time.
  - b. Must have had a wide geographic range.
  - c. Must be easily identified.