

Name: _____

Relative Dating Worksheet

Principles of Geology:

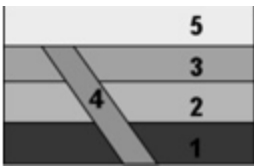
- **Law of Superposition:** The youngest layer of rock is on the top. The oldest layer of rock is on the bottom
- **Law of Original Horizontality:** All sedimentary rocks are deposited flat initially. If you find them at an angle, they have been moved
- **Law of Cross-cutting relationships:** igneous rocks or faults that “cut” into other rocks are the youngest. (the “other rocks” had to be there before they could get cut by anything)



1. Which of these layers to the right is the youngest? _____

2. How can you tell? _____

3. What principle of geology does this relate to? _____

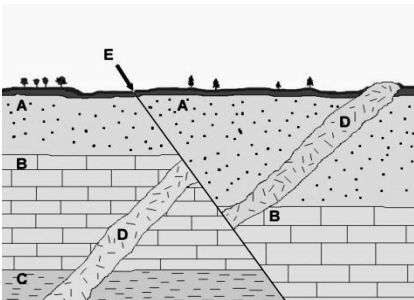
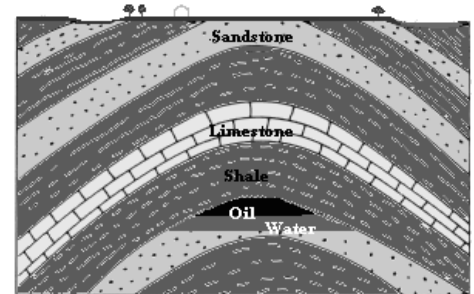


4. When did layer “4” occur? Before _____ but after _____

5. What principle of geology teaches that concept? _____

6. What caused these layers to bend? _____

7. Which principle of geology did you use to determine what happened? _____



8. What happened first: D or E? _____

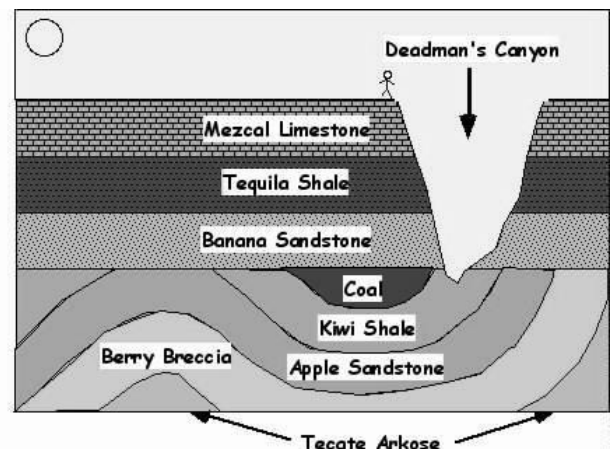
9. Which rock layer was put down *last* (A, B, C) __

10. Which way did the rocks on the right move? (Circle) upward or downward

11. Which happened first: (circle) the Coal layer, the Banana Sandstone, or the erosion of Deadman’s canyon?

12. What happened to the top of the curvy rocks beneath the Banana Sandstone? _____

13. Why are the rocks on the bottom folded but ones on top are not? _____

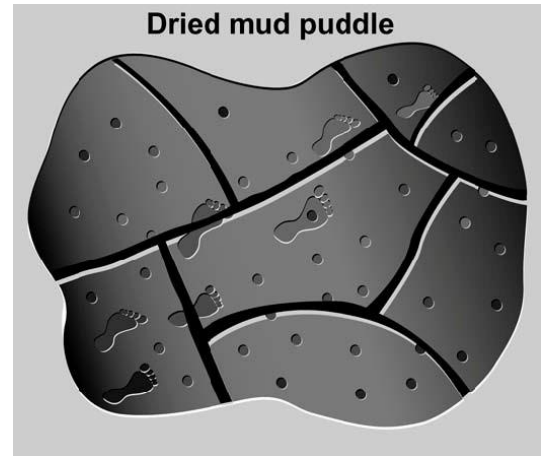


Sequencing events after a thunderstorm

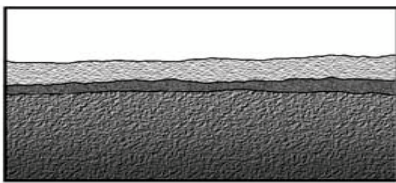
Carefully examine this illustration. From the clues in the illustration, sequence the events listed above in the order in which they happened.

It contains evidence of following events:

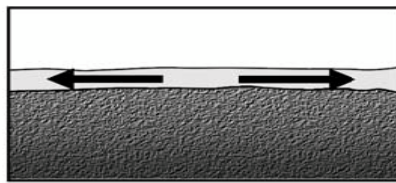
1. _____ The baking heat of the sun caused cracks to form in the dried mud puddle.
2. _____ A thunderstorm began.
3. _____ The mud puddle dried.
4. _____ A child ran through the mud puddle.
5. _____ Hailstones fell during the thunderstorm.



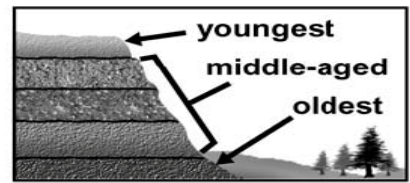
Match each principle to its explanation. Write the letter of the explanation in the space provided under each graphic.



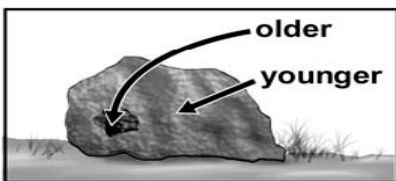
_____ **Original Horizontality**



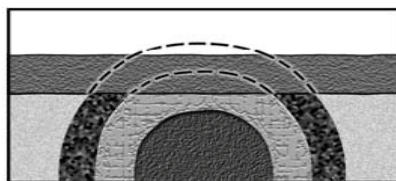
_____ **Lateral Continuity**



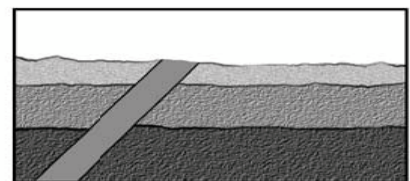
_____ **Superposition**



_____ **Inclusions**



_____ **Unconformities**



_____ **Cross-Cutting Relationships**

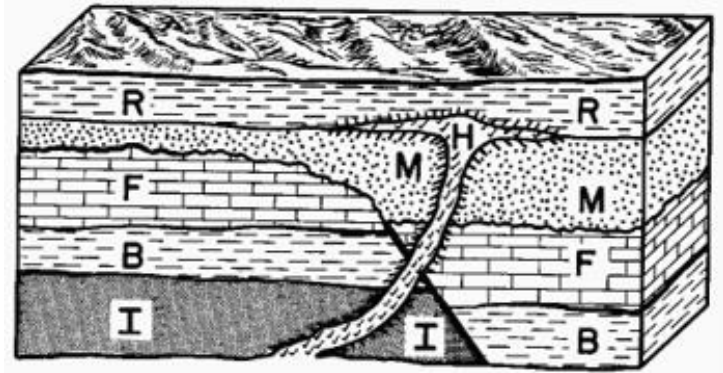
Explanations:

- a. In undisturbed rock layers, the oldest layer is at the bottom and the youngest layer is at the top.
- b. In some rock formations, layers or parts of layers may be missing. This is often due to erosion. Erosion by water or wind removes sediment from exposed surfaces. Erosion often leaves a new flat surface with some of the original material missing.
- c. Sediments are originally deposited in horizontal layers.
- d. Any feature that cuts across rock layers is younger than the layers.
- e. Sedimentary layers or lava flows extend sideways in all directions until they thin out or reach a barrier.
- f. Any part of a previous rock layer, like a piece of stone, is older than the layer containing it.

1. List the rock layers, oldest to youngest.

2. Layer H is _____ in comparison to rock layer M?

3. What caused the rock layers on the right side of the picture to drop?



4. When did the event described in #3 relatively occur? Before _____ but after _____

5. 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?**

6. What is layer H made of? _____

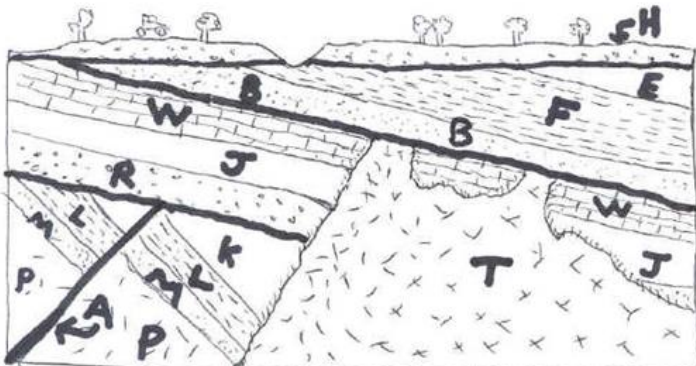
Archaeologists use different methods to date artifacts and sites. Dating methods can be divided into two categories: Radiometric dating and relative dating.

- **Radiometric dating** methods try to find a specific year or time period for a site or event (Keywords: dates, specific events, and time period names).
- **Relative dating** means that an artifact or site's age is compared to other artifacts and sites (Keywords: older, newer, before, after, etc).

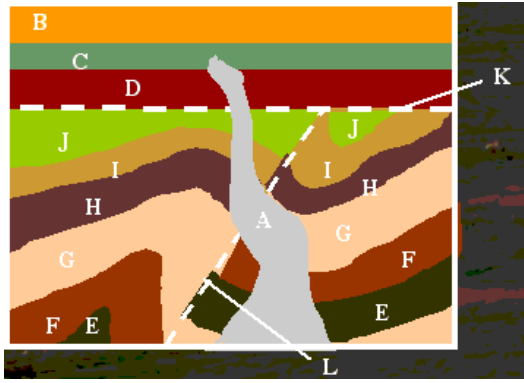
Directions: Put an "RA" next to the examples of absolute dates and an "RE" next to examples of relative dates.

- | | |
|--|--|
| 1.) A house built in 1805 _____ | 4.) Pyramid with the most recent form of Mayan writing on the wall _____ |
| 2.) The oldest tomb in the Valley of the Kings _____ | 5.) Barn before the one currently standing _____ |
| 3.) Charred wood from the Great Chicago Fire _____ | 6.) Bronze Age axe head from England _____ |

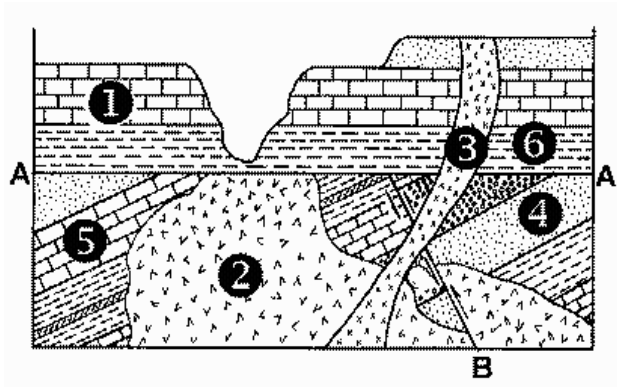
Put the following layers in order of oldest to youngest



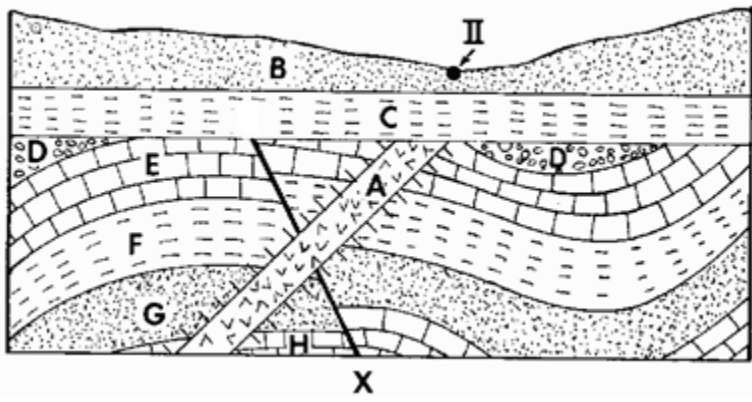
Put the layers and events in order of oldest to youngest.



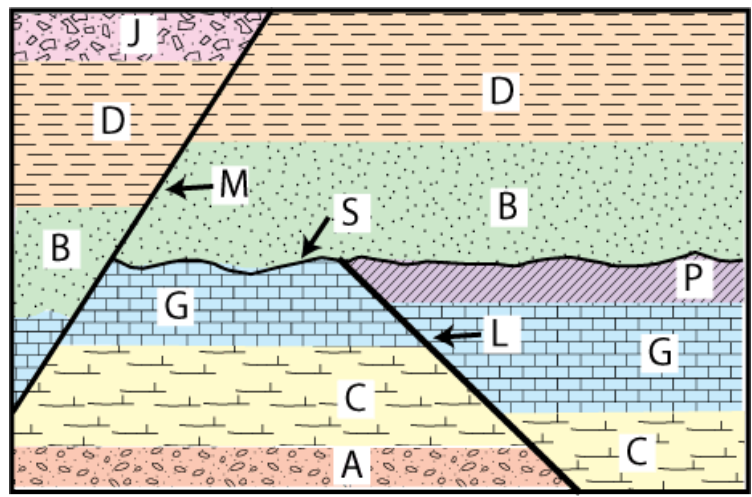
____ / ____ / ____ / ____ / ____ / ____ / ____
 ____ / ____ / ____ / ____ / ____



____ / ____ / ____ / ____ / ____ / ____
 ____ / ____ / ____ / ____ / ____



____ / ____ / ____ / ____ / ____ / ____
 ____ / ____ / ____ / ____ / ____



____ / ____ / ____ / ____ / ____ / ____
 ____ / ____ / ____ / ____ / ____