Review for Strata & Fossil Quiz Name: _____ Quiz Date: _____

Your quiz will have some multiple-choice questions, matching, fill-in-the-blank questions, and short answer. To review, study DQs, notes from class, labs, video notes, activities, and strata problems. Here are the learning targets:

- I can interpret rock strata diagrams to determine the relative ages of rock layers and fossils and explain how this evidence helps organize Earth's history.
- I can describe how absolute dating works and interpret half-life data.
- I can describe how different fossils form, how they provide clues about the past, and describe their similarities/differences with modern organisms.

1. Fossilized tree sap is better known as:

A. a mold fossil C. petrification

B. a cast fossil D. amber

2. Indirect evidence of past life such as fossilized footprints or burrows are called:

A. body fossils C. index fossils

B. trace fossils D. frozen fossils

3. Determining the age of a sample based on the ratio of radioactive (parent) material to the non-radioactive (daughter) material is known as:

A. relative dating C. stratification

B. absolute dating D. geologic column

4. The most advanced organisms in the fossil record are typically found in the _____ of the Geologic Column.

A. bottom C. top

B. middle D. none of the above, there is no pattern

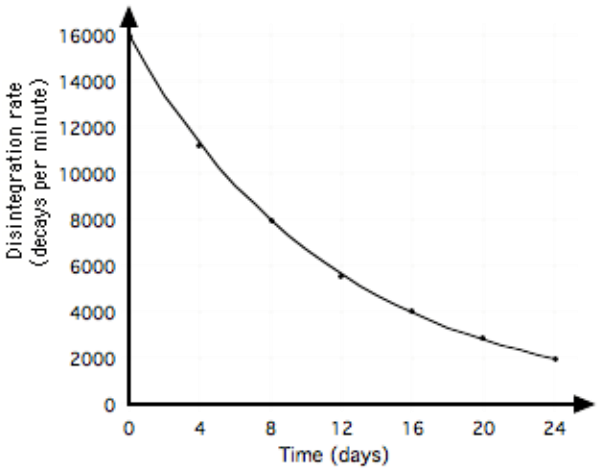
5. The Principle of Superposition states that the younger layers of rock lie _____ the older layers of rock.

A. above C. beside

B. below D. inside

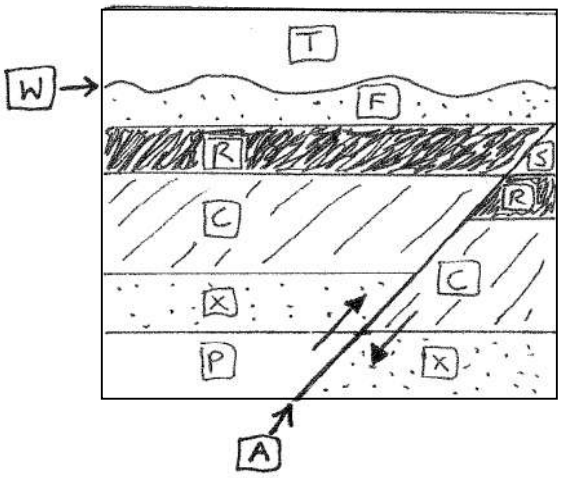
6. If a radioactive material has a half-life of 10,000 years, how old is a fossil if only $1/16^{th}$ of it is still radioactive (undecayed)? Show your work.

7. Using the graph shown on the right, answer the following:
a. What is the half-life of this radioactive substance? How do you know this (define half-life)? Explain.



b. After 16 days, about how many decays per minute would you expect to detect?

8. Use the diagram on the right to answer the following questions:
a. What is the name of the feature represented by W? How could this have occurred?

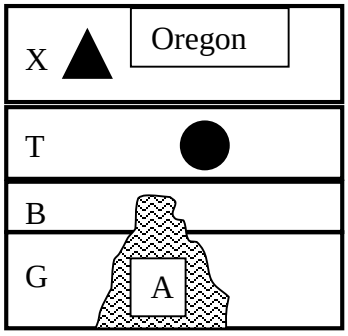


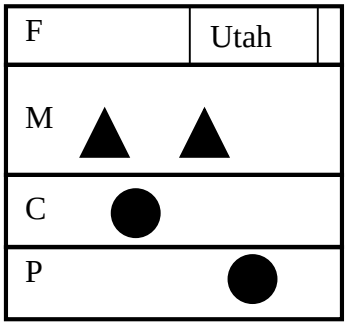
b. What is the name of the feature labeled by A? _____

c. List all the layers and features in the diagram from youngest to oldest. **Youngest:**

Oldest:

9. Using the pictures below, answer the following:





a. Based on the evidence, which would make a better index fossil, the Black Circle or the Black Triangle? Explain your answer. _____
_____
_____
_____
_____

b. Which is older, A or B? _____ Why? _____

c. If all Black Triangle fossils are 45 myo, Layer G is 85 myo, and Rock A is 65 myo, then about how old are the following: Layer F:_____ Layer X: _____ Layer B: _____
Layer M: _____ Layer T: _____ Black Circle Fossils: _____

d. What is A called? _____

e. What are the layers of sedimentary rock called? _____

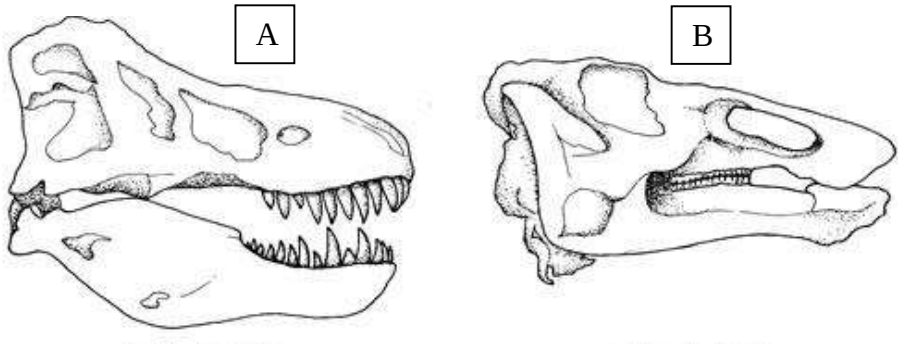
10. Scientists estimate that the Earth is about _____ years old based on radioactive dating of _____.

11. Any disturbance to a rock layer is always _____ than the rock layer it disturbs.

12. Earth has experienced several major mass extinctions. What are the theories about the causes of these events?

13. You find these two fossil skulls from the same time period.

a. What key differences are there in the skulls?



b. What might this mean about each organism's role in the ecosystem?

c. What similarities are there in each skull compared to modern organisms?

14. Compare and contrast each of the following:

Body and Trace Fossil:

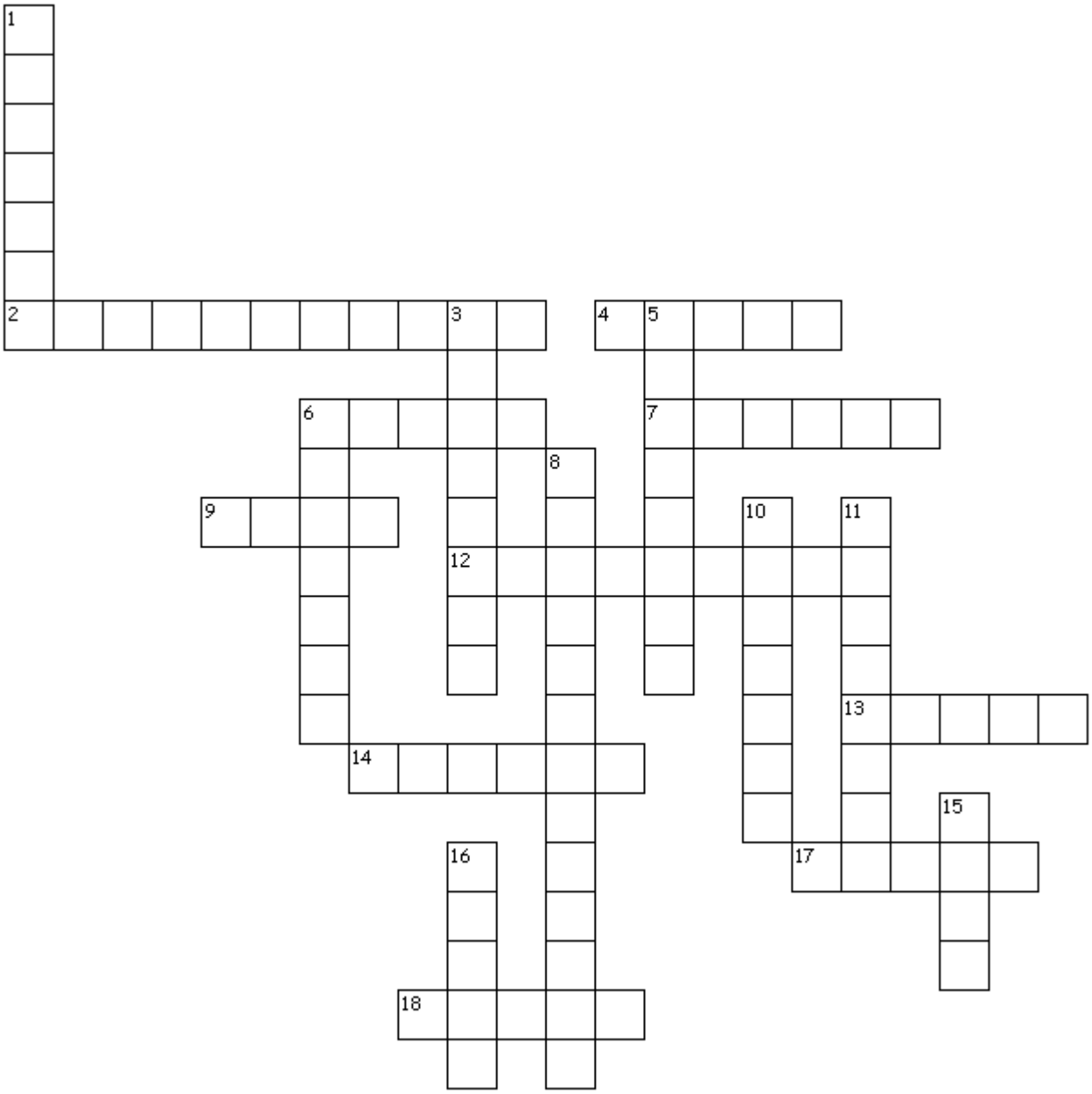
Fault and Intrusion:

Mold and Cast:

Tilting and Folding:

Absolute and Relative Dating:

Strata and Sediment: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Across

2. type of rock that fossils are usually found in
4. hot liquid rock inside the Earth
6. a break in the Earth's crust where rock layers slide past each other
7. layers of sedimentary rock
9. the half-life is the amount of time it takes _____ a radioactive sample to become stable
12. igneous rock that melts into existing strata
13. fossilized tree sap
14. any naturally preserved evidence of past life
17. when radioactive elements _____ they turn into stable elements and release radiation
18. older rocks are found _____ younger rocks

Down

1. type of rock that is more likely to be radioactively dated
3. type of dating that approximates ages of rock layers and fossils based on their position
5. type of dating that uses radioactive elements to pinpoint a rock/fossil's age
6. when strata bend and buckle due to pressure
8. wood is turned to stone in this fossilization process
10. when strata become slanted at an angle due to internal pressure
11. radioactive elements have _____ nuclei
15. a 3D fossil that forms when a mold is filled with sediment that hardens
16. category of fossil that is useful in relative dating of a rock layer