

Name: _____ Date: _____

Sifting Stone Secrets: Sophisticated 10th Grade Fossil Findings

Students focus on evidence retrieval and identifying preservation patterns to reconstruct ancient ecosystems and the Earth's biological timeline.

1. Which of the following is an example of an 'index fossil,' used by geologists to determine the relative age of rock layers because the organism lived for a short time but was geographically widespread?

- A. Stromatolites from the Precambrian
- B. Ammonites from the Mesozoic
- C. Modern-day Coelacanth fish
- D. Petrified Oak wood

2. The Law of Superposition states that in an undisturbed sequence of rocks, the oldest layers are found at the bottom.

- A. True
- B. False

3. When an organism is buried in sediment and its hard parts dissolve, leaving a hollow space in the shape of the organism, it creates a _____ fossil.

- A. Cast
- B. Carbon film
- C. Mold
- D. Coprolite

4. What type of fossil provides evidence of the behavior or activities of ancient organisms, such as burrows, nests, or footprints?

- A. Body fossil
- B. Trace fossil
- C. Petrified fossil
- D. Resin fossil

5. Radioactive decay of isotopes like Carbon-14 is used to find the 'relative' age of a fossil compared to other rock layers.

- A. True
- B. False

6. The process where organic matter is compressed over time, leaving behind a thin dark residue of an element, is called _____.

- A. Permineralization
- B. Recrystallization
- C. Carbonization

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D. Desiccation

7. If a geologist finds *Glossopteris* (an ancient fern) fossils in Antarctica, what does this primarily suggest about Earth's history?

- A. Antarctica was always a frozen desert.
- B. The plants evolved to grow in ice.
- C. The continents were once joined in a warmer climate.
- D. The fossils were moved there by humans.

8. The sudden disappearance of many species from the fossil record at the end of the Cretaceous period is known as a(n) _____.

- A. Mass extinction
- B. Evolutionary burst
- C. Adaptive radiation
- D. Speciation event

9. Soft-bodied organisms, like jellyfish, are just as likely to become fossils as hard-shelled organisms like clams.

- A. True
- B. False

10. Which geologic era is often referred to as the 'Age of Mammals' due to the diversification of mammals following the extinction of large reptiles?

- A. Paleozoic
- B. Mesozoic
- C. Cenozoic
- D. Proterozoic