

The Diversity of Living Things: Unit 1, Lesson 4, “The History of Life on Earth.”

Answers

Answers for 1-3 should represent students' current thoughts, even if incorrect.

1. T; F; T; T
2. Students should draw a fish. A fossil is likely to show the hard parts of an animal, such as bones.
3. Sample answer: The fossil record is all of the fossils found worldwide that tell the story of Earth's history. Extinction is the death of all members of a species.
4. Students' annotations will vary.
5. Organism A lived more recently than organism B.
6. Organism A lived between 75 and 130 million years ago.
7. Sample answer: The earliest animal has fewer bones at the end of its limb. Over time, the number of bones increased, and the limb became more suited for land travel.
8. Sample answer: Fossils of that organism are no longer present in the fossil record.
9. *See students' pages for annotations.*
10. It began 542 million years ago and ended 251 million years ago.
11. Triassic, Jurassic, and Cretaceous.
12. Sample answer: Cyanobacteria release oxygen into the atmosphere as a byproduct of using sunlight to make their own food (photosynthesis).
13. Students output should demonstrate that they have researched one of the plants or animals that lived during the Paleozoic era. They may draw and describe the organism's size and shape, its place in the food chain, and where it lived.
14. Sample answer: The landscape was very marshy. There were lots of tall plants that looked like trees and ferns.
15. *See students' pages for annotations.*
16. Sample answer: (Box 1) A large asteroid hit Earth, causing a lot of dust and fires. (Box 2) The dust and smoke from the fires blocked a lot of sunlight. (Box 3) Insufficient sunlight caused many plants to die. Then animals further up the food chain died, too.
17. Sample answer: The mass extinction of many dinosaurs and other reptile species opened up new habitats and feeding opportunities for mammals. The mammals were able to flourish in this environment.

Visual Summary Answers

18. Absolute

19. Eras

20. Cenozoic era

21. Students output should include a synthesis of the overall changes of life on Earth, starting with the microscopic organisms that lived in Precambrian time.

Lesson Review Answers

1. C

2. D

3. A

4. B

5. Precambrian time, the Paleozoic era, the Mesozoic era, and the Cenozoic era

6. Sample answer: Single-celled prokaryotes dominated Earth during the Precambrian time. Plants, fungi, and air-breathing animals colonized land during the Paleozoic era. Dinosaurs dominated the Earth during the Mesozoic era. Mammals have dominated Earth during the Cenozoic era.

7. Sample answer: The atmosphere has a much greater percentage of oxygen now than it did before; cyanobacteria.

8. Fossils of an organism that went extinct before this organism evolved would be found only in the very bottom rock layer, beneath the fossil shown, because that rock layer is older and formed first.