

Chapter 17 The History of Life

Section 17-1 The Fossil Record (pages 417–422)



Key Concepts

- What is the fossil record?
- What information do relative dating and radioactive dating provide about fossils?
- What are the main divisions of the geologic time scale?

Fossils and Ancient Life (page 417)

1. Scientists who study fossils are called _____
2. What is the fossil record? _____

3. What evidence does the fossil record provide? _____

4. Species that died out are said to be _____.
5. Is the following sentence true or false? About half of all species that have ever lived on Earth have become extinct. _____

How Fossils Form (page 418)

6. Circle the letter of each sentence that is true about fossils.
 - a. Most organisms that die are preserved as fossils.
 - b. Fossils can include footprints, eggs, or other traces of organisms.
 - c. Most fossils form in metamorphic rock.
 - d. The quality of fossil preservation varies.
7. How do fossils form in sedimentary rock? _____

Interpreting Fossil Evidence (pages 418–420)

8. List the two techniques paleontologists use to determine the age of fossils.
 - a. _____
 - b. _____

9. Circle the letter of each sentence that is true about relative dating.
- It determines the age of a fossil by comparing its placement with that of fossils in other layers of rock.
 - It uses index fossils.
 - It allows paleontologists to estimate a fossil's age in years.
 - It provides no information about absolute age.
10. Is the following sentence true or false? Older rock layers are usually closer to Earth's surface than more recent rock layers. _____
11. Is the following sentence true or false? Scientists use radioactive decay to assign absolute ages to rocks. _____
12. The length of time required for half of the radioactive atoms in a sample to decay is called a(an) _____.
13. The use of half-lives to determine the age of a sample is called _____.
14. How do scientists calculate the age of a sample using radioactive dating?

15. Is the following sentence true or false? All radioactive elements have the same half-life.

Geologic Time Scale (pages 421–422)

16. Fill in the missing eras and periods in the geologic time scale below.

GEOLOGIC TIME SCALE

Era						Paleozoic						
Period	Quaternary		Cretaceous		Triassic	Permian		Devonian		Ordovician		Vendian
Time (millions of years ago)	1.8 – present	65 – 1.8	145 – 65	208 – 145	245 – 208	290 – 245	363 – 290	410 – 363	440 – 410	505 – 440	544 – 505	650 – 544

17. Circle the letter of the choice that lists the eras of the geologic time scale in order from the most recent to oldest.
- a. Mesozoic, Paleozoic, Cenozoic
 - b. Cenozoic, Paleozoic, Mesozoic
 - c. Cenozoic, Mesozoic, Paleozoic
 - d. Paleozoic, Mesozoic, Cenozoic
18. Circle the letter of each sentence that is true about the geologic time scale.
- a. The scale is used to represent evolutionary time.
 - b. Major changes in fossil organisms separate segments of geologic time.
 - c. Divisions of the scale cover standard lengths of 100 million years.
 - d. Geologic time begins with the Cambrian Period.
19. After Precambrian time, what are the two basic divisions of the geologic time scale?

20. During which era did dinosaurs roam the Earth? _____
21. During which era did mammals become common? _____

Reading Skill Practice

Writing a summary can help you remember the information you have read. When you write a summary, write only the important points. Write a summary of the information in Section 17-1. Your summary should be shorter than the text on which it is based.