

**Chapter
14**

The History of Life, *continued*

Reinforcement and Study Guide

Section 14.1 The Record of Life

In your textbook, read about the age of a fossil.

Answer the following questions.

13. Explain how relative dating works.

14. What is the limitation of relative dating?

15. What dating technique is often used by paleontologists to determine the specific age of a fossil?

16. How do scientists use this dating technique to determine the ages of rocks or fossils?

In your textbook, read about a trip through geologic time.

Complete the table by checking the correct column for each statement.

Statement	Era			
	Pre-Cambrian	Paleozoic	Mesozoic	Cenozoic
17. The first photosynthetic bacteria form dome-shaped structures called stromatolites.				
18. Primates evolve and diversify.				
19. Divided into three periods: Triassic, Jurassic, and Cretaceous				
20. An explosion of life, characterized by the appearance of many types of invertebrates and plant phyla				
21. Mammals appear.				
22. Dinosaurs roam Earth, and the ancestors of modern birds evolve.				
23. Flowering plants appear.				
24. Amphibians and reptiles appear.				

In your textbook, read about origins: the early ideas.

Use each of the terms below just once to complete the passage.

microorganisms	vital force	Louis Pasteur	biogenesis
nonliving matter	S-shaped	disproved	Francesco Redi
organisms	broth	microscope	spontaneous generation
spontaneously	air		

Early scientists believed that life arose from **(1)** _____ through a process they called **(2)** _____. In 1668, the Italian physician **(3)** _____ conducted an experiment with flies that **(4)** _____ this idea. At about the same time, biologists began to use an important new research tool, the **(5)** _____. They soon discovered the vast world of **(6)** _____. The number and diversity of these organisms was so great that scientists were led to believe once again that these organisms must have arisen **(7)** _____. By the mid-1800s, however, **(8)** _____ was able to disprove this hypothesis once and for all. He set up an experiment, using flasks with unique **(9)** _____ necks. These flasks allowed **(10)** _____, but no organisms, to come into contact with a broth containing nutrients. If some **(11)** _____ existed, as had been suggested, it would be able to get into the **(12)** _____ through the open neck of the flask. His experiment proved that organisms arise only from other **(13)** _____. This idea, called **(14)** _____, is one of the cornerstones of biology today.