

Chapter 3, continued

19. Modern geology is considered a \_\_\_\_\_ between catastrophism and uniformitarianism.

- a. happy medium
- b. contrast
- c. difference
- d. choice

**Review** (p. 58)

Now that you've finished Section 1, review what you learned by answering the Review questions in your ScienceLog.

**Section 2: Relative Dating: Which Came First?** (p. 59)

1. What clues do scientists use to study the Earth's history?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Determining the age of objects or events in relation to other objects or events is called \_\_\_\_\_.

**The Principle of Superposition** (p. 59)

3. As long as a sequence of rock layers is undisturbed, scientists know that \_\_\_\_\_ rocks lie above \_\_\_\_\_ rocks.

4. What phrase will help you remember the principle of superposition?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**The Geologic Column** (p. 60)

5. How did geologists create the geologic column?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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Place each of the terms below in the correct order to complete the following sentence. Write the corresponding letter for each term in the appropriate blank.

6. Geologists will gather \_\_\_\_\_ about a \_\_\_\_\_ and compare it with the \_\_\_\_\_ in order to determine the sequence's \_\_\_\_\_.
- a. age(s)                                              c. information  
 b. geologic column(s)                              d. rock sequence(s)

**Disturbed Rock Layers** (p. 61)

7. Why is a crosscutting feature always younger than the rock layers it cuts across?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Choose the term in Column B that best matches the description in Column A, and write your answer in the space provided.

Column A	Column B
____ 8. a break in the Earth's crust along which blocks of crust slide relative to one another	a. superposition b. fold c. fault d. tilt e. intrusion
____ 9. younger sediment deposited on top of older layers	
____ 10. molten rock that has squeezed into existing rock and hardened	
____ 11. rock layers bent by the Earth's internal forces	
____ 12. rock layers slanted by the Earth's internal forces	

**Gaps in the Record—Unconformities** (p. 62)

13. When a layer or several layers of rock are missing from a rock-layer sequence, the gaps are called unconformities. True or False? (Circle one.)

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**14.** Name two possible explanations for a missing layer in a rock-layer sequence.

\_\_\_\_\_

**15.** From Figure 6, an unconformity is called \_\_\_\_\_ if the missing layer was never actually present.

**16.** Nondeposition occurs when the supply of \_\_\_\_\_ stops at some point and then restarts. \_\_\_\_\_ causes an unconformity when an area is exposed to water, wind, or other elements.

**Types of Unconformities** (p. 63)

Choose the term in Column B that best matches the description in Column A, and write your answer in the space provided. Terms may be used more than once.

Column A	Column B
___ <b>17.</b> found between horizontal layers and tilted layers	<b>a.</b> disconformity
___ <b>18.</b> where sedimentary rock layers lie on top of an eroded surface of nonlayered igneous or metamorphic rock	<b>b.</b> nonconformity
___ <b>19.</b> most common type of unconformity	<b>c.</b> angular unconformity
___ <b>20.</b> part of a sequence of parallel layers is missing	

**Rock-Layer Puzzles** (p. 63)

**21.** How do geologists figure out rock-layer puzzles?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Review** (p. 63)

Now that you've finished Section 2, review what you learned by answering the Review questions in your ScienceLog.

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Chapter 3, continued

**Section 4: Looking at Fossils** (p. 68)

1. What does studying fossils help you learn about Coralville?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Fossilized Organisms** (p. 68)

2. Fossils are formed in rocks when the \_\_\_\_\_  
body parts of an organism get buried in  
\_\_\_\_\_ and are preserved when it turns to  
\_\_\_\_\_.

Mark each of the following statements *True* or *False*.

- 3. \_\_\_\_\_ Fossils occur only when an organism dies and the remains are trapped between layers of rock.
- 4. \_\_\_\_\_ Some of our best insect fossils are preserved in hardened tree sap.
- 5. \_\_\_\_\_ One example of a fossil formed by mummification is petrified wood.
- 6. What are frozen fossils?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. The fossilized remains of some animals have been found in sticky pools called \_\_\_\_\_.

**Other Types of Fossils** (p. 70)

8. A \_\_\_\_\_ is naturally preserved evidence of an animal's activity.

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9. How do animal tracks and burrows become fossils?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Coprolites are fossilized feces, which makes them a type of \_\_\_\_\_ . (index fossil or trace fossil)

11. When sediment fills a mold and becomes rock, a \_\_\_\_\_ is created.

**Using Fossils to Interpret the Past** (p. 71)

12. Which of the following can scientists interpret by examining fossils? (Circle all that apply.)

- a. how Earth's environment has changed over time
- b. how plants and animals have changed over time
- c. how rocks have changed positions
- d. the Earth's position relative to the Sun

13. What did the marine fossils discovered on top of Canadian mountaintops tell scientists?

- a. These marine species lived on top of prehistoric mountaintops.
- b. Ancient humans must have moved these fossil remains.
- c. The rocks of the mountaintop were once below the surface of an ocean.
- d. The fossils were fake.

14. How do scientists know that fish existed before amphibians?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Using Fossils to Date Rocks** (p. 72)  
15. When geologists find an index fossil, what information do they know about the rock layer in which the fossil was found?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. Imagine that you were rock climbing and found a *Phacops* fossil. The rock surrounding this fossil is probably \_\_\_\_\_ years old.

**Review** (p. 72)

Now that you've finished Section 4, review what you learned by answering the Review questions in your ScienceLog.

**Section 5: Time Marches On** (p. 73)

1. You found a stack of photographs and wanted to make a model of rock sequence, the \_\_\_\_\_ photographs would be placed on the top of the stack.

a. oldest

b. newest

c. most accurate and highest resolution

d. negative

2. Name two things scientists use to study the history of the Earth.

\_\_\_\_\_

\_\_\_\_\_

**Rock Layers and Geologic Time** (p. 73)

3. The layers of sedimentary rock exposed in the Grand Canyon show more of the geologic column than do most places on Earth. The exposed layers represent nearly \_\_\_\_\_ years of geologic time.