Answer Key

Directed Reading A

SECTION: EARTH'S STORY AND THOSE WHO FIRST LISTENED

1. C
2. D
3. A
4. E
5. B
6. D
7. A
8. C
9. Scientists believe that catastrophes sometimes play an important role in shaping Earth's history.
10. Huge craters have been found where asteroids and comets are thought to have struck the Earth.
11. A
12. C
13. B
14. D

SECTION: RELATIVE DATING: WHICH CAME FIRST?

1. B
2. C
3. B
4. The disruptions make it difficult for scientists to determine the relative age of the rocks.
5. The geologic column is an ideal sequence of rock layers that contains all the known fossils and rock formations on Earth.
6. Geologists use the geologic column to interpret rock sequences and to identify the layers in puzzling rock sequences.
7. The crosscutting feature is always younger because the rock layers had to exist before anything could cut across them.
8. C
9. A
10. E
11. B
12. D
13. unconformity
14. The layer was never present, or the layer was removed.
15. nondeposition
16. erosion
17. C
18. B
19. A
20. Geologists use their knowledge of the events that disturb or remove rock-layer sequences to help them solve rock-layer puzzles.

SECTION: ABSOLUTE DATING: A MEASURE OF TIME

1. The purpose of absolute dating is to determine the age of an object by determining the number of years it has existed.
2. isotopes
3. stable
4. unstable
5. radioactive decay
6. Scientists use the relative amounts of stable and unstable isotopes present in an object to determine the object's age.
7. parent
8. daughter
9. older
10. half-life
11. radiometric dating
12. Half the parent material has decayed and become daughter material.
13. D
14. A
15. B
16. C

SECTION: LOOKING AT FOSSILS

1. B
2. C
3. A
4. A
5. B
6. C
7. B
8. B
9. A
10. C
11. Animal tracks can tell how big an animal was and how fast it was moving

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12.A coprolite can tell about the habits and diet of the animal that left it.
13. A
14. C
15. Geologists know where the rock layer fits into the geologic column, so they can give the rock layer an accurate date.
16. The rock surrounding a *Tropites* is between 230 and 208 million years old.
17. The rock surrounding a *Phacops* is about 400 million years old.

SECTION: TIME MARCHES ON

1. C
2. C
3. Geologists created the geologic time scale to make it easier to study the 4.6 billion years of Earth's history by dividing it into distinct intervals of time.
4. B
5. D
6. A
7. C
8. The boundaries between geologic time intervals represent shorter intervals in which visible changes took place on Earth.
9. 2, 3, 4, 1
10. Extinction is the death of every member of a species.
11. Global climate change and asteroid impacts are catastrophic
12. At the beginning of the Paleozoic era, marine life flourished. A great diversity of life made its home in the oceans.
13. The Paleozoic era ended with the largest mass extinction in Earth's history. Nearly 90% of all marine species became extinct.
14. The Mesozoic era is called the Age of Reptiles because reptiles, including the dinosaurs, lived in the water and on land.
15. The Cenozoic era is called the Age of Mammals because mammals flourished. The mass extinction of so many other species at the end of the Mesozoic era made it easier for mammals to find enough food and habitat.
16. A global climate change probably caused the extinction of dinosaurs.
17. Mammals are able to regulate their body temperature. Also, baby mammals develop inside the mother's body.

Directed Reading B

SECTION: EARTH'S STORY AND THOSE WHO FIRST LISTENED

1. C
2. D
3. C
4. A
5. C
6. D
7. C
8. paleontologists
9. fossils

SECTION: RELATIVE DATING: WHICH CAME FIRST?

1. B
2. C
3. B
4. B
5. C
6. B
7. B
8. A
9. D
10. C
11. unconformity
12. nondeposition
13. erosion
14. B
15. B
16. D
17. C
18. B

SECTION: ABSOLUTE DATING: A MEASURE OF TIME

1. C
2. A
3. C
4. C
5. D
6. D
7. radiometric dating
8. half-life
9. B
10. B reserved.
12. C
13. A

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