

The Geology Book Study Guide

Introduction

1. Since scientists can't travel to the earth's past, how do they know what happened in the past?
2. What are the two basic ways of thinking about the unobserved past?
3. What is the slogan of the principle of uniformity?
4. What does this slogan mean?
5. How does the principle of catastrophe differ from that of uniformity?
6. Where does the Bible tell us the earth came from?
7. What was the condition of the earth "in the beginning"?
8. Why did God place a curse on His creation?
9. After man became more rebellious, how did God destroy His creation?
10. What is the only way to make sense out of the evidence that we observe in the present?

Chapter 1: Planet Earth

1. Using the information in the first paragraph and the illustration on page 6, list each planet under its correct heading of either "solid" or "gas."
2. How many planets in our solar system are capable of supporting life?

Read the following statements. Tell whether the statement is a true or false statement about the earth.

3. The earth is the second planet from the sun.
4. The sun revolves around the earth.
5. The rotation of the earth causes day and night.
6. The earth's tides are caused by the moon.
7. The earth is a peach-shaped sphere.
8. The earth's diameter is larger at the equator.
9. The earth is one of only three planets with water.
10. The earth's continents are higher than the oceans are deep.
11. What are the three main divisions of the earth?
12. If no one has ever drilled to the center of the earth, how do we know what is there?
13. What is the asthenosphere?
14. What causes the molten liquid in the inner core to return to a solid form?
15. From what does the magnetic field shield the earth?
16. With regard to "plates," where do most of the world's earthquakes occur?
17. Name three provisions of the atmosphere.

Chapter 2: The Ground We Stand Upon

IGNEOUS ROCKS

Read each description below and determine if the description is of granite, rhyolite, basalt, obsidian, or pumice.

1. Full of air holes, very lightweight
2. Formed by the rapid cooling of lava as it flows on the ground
3. Forms the "roots" of the continents.
4. Forms most of the oceanic crust.
5. Contains quartz, feldspar, mica, and hornblende.
6. Sometimes forms "pillow lava."
7. Commonly used to make arrowheads.

- 8. May actually float on water.
- 9. Forms the central mass of many mountains.
- 10. Looks like a “chunk of black glass.”

SEDIMENTARY ROCKS

- 11. What are the two categories of sedimentary rock?
- 12. What determines into which category sedimentary rock will be placed?
- 13. From where do clastic sedimentary rocks come?
- 14. What factor differentiates shale, sandstone, and a conglomerate?
- 15. What are the two classes of chemical sedimentary rocks?
- 16. Chalk is an example of which type of sedimentary rock?
- 17. Coal is actually the remains of what?
- 18. Which sedimentary rock can be either organic or inorganic?
- 19. Which sedimentary rock is formed when seawater evaporates?
- 20. What is the term for a concretion that is lined on the inside with crystals?

METAMORPHIC ROCKS

- 21. What is the origin of the word “metamorphic”?
- 22. Schist comes from slate, which comes from what other sedimentary rock?
- 23. Into what can metamorphosed quartz sandstone turn?
- 24. What sedimentary rock metamorphoses into marble?
- 25. What two factors cause metamorphism?

Chapter 3: The Earth’s Surface

PLAINS

Match the description with the correct term:

- | | |
|--|----------------------------|
| 1. Plain formed by water that deposited sediments as it neared sea level. | a. offshore deposit |
| 2. Plain formed by glaciers. | b. low-lying plain |
| 3. Plain found upriver from an alluvial plain; these may have been uplifted. | c. glacial plain |
| 4. Plain formed by hardened lava. | d. alluvial plain |
| 5. Plain formed by slow-moving water such as deltas | e. lava plain |
| 6. Plain formed by evaporated lake. | f. coastal plain |
| 7. Plain formed by strong ocean currents distributing sediments. | g. lacustrine (lake) plain |

PLATEAUS

- 8. The main difference in plains and plateaus is that plateaus are at _____.
- 9. Instead of receiving sediments, plateaus are now _____.
- 10. When a rock breaks and a large flat area is uplifted, then a _____ plateau is formed.
- 11. When a rock warps and a large flat area is uplifted slowly, then a _____ plateau is formed.
- 12. Flat layers of hardened lava at higher elevations are called _____ plateaus.

MOUNTAINS

Label each description below as folded, domed, fault block, or volcanic.

- 13. Formed by lava
- 14. Formed by layers of rock that have been buckled.

15. Formed by broken rock pushed up higher on one side than the other.
16. Formed by layers of rock pushed up into a dome shape without breaking.
17. The islands of Hawaii.
18. The Alps.
19. The Black Hills of South Dakota.
20. The Grand Teton Mountains of Wyoming.
21. Mount St. Helens.
22. The Rocky Mountains.

EROSIONAL FEATURES

Answer true or false to the following statements.

23. Scientists like to study canyons because the rocks are exposed so well.
24. A glacier flowing over a continent might scrape off the granite and leave the sedimentary rock exposed.
25. A mesa is a broad, flat-topped hill rising above the surrounding lowlands.
26. A butte is larger than a mesa.
27. Old mountain ranges that are almost completely eroded with only a few remnants still standing are called monadnocks.

Chapter 4: Geological Processes and Rates

EROSION

1. Physical processes that can speed up the process of disintegration are:
 - a. heat from sunlight
 - b. burrowing animals
 - c. roots of plants
 - d. freezing and thawing
 - e. all of the above
2. When chemicals in the air and water help to dissolve minerals, it is called:
 - a. chemical engineering
 - b. chemical decomposition
 - c. chemical weathering
 - d. chemical absorption
 - e. none of the above
3. The greatest damage caused by hurricanes comes from:
 - a. flooding
 - b. high winds
 - c. tornadoes spawned
 - d. lightning
 - e. all of the above
4. Berlingame Canyon was formed by:
 - a. flooding from a hurricane
 - b. high winds over a long period of time
 - c. normal geological processes
 - d. water from irrigation ditches
 - e. all of the above

5. The destruction of the tunnel at Glen Canyon Dam proved:
 - a. water has incredible erosive power
 - b. tunnels are useless to drain water
 - c. new types of concrete had to be found
 - d. the U.S. government wastes lots of money
 - e. all of the above
6. Tiny bubbles in water exploding inwardly is a process called:
 - a. kolking
 - b. cavitation
 - c. plucking
7. The process where moving water picks up rocks is called:
 - a. kolking
 - b. cavitation
 - c. plucking
8. The process that acts like an underwater tornado, lifting and removing large chunks of rock is called:
 - a. kolking
 - b. cavitation
 - c. plucking

DEPOSITION

9. _____ (Rapidly, Slowly) moving water tends to erode the rock over which it is passing.
10. _____ (Rapidly, Slowly) moving water tends to deposit the sediment it contains.
11. _____ are formed as rivers deposit their sediments farther and farther out to sea.
 - a. reefs
 - b. coral deposits
 - c. deltas
 - d. turbidites
 - e. none of the above
12. Sandbars and islands are formed by the process of:
 - a. seaside sedimentation
 - b. offshore deposition
 - c. shoreline deposition
 - d. wave energy
 - e. none of the above
13. As rivers round an "S" curve, they tend to erode the bank on the _____, and deposit sediment on the _____ of the curve.
 - a. top, bottom
 - b. outside, inside
 - c. inside, outside
 - d. bottom, top
 - e. none of the above
14. A turbidite is:
 - a. a form of wet cement
 - b. a type of erosion
 - c. a catastrophic underwater current
 - d. a hardened layer of rock formed from an underwater mudslide
 - e. all of the above

- 15. The Tapeats Sandstone:
 - a. is an example of sedimentary rock
 - b. covers most of North America
 - c. is a flat “pancake” layer of rock
 - d. was formed by a highly energetic flow of water
 - e. all of the above
- 16. A tsunami is a:
 - a. Japanese beetle
 - b. a destructive wall of water
 - c. a sedimentary rock
 - d. flow of lava from a Japanese volcano
 - e. none of the above

SEDIMENTS BECOME SEDIMENTARY

- 17. It doesn’t take a long time for sediments to harden into rock, it just takes the right _____.
- 18. Loose sand is about 50 percent open space, while sandstone is ____ to _____ percent open space.
- 19. _____ occurs when sediments are pressed closely, forcing the water out.
- 20. The second step of sedimentation is called _____ and involves the addition of some sort of “glue” to hold the sediments together.
- 21. The mineral that acts as a “glue” for sand to form sandstone is _____.
- 22. The mineral that acts as a “glue” in limestone is _____.

FOSSILIZATION

- 23. What are fossils?
- 24. What prevents most dead animals from becoming fossils?
- 25. What is the main requirement for an organism to be fossilized?
- 26. Why do the hard parts of an organism comprise the most common fossils?
- 27. What kind of water is needed to petrify wood?
- 28. Of what three substances are all living things composed?
- 29. Of what is coal composed?
- 30. When did mammoths live?
- 31. What is a coprolite?
- 32. What is a gastrolith?

VOLCANISM

Match the terms with the best answers.

- 33. Mount St. Helens
 - 34. mud flows
 - 35. crater
 - 36. vent
 - 37. sill
 - 38. magma chamber
 - 39. cone
 - 40. Mount Ararat
 - 41. Noah’s ark
 - 42. Yellowstone National Park
- a. the opening at the top of a volcano
 - b. an open space within a volcano with no outlet where lava collects
 - c. may be petrified from volcanic ash
 - d. the space where molten magma collects before erupting through a vent
 - e. caused most of the damage at Mount St. Helens
 - f. erupted May 18, 1980
 - g. an outlet of a volcano
 - h. contains many hot springs, smoking fumaroles, and erupting geysers
 - i. hardened lava and ash forming the actual volcanic mountain
 - j. a volcanic mountain in Turkey

THE DEFORMATION OF ROCKS

Match the terms with the best answer.

- | | |
|-------------------|---|
| 43. joint | a. the side of a break above the fault plane |
| 44. fault | b. when the hanging wall moves downward relative to the foot wall |
| 45. hanging wall | c. when both the hanging wall and the foot wall move sideways |
| 46. foot wall | d. rock layers that have buckled down |
| 47. normal fault | e. a “dipping” zone connecting two flat zones of rock |
| 48. reverse fault | f. a fracture with little or no movement |
| 49. strike slip | g. when the hanging wall moves upward relative to the foot wall |
| 50. anticline | h. the side of a break below the fault plane |
| 51. syncline | i. rock layers that have buckled up |
| 52. monocline | j. a fracture with movement |

WERE THE CONTINENTS ONCE CONNECTED?

Read each of the following statements. Tell whether each is a true or false statement.

- 53. Science has proven that all of the continents were connected in the past.
- 54. From the shape of the continents, major gaps and overlaps would have been a problem with a past super continent.
- 55. Even mountain chains and fault systems align when the continents are hypothetically pushed together.
- 56. There is evidence that the continents were once a huge super continent called Panorama.
- 57. One problem with a super continent theory is that they are not just flat plates; they have “roots” anchoring them in place.
- 58. The continents are not presently moving.
- 59. To move the continents would require only slight movement over time.

RADIOISOTOPE DECAY

- 60. Unstable atoms that decay into smaller, more stable atoms are described as _____.
- 61. The most well-known radioactive atom is uranium, which decays into _____.
- 62. In the case of uranium decay, uranium is the _____ atom, and lead is the _____ atom.
- 63. Nuclear power plants capture _____ and use it to make electricity.
- 64. Scientists think they can determine the age of an object by _____ how much of the parent and daughter elements are present.
- 65. Carbon dating can only be used to date things that were once _____.
- 66. Carbon dating is not reliable for dating things more than a few thousand years old because carbon 14 _____ so rapidly.
- 67. Rocks that used to be in a hot liquid condition are termed _____.
- 68. _____ can dissolve uranium and lead, and lead to erroneous ages of rocks.
- 69. Fifteen-year-old rock from Mount St. Helens was dated at _____ years.

Chapter 5: Ways to Date the Entire Earth

- 1. By summing up all of the possible ways in which salt can be added to or removed from the ocean, what is the apparent age of the ocean?
- 2. If the normal processes of receiving and losing salt are applied to the oceans, why couldn't the ocean be three billion years old?
- 3. At the present rate of erosion, how long would it take for the continents to disappear?
- 4. If major flooding occurred and added sediment to the ocean at rates greater than at present, what would happen to the maximum age of the ocean?

5. From where does helium enter the atmosphere?
6. What causes the earth's magnetic field?
7. In addition to giving us direction, what other purpose does the magnetic field serve?
8. What is happening to the strength of the earth's magnetic field?
9. At the present rate of decline, how long ago would the earth's magnetic field have been too strong for life to exist?

Chapter 6: Great Geologic Events of the Past

THE CREATION

1. How many events are mentioned in the Bible that involved entirely different scientific principles than are in operation today?
2. What are these events?
3. What does the "first law of science" state?
4. Is God restricted by the laws of science?
5. List the seven days of creation and the major events of each day.
6. Without rain in the beginning, how were the plants watered?
7. What two words did God use to describe His creation?

THE FALL

8. What caused the fall of man?
9. What does the "second law of science" state?
10. Give some examples of the second law of science.

THE FLOOD

11. From God's viewpoint, what brought about the Flood?
12. How much of the world was destroyed by the Flood?
13. What two sources of water are mentioned by the Bible for the Flood?
14. Describe these two sources.
15. How long was the earth covered in the waters from the Flood?
16. What happened to the ocean basins to help drain the water?
17. What happened to the continents?
18. What may have bombarded the earth at this time?

THE ICE AGE

19. What were three factors causing the Ice Age?
20. What happened as the warm condensation from the oceans passed over the cold continents?
21. Why would the snow have continued for hundred of years?
22. What caused the end of the Ice Age?
23. Did ice cover the entire globe?
24. What are striations?
25. What is the difference in shape in valleys eroded by glaciers and those eroded by rivers?

Chapter 7: Questions People Ask

1. The Colorado River could not have carved the Grand Canyon because:
 - a. it would have had to have flowed directly through a mountain
 - b. rivers cannot erode solid rock
 - c. it erodes the surrounding terrain too quickly
 - d. the canyon is too deep

2. Why is Yellowstone Park unique for geysers and hot springs?
 - a. The area receives more heat from the sun than normal
 - b. An underground river of hot water supplies it
 - c. Underground friction between the plates causes the heat
 - d. The rock layer is thin, allowing very hot material to be near the surface.
3. Which of the following is true of Niagara Falls?
 - a. They are located between two great lakes.
 - b. The falls are only a few thousand years old.
 - c. The erosion created by the falls has been brought under control.
 - d. All of the above
4. What causes the Appalachian and Rocky Mountains to be so different?
 - a. They are formed of different materials.
 - b. They were formed at different times.
 - c. They are separated by thousands of miles.
 - d. The Appalachians are closer to the ocean.
5. Which of the following is not true about petrified wood?
 - a. It can form in a very short period of time.
 - b. It needs a rich supply of iron to speed up the process.
 - c. It has been used commercially in hardwood floors.
 - d. Silica surrounds or replaces each cell in the process.
6. Which of the following is not true of stalactites and stalagmites?
 - a. Stalactites hang from the ceiling.
 - b. Both are formed by calcium carbonate.
 - c. Both can be found outside of caves.
 - d. Both take thousands of years to grow a single inch.
7. Which of the following contains methane?
 - a. coal
 - b. natural gas
 - c. oil
 - d. all of the above
8. Which of the following is formed from the remains of plant material only?
 - a. coal
 - b. natural gas
 - c. oil
 - d. all of the above
9. Which of the following can be formed in a lab in the presence of volcanic clay?
 - a. coal
 - b. natural gas
 - c. oil
 - d. all of the above
10. Which of the following possibly comes from the remains of algae?
 - a. coal
 - b. natural gas
 - c. oil
 - d. all of the above

Chapter 8: The Future Earth

Read the following statements. Tell whether the statement is a true or false statement.

1. The original creation was perfect.
2. The Flood was God's judgment for a sinful world.
3. The world will never be judged again.
4. The Bible states that Christ will return to earth.
5. This present earth will last forever.
6. Everyone has sinned.
7. Christ died on the cross to pay the penalty for our sins.

ANSWERS

Introduction

1. Scientists interpret things that exist in the present, such as rocks, fossils, river systems, and mountains to try to discern the past.
2. The two ways are "uniformity" and "catastrophe."
3. "The present is the key to the past."
4. It means that past processes were no different than the way we see them today. Everything came about by slow and gradual processes occurring over very long periods of time.
5. Whereas the principle of uniformity sees processes occurring through slow and gradual means over long periods of time, catastrophe says that rapid, highly energetic events operated over short periods of time to shape the world as we see it today.
6. The Bible teaches that the earth was created by God.
7. The earth was absolutely perfect — "very good" — in the beginning.
8. God cursed the earth because of Adam and Eve's rebellion — sin.
9. God sent a flood to destroy the earth and its inhabitants.
10. To make sense out of present evidence, one must recognize the true past of the earth.

Chapter 1: Planet Earth

1. Solid: Mercury, Venus, Earth, Mars, Pluto
Gas: Jupiter, Saturn, Uranus, Neptune.
2. Only one planet, Earth, can support life.
3. (False) The earth is the **third** planet from the sun.
4. (False) The **earth** revolves around the **sun**.
5. (True) The rotation of the earth causes day and night.
6. (True) The earth's tides are caused by the moon.
7. (False) The earth is a **pear**-shaped sphere.
8. (True) The earth's diameter is larger at the equator.
9. (False) The earth is **the only** planet with water.
10. (False) The earth's oceans **are deeper than the continents are high**.
11. The earth is divided into the crust, mantle, and core.
12. We have a good idea of what is in the center of the earth by studying the way energy waves travel through the earth.
13. The asthenosphere is the uppermost part of the mantle on which the continental crust "floats."

14. Intense pressures and temperatures in the inner core cause it to return to a solid form.
15. The earth's magnetic field shields it from harmful radiation from the sun and stars.
16. Most of the world's earthquakes occur near the edges of the plates.
17. The atmosphere provides the air we breathe, a shield from harmful cosmic radiation, and weather.

Chapter 2: The Ground We Stand Upon

IGNEOUS ROCKS

1. Full of air holes, very lightweight (pumice)
2. Formed by the rapid cooling of lava as it flows on the ground (obsidian)
3. Forms the "roots" of the continents (granite)
4. Forms most of the oceanic crust (basalt)
5. Contains quartz, feldspar, mica, and hornblende (granite)
6. Sometimes forms "pillow lava" (basalt)
7. Commonly used to make arrowheads (obsidian)
8. May actually float on water (pumice)
9. Forms the central mass of many mountains (granite)
10. Looks like a "chunk of black glass" (obsidian)

SEDIMENTARY ROCKS

11. The two categories of sedimentary rock are "clastic" and "chemical."
12. Sedimentary rock is categorized by where its materials came from and how they were deposited.
13. Clastic sedimentary rocks come from previously existing rocks, which were either eroded or broken up.
14. The size of the sediments determines the name of the rock.
15. The two classes of chemical sedimentary rocks are "organic" and "inorganic."
16. Chalk is an example of diatomaceous earth.
17. Coal is actually the remains of huge masses of buried plant material.
18. Limestone can be either organic or inorganic.
19. An evaporite is formed when seawater evaporates.
20. A geode is a concretion lined inside with crystals.

METAMORPHIC ROCKS

21. The word "metamorphic" comes from a combination of the Greek words — *meta*, meaning "change," and *morphe*, meaning "to change form."
22. Slate comes from shale.
23. Metamorphosed quartz sandstone can turn into quartzite.
24. Limestone metamorphoses into marble.
25. Heat and pressure cause metamorphism.

Chapter 3: The Earth's Surface

PLAINS

1. b.
2. c.
3. f.
4. e.
5. d.
6. g.
7. a.

PLATEAUS

8. higher elevations
9. eroding
10. fault
11. warped
12. lava

MOUNTAINS

13. Formed by lava (volcanic)
14. Formed by layers of rock that have been buckled (folded)
15. Formed by broken rock pushed up higher on one side than the other (fault block)
16. Formed by layers of rock pushed up into a dome shape without breaking (domed)
17. The islands of Hawaii (volcanic)
18. The Alps (folded)
19. The Black Hills of South Dakota (domed)
20. The Grand Teton Mountains of Wyoming (fault block)
21. Mount St. Helens (volcanic)
22. The Rocky Mountains (folded)

EROSIONAL FEATURES

23. (True) Scientists like to study canyons because the rocks are exposed so well.
24. (False) A glacier flowing over a continent might scrape off the **sedimentary rock** and leave the **granite** exposed.
25. (True) A mesa is a broad, flat-topped hill rising above the surrounding lowlands.
26. (False) A **mesa** is larger than a **butte**.
27. (True) Old mountain ranges that are almost completely eroded with only a few remnants still standing are called monadnocks.

Chapter 4: Geological Processes and Rates

EROSION

1. e
2. c
3. a
4. d
5. a
6. b
7. c
8. a

DEPOSITION

9. rapidly
10. slowly
11. c
12. b
13. b
14. d
15. e
16. b

SEDIMENTS BECOME SEDIMENTARY

- 17. conditions
- 18. ten, twenty
- 19. compaction
- 20. cementation
- 21. silica
- 22. calcite

FOSSILIZATION

- 23. Fossils are the remains of plants and animals that were once alive.
- 24. Scavengers, other animals, or insects will eat the body or perhaps tiny bacteria will cause it to decompose. Oxygen and other chemicals in the air may cause it to totally deteriorate.
- 25. For an organism to be fossilized, the main requirement is that it be buried rapidly.
- 26. The most common fossils are comprised of the hard parts of an organism because these parts are most resistant to decay and least likely to be eaten.
- 27. Wood can be petrified when it is buried in an area where hot silica-rich waters flow.
- 28. All living things are made up of carbon, hydrogen, and water.
- 29. Coal is composed of the remains of plant materials.
- 30. Mammoths lived in the Ice Age following Noah's flood.
- 31. A coprolite is a deposit of fossilized dung.
- 32. A gastrolith is a tiny pebble or grain of sand eaten by some animals to help them digest their food.

VOLCANISM

- 33. f
- 34. e
- 35. a
- 36. g
- 37. b
- 38. d
- 39. i
- 40. j
- 41. c
- 42. h

THE DEFORMATION OF ROCKS

- 43. f
- 44. j
- 45. a
- 46. h
- 47. b
- 48. g
- 49. c
- 50. i
- 51. d
- 52. e

WERE THE CONTINENTS ONCE CONNECTED?

- 53. (False) Science has **not** proven that all of the continents were connected in the past.

54. (False) From the shape of the continents, **only minor gaps and overlaps would have occurred** with a past super continent.
55. (True) Even mountain chains and fault systems align when the continents are hypothetically pushed together.
56. (False) There is evidence that the continents were once a huge super continent called **Pangea**.
57. (True) One problem with a super continent theory is that are not just flat plates; they have “roots” anchoring them in place.
58. (False) The continents **are** presently moving.
59. (False) To move the continents would require **a major event, operating at energy levels far greater than those in nature**.

RADIOISOTOPE DECAY

60. radioactive
61. lead
62. parent, daughter
63. heat
64. measuring
65. living (or alive)
66. decays
67. igneous
68. Water
69. 2.8 million

Chapter 5: Ways to Date the Entire Earth

1. The ocean could not be older than 62 million years.
2. The ocean could not be three billion years old because it would be so full of salt that life there would be impossible.
3. The continents would be gone in 15 million years.
4. The maximum age would be much younger than 14 million years.
5. Helium enters the atmosphere from the crust of the earth.
6. The earth’s magnetic field is due to currents of electricity in the metallic outer core of the earth.
7. The magnetic field protects the earth from harmful cosmic rays.
8. The strength of the earth’s magnetic field is declining.
9. At the present rate of decline, the earth’s magnetic field would have been too strong for life to exist 10,000 years ago.

Chapter 6: Great Geologic Events of the Past

1. The Bible names three such events.
2. Those three events are creation, the Fall, and the Flood.
3. The “first law of science” states that in the present world, nothing is being created out of nothing and that nothing that exists can be uncreated.
4. God is not restricted by any scientific laws. He “broke” the first law during the six days of creation.
5. Day 1 — creation of light
Day 2 — creation of the firmament to separate the waters
Day 3 — creation of plants
Day 4 — creation of sun, moon, and stars

Day 5 — creation of sea creatures and birds

Day 6 — creation of animals and man

Day 7 — God rested

6. The plants were watered by a heavy dew (or mist).
7. God said His creation was “very good.”

THE FALL

8. The fall of man was caused by the disobedience (sin) of Adam and Eve.
9. The second law of science states that in every process or reaction in the universe, the components deteriorate.
10. The second law of science can be seen in that every living animal and person grows old and eventually dies; mutations alter genetic codes and cause a loss of genetic information; energy is lost due to friction in every moving part; a perfect crystal is never seen; uranium atoms deteriorate.

THE FLOOD

11. The Flood was brought about as God’s method of punishment on the rebellious civilization in the days of Noah.
12. The world was totally destroyed by the Flood.
13. The Bible says the “windows of heaven” and the “fountains of the great deep” supplied the water for the Flood.
14. The “windows of heaven” is probably a description of the layer of atmospheric water surrounding the earth condensing into liquid and falling as rain. The “fountains of the great deep” might be volcanoes and springs on the ocean floor.
15. The earth was covered with water for 150 days.
16. The ocean basins must have deepened and widened to allow the water from the Flood to flow there.
17. If the continents were once connected, this must have been when they separated. The continents would have been uplifted and the shifting would have caused many mountain chains to form.
18. The earth may have been bombarded by great meteorites and comets.

THE ICE AGE

19. The oceans were warm, and much water evaporated into the atmosphere. The continents were cold and barren. The atmosphere was full of volcanic dust, reflecting the warm sunlight back into space.
20. The warm condensation would have become cold and much snow would have resulted.
21. The snow would have not melted because of less solar heating.
22. The Ice Age continued until the oceans finally gave up their excess heat and the atmosphere was cleaned of its volcanic debris.
23. The ice extended much farther from the poles toward the equator than it does today, but tropical regions closer to the equator did not experience the snow and ice, and would have been fine climates for life to exist.
24. Striations are streaks that can be seen in exposed rocks. These striations were formed by the scraping of rock-carrying glaciers as they passed over the rocks.
25. Glaciers typically erode a U-shaped valley while rivers erode a V-shaped valley.

Chapter 7: Questions People Ask

1. a
2. d
3. d
4. b

- 5. b
- 6. d
- 7. b
- 8. a
- 9. a
- 10. c

Chapter 8: The Future Earth

- 1. (True) The original creation was perfect.
- 2. (True) The Flood was God's judgment for a sinful world.
- 3. (False) The world **will be** judged again.
- 4. (True) The Bible states that Christ will return to earth.
- 5. (False) This present earth will **be completely melted and re-created**.
- 6. (True) Everyone has sinned.
- 7. (True) Christ died on the cross to pay the penalty for our sins.