The Fossil Book Study Guide

Introduction

Answer the questions in complete sentences.

1. What do paleontologists do?
2. What can we use as a key to understanding fossils and what they tell us about the history of life on earth?
3. What are the "four Cs" of biblical history?
4. What is evolution?
5. What can we abbreviate evolution as, and what do the letters stand for?

True or False. If the answer is false, explain why.

1. The outer layers of the earth's crust look like the scene of a horrible worldwide catastrophe.
2. Paleontologists only study dinosaurs.
3. God created a world filled with disease, death, and disaster.
4. Most of the branches of modern science were started in the 1600s and 1700s by scientists who firmly believed in the "four Cs" of biblical history.
5. Evolution became popular in the 1900s because of the writings of Charles Lyell and Charles Darwin.

Chapter One: Fossils, Flooding, and Sedimentary Rock

Answer the questions in complete sentences.

1. What is a fossil?
2. Name three kinds of sedimentary rock.
3. What creates fossils — the right conditions or lots of time?
4. What are the two most important conditions for turning sediments into rocks?
5. What is a good way to tell a true fossil from a modern specimen?
6. What are coprolites?
7. What are gastroliths?
8. How long have scientists calculated that it would take the world's oil reserves to leak to the surface because of pressure? What does that mean for the age of the earth?
9. What are polystrates?
10. How does creationist geologist Dr. Steve Austin propose that coal formed?

True or False. If the answer is false, explain why.

1. Scientists have been studying fossils for 500 years.
2. Creationists can work on a "dig" side by side with evolutionists and agree on the little questions.
3. It's the proper conditions, not time, that form rocks and fossils.
4. The difference between a fossil and the remains of a modern (recently dead) plant or animal can never be determined by color and/or weight.
5. Many complete skeletons of *T. rex* have been found.
6. Paleontologists use the word *mummy* for fossils formed when a creature dries out completely.
7. Preserved physical features such as ripple marks, mud cracks, raindrop impressions, and cylinders of fused sand that show where lightning struck are interesting to paleontologists because they are true fossils.
8. The volcanic eruption of Mount St. Helens in Washington state on May 18, 1980, provided dramatic support for creationist geologist Dr. Steve Austin's theory of coal formation.
9. Belief in millions of years makes it easy to understand fossils.
10. Oil deposits are millions of years old.

Chapter Two: Geologic Column Diagram

Answer the questions in complete sentences.

1. What are four good places to find fossils?
2. How many major geologic systems have paleontologists identified?
3. What is a geologic system?
4. What is the difference between the way that creationists and evolutionists view different geologic systems?
5. According to the Bible, when were the ancestors of all organisms created?
6. What is the difference between the way that evolutionists and creationists use the word *first*?
7. What kinds of creatures are found in the Cambrian system?
8. How long did it take the flood waters to cover "all the high hills under the whole heavens" (Gen. 7:19)?
9. What are the three "supersystems" the 12 major geologic systems can be grouped into?
10. What is the Cambrian Explosion?

True or False. If the answer is false, explain why.

1. Fossils are usually found together in distinctive groups.
2. The three "supersystems" that the 12 major geologic systems can be divided into are the Cambrian, Jurassic, and Triassic systems.
3. The complete geologic column is found in many places all over the earth as a sequence of rock.
4. Known as the "Cambrian Explosion," complex beginnings for all major animal groups are found in fossils at the base of the geologic column.
5. For creationists, the GCD is supposed to show a stratigraphic series of simple-to-complex evolutionary changes.
6. Differences between Flood geology and evolution are so great that those differences affect the meanings of simple words like *first, last, older, younger, time, place, age, zone,* and *series*.
7. Flood geologists use *first* to mean "first evolved" while evolutionists use *first* to mean "the first plant or animal of a certain kind to be buried in the Flood."
8. Scientists generally agree that fossils on the bottom of the GCD are older than fossils on top of them.
9. Flood geologists think that trilobites, dinosaurs, land plants, and people all lived at the same time but in different places in the pre-Flood world.
10. Evolutionists like to call rocks with lots of dinosaurs found together a "Dinosaur Zone."

Chapter Three: Flood Geology vs. Evolution

Answer the questions in complete sentences.

1. Where did evolutionists frustrated by the Cambrian explosion of life hope to find support for their belief in simple beginnings?
2. Where are what evolutionists call the oldest plant and animal fossils on earth found?
3. Do the oldest (first-preserved) fossils show evidence for evolution or creation?
4. What formed the Grand Canyon, a lot of time or a lot of water?
5. What are paraconformities?
6. How do Flood geologists explain paraconformities?
7. Who proposed the breached dam concept for the rapid formation of the Grand Canyon?
8. What modern phenomenon provided support for the breached dam theory of rapid formation of the Grand Canyon?
9. Are worms, such as night crawlers, simple or complex? Do they show evidence for creation or evolution?
10. What are stromatolites?

True or False. If the answer is false, explain why.

1. Evolutionists believe that the stratigraphic series in the geologic column diagram shows millions of years of evolution from a few simple life forms to the many complex and varied forms of life we have today, caused by time, chance, struggle, and death, with no need for God.
2. Evolutionists found support for their belief in simple beginnings for life in pre-Cambrian rock.
3. Some evolutionists admit that fossils suggest complex beginnings and multiplication after kind, but they still want people to believe it took millions of years to stack up rocks in layers like we see at the Grand Canyon.
4. About one-third of what comes out of the average volcano is water vapor.
5. Fossil systems high in the GCD are never found directly on top of systems much lower with gaps of millions of evolutionary years.
6. Paraconformities are direct and scientific evidence that the evolutionists' millions of years are true.
7. The roundness of the sand grains, steepness of the cross-beds, and preserved animal trackways all suggest scientifically that the Coconino Sandstone was formed underwater, not in a desert — further confirming Flood geology.
8. The breached dam concept for the rapid formation of the Grand Canyon is only accepted by creationists.
9. The Grand Canyon is a good example of the 4 Cs of creation.
10. If evolution were true, all sedimentary deposits would be found in large areas with many fossils.

Chapter Four: Kinds of Fossils I: Invertebrates

Answer the questions in complete sentences.

1. What is the most common kind of fossil found?
2. What is convergence?
3. How do creationists explain what evolutionists call convergence?
4. What does gastropod mean?
5. What are the two basic shapes that cnidarians come in?
6. What would have happened to reefs during Noah's flood, and has there been enough time to grow back reefs like the Great Barrier Reef since the flood?
7. Which geologic system is referred to as the "Age" or "Zone of Crinoids"?
8. What does arthropod mean, and what are a few examples of arthropods?
9. What are the two groups of seashells that are sometimes referred to as "fossil weeds"?
10. What are diatoms?

True or False. If the answer is false, explain why.

1. The squid has the largest eye in the world at ten inches across.
2. Clams are trivalves, meaning they have two shells joined at a hinge.
3. Closed clams testify to slow, gradual burial on a small scale.
4. The flat-to-coiled oyster story was once considered one of the best "proofs" for evolution, but was disproved when it was shown that the series was ecological, not evolutionary.
5. Nautiloid fossils are great illustrations of TCSD evolution.
6. Soft bodied forms of cnidarians are common as fossils.
7. Extinction is easy to prove.
8. Arthropod fossils in shale contradict evolution and provide powerful support for creation.
9. The trilobite had the same vision problem that scuba divers have where things underwater look bigger and closer than they really are.
10. Not all sponges are soft and squishy; many species have hard skeletal structures of crystal-like spines called spicules.

Chapter Five: Kinds of Fossils II: Vertebrates

Answer the questions in complete sentences.

1. What are vertebrates? Are their fossils common?
2. What does amphibian mean? What are some examples of amphibians?
3. What is keratin?
4. Do fossil reptiles offer support to creationists or evolutionists? Why?
5. Is the *Archaeopteryx* a good example of an evolutionary link between birds and reptiles?
6. Why are bird bone fossils rare?
7. What created the "fossil hash" found in Florida's sedimentary deposits?
8. What are the two parts of an evolutionary series?
9. Is the horse series taught in many public schools still considered a valid evolutionary series?
10. Could the milk that platypi produce have evolved from sweat?

True or False. If the answer is false, explain why.

1. Amphibians have the most DNA per cell of any animal.
2. The living coelacanth found in the Indian Ocean completely confirmed evolutionists' story about them.
3. All animals with sharp, pointed teeth are carnivores.
4. Teeth tend to make superb fossils because they have a very hard coating that doesn't break down easily.
5. The presence of protein, DNA, and blood cells in some dinosaur bones tell us that dinosaur fossils are only thousands of years old at most, not millions.
6. There are thousands of fossils of "sceathers," a transitional form between scales and feathers.
7. Fossil bird bones are common.
8. With their huge size and claws, giant ground sloths were carnivores.
9. Fossil discoveries have confirmed the horse series of evolution.
10. When the platypus was first reported to scientists in 1795, some thought it was a fake stitched together by taxidermists.

Conclusion

Answer the questions in complete sentences.

1. What did Darwin say about fossils and their support for evolution?
2. Are the first buried fossils complex or simple? Does that support evolution or creation?
3. How do fossils illustrate corruption?
4. Do evolutionists and creationists agree that floods are ideal conditions for forming fossils?
5. Did man's sin produce only man's death, or all death?

True or False. If the answer is false, explain why.

1. The fossils we find offer strong support for TCSD evolution.
2. The first fossilized member of each major group of animals is just as complete and complex as it is today, and with all the features that separate its kind from all the others.
3. Fossils do not illustrate the corruption of creation caused by mankind's sin.
4. Several lines of scientific evidence suggest that it was a lot of time that formed fossil deposits.
5. The preservation of "living fossils" and the multiplication of groups over the earth point toward the final restoration and new life in Christ.

Application: How to Build Your Own Fossil Collection

Answer the questions in complete sentences.

1. What kinds of rocks are best for finding fossils?
2. What kind of permission do you need to hunt fossils on private property?
3. What kinds of fossils would you display under creation in the four Cs of biblical history?

True or False. If the answer is false, explain why.

1. Fossils are usually found in igneous and metamorphic rocks.
2. Fossil hunting in national parks or public preserves is common and requires no special permission.
3. Quarries are great fossil sites.

The Fossil Book Study Guide Answers

Introduction

Answer the questions

1. Paleontologists study fossils — billions of dead things, buried in rock layers, laid down by water, all over the earth.
2. We can use the Bible as a key.
3. The "four Cs" of biblical history are: God's perfect world (creation), ruined by man (corruption), destroyed by Noah's flood (catastrophe), to be restored to new life in Christ (Christ).
4. Evolution is the belief that life started by chance, and millions of years of struggle and death slowly changed a few simple living things into many complex and varied forms through stages.
5. We can abbreviate evolution as TCSD – time, chance, struggle, and death.

True or False

1. True
2. False —Paleontologists study all kinds of fossils, not just dinosaurs.
3. False — God created a perfect world of peace and harmony, but mankind rebelled against God, and that sin brought disease, death, and the disaster called Noah's flood.
4. True
5. False — Evolution became popular in the 1800s.

Chapter One: Fossils, Flooding, and Sedimentary Rock

Answer the questions

1. A fossil is the remains or trace of a once-living thing preserved by natural processes.
2. Three types of sedimentary rock are limestones, shales, and sandstones.
3. The right conditions create fossils. No matter how much time you have, without the right conditions, fossils will not form.
4. Water and rock cement in the right amounts are the two most important ingredients.
5. Letting the specimen dry and then carefully holding a lighted match under it is a good way to tell a true fossil. A modern bone will smell like burnt hair. This is called a match test.
6. Coprolites are fossilized animal droppings.
7. A gastrolith is a stone swallowed by an animal to help it grind up its food.
8. Scientists have calculated that it would take less than 200,000 years. That means the earth's crust must be no more than thousands of years old, not millions.
9. Polystrates are fossils that extend vertically through many layers.
10. Dr. Austin proposed that coal formed from huge mats of vegetation, ripped up in violent storms, torn apart by wave and current action, and deposited in layers along with other sediments. Weight of the sediments above would squeeze out excess water, keep oxygen out, and raise the temperature of buried plants. At a critical point, affected by clay minerals, the plants would begin to burn incompletely or char, turning into coal.

True or False.

1. False — Scientists have been studying fossils for only about 200 years.
2. True
3. True
4. False — The difference can often, but not always, be determined by color and/or weight.
5. False — Only a few complete skeletons have been found.
6. True

7. False — Although they are interesting to paleontologists, they are not true fossils because they are not the remains or traces of once-living things.
8. True
9. False — Belief in millions of years makes it harder to understand fossils.
10. False — Oil deposits are thousands, not millions, of years old.

Chapter Two: Geologic Column Diagram

Answer the questions in complete sentences.

1. Four good places to find fossils are along cliffs, cuts (road cuts), creeks, and quarries.
2. Scientists have identified 12 major geologic systems.
3. A geologic system is a grouping of rock layers identified by the fossils of the living things it contains.
4. Evolutionists believe that geologic systems represent organisms living at different times throughout history, while creationists believe that geologic systems represent organisms living in different places before Noah's flood.
5. The ancestors of all organisms were created on days 3, 5, and 6 of creation week.
6. Evolutionists use the word *first* to mean "first evolved" while creationists use it to mean "first to be buried in the Flood."
7. Heavy-shelled, bottom-dwelling sea creatures are found in the Cambrian system in greatest numbers, but examples of all the other major groups of sea creatures are also found.
8. It took 150 days or 5 months for the flood waters to cover the earth.
9. The three supersystems are the Paleozoic, Mesozoic, and Cenozoic.
10. The Cambrian Explosion is the sudden appearance of a wide variety of complex life forms in the lowest rock layer with abundant fossils.

True or False.

1. True
2. False — The three "supersystems" are the Paleozoic, Mesozoic, and Cenozoic.
3. False — The complete geologic column is only found as a diagram.
4. True
5. False — For creationists, the GCD shows a stratigraphic series of burial primarily during Noah's flood.
6. True
7. False — Flood geologists use *first* to mean "first plant or animal of a certain kind to be buried in the Flood," while evolutionists use *first* to mean "first evolved."
8. True — (But creationists think they are *months* older while evolutionists believe they are *millions of years* older.)
9. True
10. False — Evolutionists would call rocks with lots of dinosaurs the "Dinosaur Age."

Chapter Three: Flood Geology vs. Evolution

Answer the questions in complete sentences.

1. Evolutionists turned to pre-Cambrian rock.
2. What evolutionists call the oldest fossils are found in pre-Cambrian rock in Australia.
3. The oldest fossils show evidence for creation, not evolution (because they are very complex and fit into groups like we have today — well designed to multiply after kind).
4. A lot of water formed the Grand Canyon.

5. A paraconformity is a gap without erosion in the geologic column diagram. It breaks the time sequence assumed by evolution, and may suggest fossils from different environments were rapidly buried by a lot of water, not a lot of time.
6. Paraconformities are direct and scientific evidence that the evolutionist's millions of years are a myth. It means that one environment was directly deposited on top of another with little or no erosion, and no missing time.
7. Flood geologists such as Dr. Steve Austin of the Institute for Creation Research first proposed the breached dam concept.
8. The second modern eruption of Mount St. Helens in June 1982 provided dramatic support for the breached dam concept.
9. Worms are complex, not simple, having a brain, digestive systems with mouth, pharynx, esophagus, crop, gizzard, intestines, a pair of "kidneys" in most segments, and five "hearts." They are strong evidence of creation, not evolution.
10. Stromatolites are the world's "oldest" fossils, and are banded rock deposits formed by blue-green algae.

True or False.

1. True
2. False — Although they hoped to find evidence for their belief in simple beginnings in pre-Cambrian rocks, evolutionists were disappointed when these rocks showed complex beginnings, not simple beginnings.
3. True
4. False — About two-thirds of what comes out of the average volcano is water vapor.
5. False — Fossil systems high in the GCD are often found directly on top of systems much lower, with gaps of millions of evolutionary years.
6. False — They are evidence that the evolutionists' millions of years are a myth.
7. True
8. False — The evidence fits so well that some evolutionists now accept the idea.
9. True
10. False — If evolution were true, all sedimentary deposits would be found in small areas with few or no fossils.

Chapter Four: Kinds of Fossils I: Invertebrates

Answer the questions in complete sentences.

1. Seashells are the most common kinds of fossils found — over 95 percent of fossils found are seashells.
2. Convergence is the term evolutionists use to describe the phenomenon of two organs that look alike even though they did not come from a common ancestor with that organ — which is actually the opposite of evolution.
3. Creationists see convergence as another example of creation according to a common plan by the same Creator.
4. Gastropod means "stomach-footed," or the group of mollusks that walk on their stomachs like snails.
5. Cnidarians come in the umbrella shape, called a jellyfish or medusa, or the can-with-fingers shape called a polyp.
6. The reefs would have been destroyed by Noah's flood, but there has been plenty of time to grow back even the largest reef in the world, the Great Barrier Reef, with time to spare.

7. The Mississippian geologic system is called the "Age" or "Zone of Crinoids" because so many crinoid fossils are found in it.
8. Arthropod means "jointed leg." Insects, crabs, shrimp, spiders, centipedes, and millipedes are a few examples of arthropods.
9. Brachiopods and bryozoans are the two groups of seashells sometimes referred to as "fossil weeds."
10. Diatoms are microscopic, one-celled plants whose walls are decorated with glass in exquisite patterns.

True or False.

1. True
2. False — Clams are bivalves, not trivalves.
3. False — Closed clams testify to rapid, deep burial — perhaps yet another reminder of Noah's flood.
4. True
5. False — Nautoloid fossils are great illustrations of the four Cs of biblical earth history.
6. False — Soft-bodied forms are rare as fossils.
7. False — Extinction is hard to prove, since we can't look everywhere at the same time.
8. True
9. False — The trilobite's compound eye had a double lens system for precise underwater vision and saw things as they really were.
10. True

Chapter Five: Kinds of Fossils II: Vertebrates

Answer the questions in complete sentences.

1. Vertebrates are animals with backbones. Their fossils are not very common and are found in abundance only in special locations.
2. Amphibian means "double life." Frogs and salamanders are examples of amphibians.
3. Keratin is the protein that makes up our hair and fingernails, which also either covers or makes up claws, horns, and scales.
4. Fossil reptiles offer strong support to creationists because they look the same as reptiles living today, except that there was a greater variety of kinds and larger sizes in the past.
5. No, *Archaeopteryx* is just a strong flying bird; its so-called reptilian features are found on other birds.
6. Fossil bird bones are rare because many bird bones are hollow, and are great for flight, but not for preservation as fossils.
7. The catastrophe of ice and super-storms that probably followed Noah's flood created the "fossil hash."
8. The two parts of an evolutionary series are: (1) a structural series that suggests how certain structures changed into other structures, and (2) a fossil series that shows the differences in structure occurring in proper sequence from lower to higher in the GCD.
9. No, evolutionists have "discarded or modified" this series.
10. No, milk is a highly nutritious mixture of several different kinds of complex foods, and sweat is a waste product full of salts and various toxins.

True or False.

1. True
2. False — The coelacanth completely contradicted the evolutionists' story.
3. False — Many animals with sharp, pointed teeth today are vegetarians.

4. True
5. True
6. False — Although there should be many fossils of this transitional form if evolution's story is true, there are none.
7. False — Because of the hollow, lightweight construction of bird bones, bird fossils are not common.
8. False — Although it was huge and had large claws, the coprolites of the giant ground sloth prove that it was a vegetarian.
9. False — Fossil discoveries have forced evolutionists to discard the horse series.
10. True

Conclusion

Answer the questions in complete sentences.

1. Darwin said that fossils are "the most obvious and serious objection to the theory" of evolution.
2. The first buried fossils are complex, which supports creation.
3. Fossils are dead things, and some show evidence of disease and bite marks. Also, almost every group found as fossils shows evidence of decline in variety and size.
4. Yes, all scientists agree that floods are ideal conditions for fossil formation.
5. According to the Bible, man's sin produced all death, not just man's death.

True or False.

1. False — The fossils we find produce strong support for the 4 Cs of biblical history.
2. True
3. False — Fossils do illustrate the corruption of creation caused by mankind's sin.
4. False — Several lines of evidence suggest it was a lot of water, not a lot of time, that formed fossil deposits.
5. True

Application: How to Build Your Own Fossil Collection

Answer the questions in complete sentences.

1. Sedimentary rocks such as limestones, shales, and sandstones are best for finding fossils.
2. To hunt on private property, you need the permission of the landowner, and to tell them when, where, and for how long you would like to collect.
3. Under creation, you could put fossils that show complex beginnings like trilobites and nautiloids, or specimens comparing modern organisms and fossils, like clams, snails, crabs, fern leaves, or ants to show multiplication after kind.

True or False.

1. False — Fossils are not usually found in igneous and metamorphic rocks that have been very hot, but in water-laid sedimentary rock.
2. False — Hunting in national parks or public preserves is usually forbidden or requires a special research permit.
3. True