

THE
FOSSIL
BOOK

**STUDY GUIDE
& WORKBOOK**



answersingenesis.org
believing it. defending it. proclaiming it.

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Introduction

Terms

Evolution

Paleontologist

Questions

1. When did most of the branches of modern science begin?

2. True/False (If false, explain your answer.) Most of the scientists who began the modern sciences firmly believed in a biblical history.

3. Who were the two men given credit for popularizing the modern teaching of evolution?
4. What does TCSD stand for?
5. List and describe the four C's of biblical history discussed in this book.

Activity

Who was Charles Lyell? Research his life and his impact on long-age ideas. Write a short paper summarizing your findings.

1

Fossils, Flooding, and Sedimentary Rock

Text: Pages 6–17

Terms

Archeology

Artifacts

Fossil

Geology

Paleontology

Permineralized fossils

Polystrates

Pseudofossils

Sediments

Trace fossils

Questions

1. What types of sedimentary rocks are fossils normally found in?
2. List two agents that erode and deposit sediments.
3. Which agent is more powerful?

4. What are the two most important conditions for turning sediments into rocks?

5. True/False? (If false, explain your answer.) Time is a vital part of rock or fossil formation.

6. What are the two most common rock cements?

7. Give three examples where calcium carbonate can be found.

8. Give one example where silica can be found.

9. What type of event would provide the right conditions to form fossils?

10. Briefly describe how a fossil can form.

11. Why must fossilization begin quickly?

12. What is the most common type of fossil?

13. What is the difference between permineralized wood and petrified wood?

14. Why is coal considered to be a fossil fuel?

15. Describe how coal forms (based on the research of Dr. Steve Austin).

16. What catastrophic event in May of 1980 supports Dr. Austin's theory?

17. How do polystrate fossils imply rapid burial?

Activities

1. Write a short research paper describing how coal is formed from a Bible-based perspective.
2. Take a field trip to your local natural history museum. How many of the different types of fossils described in this chapter are on display there? Take along a sketch pad and pencil and draw a representative from the different fossil types (permineralized, mold, cast, carbon films, preserved soft parts, amber, trace, etc.). Label each drawing with the name of the fossil, the type of fossil, and where it was found.
3. Find out if you live near a coal mine that offers tours, and plan a visit.

2

Geologic Column Diagram

Text: Pages 18–25

Terms

Index fossil

Geologic column

Living fossils

Trilobite

Questions

1. In what type of rock are most fossils found? Where can we see these layers of rock?
2. What do evolutionists claim the geologic column represents?
3. According to Flood geologists, what does the geologic column show?
4. How many major geologic systems have been named? How many “super systems”?
5. Explain why fossils of sea creatures are found throughout the geologic column while animals and land plants tend to be found higher in the column.
6. What is the difference between how Flood geologists and evolutionists use the words “first” and “last”?

7. Who said that fossils are “perhaps the most obvious and serious objection to the theory of evolution”? Why is this significant?

Activities

1. In the first half of the 19th century, there were a number of Christian writers who raised biblical, logical, and geological objections to old-earth ideas. These men became known as “Scriptural geologists.” Choose three of them to research. What did they teach about fossils? Write a short paper describing your findings. Visit www.AnswersInGenesis.org/go/scriptural-geologists.
2. Begin researching what types of rock layers and fossils are prevalent in your area. Do you have pre-Flood, Flood, or post-Flood rocks?

3

Flood Geology vs. Evolution

Text: Pages 26–33

Terms

Cambrian explosion

Cavitations

Paraconformities

Stromatolites

Questions

1. What is the lowest system in which fossils are found?
2. How have evolutionists tried to deal with the complex life seen in the fossils found in Cambrian layers?
3. True/False (If false, explain your answer.) Fossils found in pre-Cambrian rock are non-complex life forms.
4. About how much of a volcano's eruption emission is water vapor?
5. What tilted the basement rocks of the earth's surface?
6. How do the crystalline basement rocks found in Grand Canyon give testimony against millions of years of erosion?

7. Describe the “breached dam” concept for the formation of Grand Canyon.
8. What event supported the Flood geologists’ interpretation of Grand Canyon’s formation?

Activities

1. Find out more about Flood geology by visiting www.AnswersInGenesis.org/go/geology or www.AnswersInGenesis.org/go/fossils. Or watch *Biblical Geology: Properly Understanding the Rocks* or read *Grand Canyon: A Different View* (both available from AnswersBookstore.com).
2. Learn about Grand Canyon first-hand by rafting through it on the Colorado River! Answers in Genesis offers rafting tours through Grand Canyon during most summers. To find out more, visit www.AnswersInGenesis.org and type “Grand Canyon Raft Trip” in the search engine.

4

Kinds of Fossils 1: Invertebrates

Text: Pages 34–49

Terms

Arthropod

Cephalopods

Coelenterates (cnidarians)

Corals

Diatoms

Echinoderms

Gastropods

Invertebrate

Malacology

Mollusks

Nautiloids

Palynology

Polyps

Protozoan

Spicules

Sutures and septa of nautiloids

Questions

1. Over 95% of all fossils found are _____.
2. True/False (If false, explain your answer.) Sometimes snail shell lids and the rest of the shell are found in two totally different layers of sediment.
3. How do fossil clams testify to a rapid burial?
4. What is perhaps the best mollusk evidence of creation and Flood geology?
5. Why do some claim the nautiloid is proof of evolution?
6. How does the evolutionary claim in question 5 fall short?

7. What is the largest coral reef in the world?

8. True/False (If false, explain your answer.) Present-day coral reefs could not have grown to their present size in the few thousand years since the Flood.

9. Which layer of the geologic column is referred to by evolutionists as the Age of Crinoids and Flood geologists as the Zone of Crinoids?

10. How do the crinoid fossils found in central United States testify to the Flood?

11. Insect fossils are rare since their hard outer layer decomposes easily after death. However, insect fossils with delicate details have been found. How is this possible?

12. What are the first animals fossilized in abundance?

13. How does the complexity of these first fossils disprove evolution?

14. How did fossils of sea creatures end up on the top of mountains?

Activities

1. Make your own fossil.

Materials needed: Plaster of paris or play dough, paper plates or aluminum pie plates, objects to press into medium (leaves, dinosaur toys, etc.)

1. Pour the plaster of paris into aluminum pie plates or paper plates (or pass out jars of play dough and a paper plate)—one plate or jar per child. Have children press objects (or hands) into the plaster or play dough and lift them off, leaving the imprint behind. Allow to dry. Paint if desired.

2. Bury your fossil and go on an excavation. Use the proper tools and techniques (found in the “Application” section of this book) and practice extracting your fossil.

2. Find out more about diatoms. Visit www.

AnswersInGenesis.org/go/diatoms. Find pictures of the colorful plants which you can include in this workbook.

5

Kinds of Fossils 2: Vertebrates

Text: Pages 50–67

Terms

Evolutionary series

Metamorphosis

Splint bones

Vertebrates

Questions

1. What are the five groups of vertebrates?
2. Which of the following has the most DNA per cell of any other animal group?
 - a. amphibians
 - b. birds
 - c. fish
 - d. reptiles
 - e. mammals
3. Coelacanths were once thought to be a transitional form between fish and amphibians. How was this claim disproved?
4. Explain what the Bible teaches about animals that eat meat today.
5. Discuss how dinosaurs can be explained by the biblical account of creation and the Flood.

6. What were the dimensions of the Ark?

7. Which dinosaurs were likely on Noah's Ark during the Flood?

8. Discuss two biblical explanations for the extinction of dinosaurs.

9. Why should Archaeopteryx not be considered a missing link?

10. Explain why the alleged sequence of horse hooves does not prove evolution.

11. Choose your favorite fossil and explain how it can be a "missionary fossil."

Activities

1. Find out more information on the Ice Age by reading *The Weather Book* and *Life in the Great Ice Age*, and by visiting www.AnswersInGenesis.org/go/ice-age and www.AnswersInGenesis.org/go/mammoth.
2. Find out more about the so-called “transitional forms” by visiting www.AnswersInGenesis.org/go/fossils. Choose one alleged transitional series (e.g., horse, whale, apeman, dinosaur-to-bird) to research in detail. Write a short paper detailing your findings.
3. Write a three-paragraph paper about how the platypus testifies to a Creator. (See also www.AnswersInGenesis.org/go/platypus.)

Conclusion

Text: Pages 68–71

Questions

1. Discuss how the fossil record supports the biblical account of creation.

2. Discuss how the fossil record supports the biblical account of the corruption of the earth.

3. Discuss how the fossil record supports the biblical account of a global Flood.

4. Discuss how the fossil record supports the biblical account of God's mercy on His creation.

Activities

1. Using the information you've learned so far and in the "Application" section of this book, plan a trip to a nearby cliff, cut, creek, or quarry to hunt for fossils. If you don't live in an area that is fossil-rich, consider spending your next family vacation in such a place. Make sure you have the proper permits, if applicable!
2. Creation Studies Institute offers several exciting fossil-finding expeditions. For more information on their tours, visit www.CreationStudies.org
3. Learn more about living fossils by visiting www.AnswersInGenesis.org/go/living-fossils.
4. Read the newspaper for articles about newly-discovered fossils. Clip out each article, place them in a journal, and then critique each one from a biblical perspective.

Answer Key

Introduction

1. During the 1600s and 1700s
2. True
3. Charles Lyell and Charles Darwin
4. Time, chance, struggle, and death
5. Creation (God created all things in six actual days about 6,000 years ago. The completed creation was “very good”), corruption (Adam’s sin ushered death, disease, sickness, pain, etc. into the world), catastrophe (God judged the wickedness of mankind with a global, earth-covering flood during Noah’s day, around 4,500 years ago), and Christ (Jesus Christ came to earth to redeem mankind from the curse of sin and death).

Chapter 1

1. Flaky shale, gritty sandstone, or chalky limestone
2. Wind and water
3. Water
4. Water and rock cement in the right amounts
5. False. Rocks and fossils can form quickly given the right conditions. Long periods of time are not needed to form rocks and fossils
6. Calcium carbonate and silica
7. Limestone, bottom of tea kettle, in Tums and Roloids, chalk
8. Silica gel packs are placed in boxes of electronic equipment.
9. A flood
10. Answers may vary slightly; when a plant is buried in sediment under flood conditions, the plant is preserved when the heavy sediment weight squeezes out extra water and encourages the growth of cement minerals that turn the plant into a fossil.
11. The plant or animal needs to be preserved quickly before it begins to decompose.
12. A permineralized fossil
13. Permineralized wood has minerals in its pore spaces but still has wood fibers, while minerals have completely replaced the wood but preserved the pattern in petrified wood.

14. Coal is the charred remains and carbon atoms of once-living plants, making it a fossil. Coal burns, making it a fuel.
15. Huge mats of vegetation were ripped up in violent storms, torn apart by the waves and currents, and deposited in layers. Sediment on top of these layers then squeezed out water and raised the temperature of the buried plants. The plants would then begin to char, turning into coal
16. The eruption of Mount St. Helens
17. If the layers surrounding the polystrate item had built up slowly over millions of years, the tops of the polystrate item would rot away, even if the bottoms were fossilized.

Chapter 2

1. Sedimentary rocks (limestone, shale, sandstone); cliffs, cuts, creeks, and quarries
2. Stages of evolutionary development over millions of years
3. A series of burials
4. 12; 3
5. Since they were buried later in Noah's Flood, paleosystems with land plants and animals occur higher in the geologic column diagram than those with only sea creatures, but fossils of sea life occur in all geologic systems or eco-sedimentary zones since the Flood waters eventually covered all the land.
6. Flood geologists use the word "first" to refer to the first to be buried by the Flood. They use the term "last" to

refer to the last to be buried in the Flood. Evolutionists use the word “first” to refer to the first to evolve, meaning that nothing lived before it did. They use the word “last” to refer to the last surviving of its kind before it evolved into something else or became extinct.

7. Charles Darwin; Charles Darwin realized that evolution needed viable evidence of transitions from one animal into another; without them, evolution could not be validated.

Chapter 3

1. Cambrian
2. They tried to look for simple life forms in pre-Cambrian rock.
3. False. Jellyfish and segmented worms are anything but simple.
4. Two-thirds
5. The waters that burst out of the deep during Noah’s Flood
6. If the millions-of-years scenario were true and erosion occurred gradually, the softer rock would be gone and the hard rock would stick up into the sediment above. However, the tilted layers have been sheared off in a nearly straight line.
7. The bottom layers were most likely formed in the years before the Flood and sheared off during the beginning stages of the Flood. The upper layers were set into place during the Flood. Tectonic activity pushed these layers up as the water receded from the earth’s surface during the later stages of the Flood. Water became trapped by

earthen dams, which finally broke years after the Flood and released water to tear away the earth's surface. These cascades of water followed the easiest path downhill, which is now where we see the Colorado River through the gorge of Grand Canyon.

8. Mount St. Helens

Chapter 4

1. Seashells
2. True
3. Many fossil clams are found with both sides of the shell still together. That means the clam must have been buried so deeply and so fast that it couldn't even open its shell to burrow out.
4. Shelled squids
5. The sutures of nautiloids vary stratigraphically from smooth to wiggly to very wiggly. Evolutionists use this to "prove" simple to more complex lifeforms.
6. First, the series starts with a very complex animal at the bottom of the GCD. Second, the first-buried form is also the fittest, since it's the only survivor. Third, the animal never evolved from anything or into anything. Fourth, there are few suggestions and no agreement on the survival value of having a wiggly suture. Fifth, there are reversals of the sequence evolutionists expected.
7. Great Barrier Reef in Australia
8. False. Scientists have measured coral growth and found that the largest reef in the world could have formed in less than 4,000 years.

9. Mississippian layer
10. They show that those areas were at one time completely covered by water.
11. It is possible that the volcanic activity that accompanied the Flood released toxins into the water that prevented the decomposition of the insects. Silt and clay buried the insects and settled quickly in briefly quiet water, solidifying fast enough to prevent later currents from tearing apart the fragile specimens.
12. Trilobites
13. Evolution assumes that the earliest fossils, which are found in the lowest layers, would be the most primitive and least complex since they hadn't yet evolved into more complex beings. However, since these fossils reveal complex creatures of design, they disprove the idea that non-complex beings changed into complex beings.
14. The turbulent Flood waters covered the entire earth, including the high hills (Genesis 7:19). Then the mountains rose, and the valleys sank down (Psalm 104:8). At the end of the Flood, God raised up the layers that were below the sea, lifting sea-creature fossils even to the tops of earth's highest mountains.

Chapter 5

1. Fish, amphibians, reptiles, birds, and mammals
2. A.
3. Live coelacanths were found in the Indian Ocean and near Indonesia. There were no elbow or wrist joints

as evolutionists once claimed; the stiff fin was used for steering and swimming, not walking. Their organs worked more like those in a shark, not those in a frog. The fish did not live in ponds; it lived in the deep ocean.

4. God created all animals and people in the beginning to eat only plants. It was only after man's sin corrupted God's perfect creation that some animals began to eat other animals, and it was only after the Flood that God gave mankind permission to eat meat.
5. Dinosaurs were created on Day 6 along with the other land animals and people. Two representatives of the various dinosaur kinds were on the Ark. Since the average height of dinosaurs was about the size of a small pony, and since younger dinosaurs were smaller than older ones, they would have fit on Noah's Ark during the global Flood. Those that weren't on the Ark perished in the Flood. Many were buried in the muddy sediments. Those that survived the Flood on the Ark repopulated the earth after disembarking, although most eventually died from various causes.
6. 450 feet long; 75 feet wide; 45 feet high (150 x 25 x 15 meters)
7. They were likely young adults since God desired them to replenish the earth after the Flood.
8. The first explanation is because climate and soil conditions changed, dinosaurs had a difficult time surviving in that "new" world. The second explanation is that they were over-hunted by people after the Flood. Both are certainly possibilities, but we are not absolutely certain why dinosaurs went extinct.

9. Features in *Archaeopteryx* that evolutionists claimed to be transitional were and are found in other birds. The conclusion was made that *Archaeopteryx* was just a strong flying bird. Additionally, regular birds are found lower in the geologic column than *Archaeopteryx*.
10. First, the claimed earliest horse fossil is actually still seen today as a hyrax, or coney, not a primitive horse. Second, the change in horse size is not support for evolution since extreme sizes can be achieved simply by breeding. Third, the difference in hoof number can be explained by variation in horse kinds that were better able to live in different environments. Finally, the three-hoofed and one-hoofed horse kinds lived at the same time. These animals are not evidence for evolutionary transition.
11. Answers will vary.

Conclusion

1. The first buried fossils of each group are complete and complex, with all the features that separate its kind from all the others.
2. Since Adam sinned, the earth and all that was in it was cursed. Fossils themselves are dead things. Death was not part of God's original creation; it came as a result of sin. The fossil record also testifies to animals eating other animals; this did not occur before sin since there was no death before sin and since God originally created man and animals to be vegetarian.
3. See the seven explanations on pages 69–70.
4. God preserved His creation while enacting judgment

on the world. Noah, his wife, his sons, and their wives, along with two of every kind of unclean land animal and seven of every kind of clean land animal, were preserved by God's grace on the Ark. He promised judgment and yet made a way to escape that judgment. After the Flood, God restored His creation to life again. Man reproduced after his kind, animals reproduced after their kind, and plants reproduced after their kind, just as God commanded and desired.