The vital resource for grading all assignments from the General Science 2: Survey of Geology and Archaeology course, which includes:

- Biblical affirmation from the following four general areas of science: archaeology, geology, speleology (cave studies), and paleontology (fossil studies)
- Extended glossaries for all four books.

**OVERVIEW:** This is the suggested course sequence that allows two core areas of science to be studied per semester. You can change the sequence of the semesters per the needs or interests of your students; materials within each semester are independent of one another to allow flexibility. The following is how this teacher guide has been structured for the year of study. The first quarter covers archaeology and takes students on an exciting exploration of history and ancient cultures. The second quarter covers geology, guiding students to see what really carved the Grand Canyon, how thick the Earth's crust is, why the Earth is unique for life, and the varied features of the Earth's surface. This third quarter focuses on caves, exploring deep into the hidden wonders beneath the surface as cave expert Dr. Emil Silvestru takes students on this illuminating and educational journey. The fourth quarter concludes the year with a study of fossils, their origins, as well as how to collect them.

**FEATURES:** The calendar provides 5 daily lessons with clear objectives, and the worksheets, quizzes, and tests are all based on the readings from the four core subjects.

| Approximately 30 to 45 minutes per lesson, Monday through Friday | Includes answer keys for worksheets, quizzes, and tests | Worksheets for each section | Quizzes and tests are included to help reinforce learning and provide assessment opportunities | Designed for grades 7 to 12 in a one-year course to earn 1 science credit |

Emil Silvestru is a prospecting and exploration geologist. He is a cave expert born in Transylvania, Romania and is currently a writer, researcher, and speaker. Dr. Gary Parker lectures worldwide for both ICR and Answers in Genesis, has written five science textbooks and numerous creation books. David Down has been a field archaeologist for over four decades, excavating regularly in Israel, and offers special insight into the connections of archaeology and biblical history. Dr. John D. Morris is president of the Institute for Creation Research and currently travels and speaks on the topic of creation science.
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**Using This Teacher Guide**

**Features:** The suggested weekly schedule enclosed has easy-to-manage lessons that guide the reading, worksheets, and all assessments. The pages of this guide are perforated and three-hole punched so materials are easy to tear out, hand out, grade, and store. Teachers are encouraged to adjust the schedule and materials needed in order to best work within their unique educational program.

**Lesson Scheduling:** Students are instructed to read the pages in their book and then complete the corresponding section provided by the teacher. Assessments that may include worksheets, activities, quizzes, and tests are given at regular intervals with space to record each grade. Space is provided on the weekly schedule for assignment dates, and flexibility in scheduling is encouraged. Teachers may adapt the scheduled days per each unique student situation. As the student completes each assignment, this can be marked with an “X” in the box.

<table>
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<tr>
<th>Clock</th>
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**Course Description**

This is the suggested course sequence that allows two core areas of science to be studied per semester. You can change the sequence of the semesters per the needs or interests of your students; materials within each semester are independent of one another to allow flexibility. The following is how this teacher guide has been structured for the year of study. The first quarter covers archaeology and takes students on an exciting exploration of history and ancient cultures. The second quarter covers geology, guiding students to see what really carved the Grand Canyon, how thick the Earth’s crust is, why the Earth is unique for life, and the varied features of the Earth’s surface. This third quarter focuses on caves, exploring deep into the hidden wonders beneath the surface as cave expert Dr. Emil Silvestru takes students on this illuminating and educational journey. The fourth quarter concludes the year with a study of fossils, their origins, as well as how to collect them.
Students completing this course will:

- Evaluate how archaeologists know what life was like in the past, some of the difficulties in dating ancient artifacts, and how the brilliance of ancient cultures demonstrates God’s creation.
- Discover the beautiful, thriving ecology, unique animals, and fragile balance of this little-seen ecosystem in caves from around the globe.
- Review how the Flood affected fossil formation, the difference between evolutionists’ and creationists’ views on fossils, and the “four Cs” of biblical creation.
- Investigate what really carved the Grand Canyon, how thick the Earth’s crust is, why the Earth is unique for life, the varied features of the Earth’s surface.
- Explore the origin of fossils, how to start your own fossil collection, what kinds of fossils can be commonly found, the age of fossils, and how scientists find and preserve fossils.
- Learn both the techniques of the archaeologist and the accounts of some of the richest discoveries of the Middle East that demonstrate the accuracy and historicity of the Bible.
- Identify a creationary model for how caves form, a history of how caves have been used by humans for shelter and worship, and how old caves really are.

**Special Note:** High school students who take the course are expected to do a majority of the activities. The activities can be modified based on student interests and creativity, but should reflect an understanding of the core concepts being learned.
Optional Science Lab

There are a variety of companies that offer science labs that complement our courses. These items are only suggestions, not requirements, and they are not included in the daily schedule. We have tried to find materials that are free of evolutionary teaching, but please review any materials you may purchase. The following items are available from www.HomeTrainingTools.com.

Survey of Geology & Archaeology
The Cave Book
RM-CRYSGAR Flowering Rock Crystal Garden
The Fossil Book
RM-FSTUDY Fossil Study Kit
The Geology Book
RM-GEOBAG Geology Field Trip in a Bag
RM-ROCKMIN Rocks & Minerals of the U.S. Basic Set
# First Semester Suggested Daily Schedule

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First Semester-Second Quarter — *The Geology Book*

| Week 1 | Day 46  | Read Pages 4-10 • *The Geology Book* • (GB) |          |       |
|        |         | Planet Earth - Words to Know, Questions       |          |       |
|        |         | *Geology Intro. & Ch1: Worksheet 1* • Page 41 • (LP) |          |       |
|        | Day 47  | Planet Earth - Activities                     |          |       |
|        |         | *Geology Intro. & Ch1: Worksheet 1* • Page 42 • (LP) |          |       |
|        | Day 48  | Read Pages 10-19 • (GB)                       |          |       |
|        | Day 49  | The Ground We Stand On - Words to Know, Questions |          |       |
|        |         | *Geology Ch2: Worksheet 1* • Page 43 • (LP)   |          |       |
|        | Day 50  | The Ground We Stand On - Activities           |          |       |
|        |         | *Geology Ch2: Worksheet 1* • Page 44 • (LP)   |          |       |
Archaeology Worksheets

for Use with

The Archaeology Book
Words to Know

accession year

AD

archaeology

artifact

BC

carbon dating

ceramic

chronology

debris

EB

exile

exodus

hieroglyphs

LB

MB

millennium

non-accession year

pottery
synchronism

tell

**Questions**

1. What does the word archaeology mean?

2. For what three reasons were cities built on hills?

3. When did people first start using coins?

4. Why are inscriptions found on ancient pottery valuable to archaeologists?

5. What are the four main periods of archaeological time?

**Activities**

1. See if you can find a small piece of damp clay, or plasticine, and with the end of a screwdriver impress your name on it. This would then look like a seal impression.

2. Take some everyday items and set up an archaeological treasure hunt. Have an adult bury the items in shallow holes, covering them with a thin layer of soil. Carefully go about digging them up and classifying your treasures in a journal.
**Words to Know**

Asiatic
baulk
dowry
drachma
dynasty
mastabas
Nubia
Pharaoh

**Questions**

1. What is the Egyptian name for Egypt?

2. Who was the first Egyptian king to build a pyramid?
Activities

1. See if you can find a small cardboard or plastic box. Make some mud out of earth and a little water, mix some dry grass with it and put it into the box. When it is fairly dry turn the box upside down and lift it off the brick you have made. Let it dry.

2. Develop a chart with your family history or dynasty. Try to trace the ancestry of one parent or both, depending on the information you have available. List these as names on a graph or draw an actual tree with the branches representing family members.

3. Who built the biggest pyramid in Egypt?

4. What was the name of the Egyptian god of the Nile River?

5. What did the Egyptians in dynasty 12 mix with their bricks to hold them together?
Geology Worksheets

for Use with

The Geology Book
Scripture: Genesis 1:1–31; Genesis 3:17–21; Romans 6:23; Romans 8:22

Words to Know

- Principle of uniformity
- Principle of catastrophe
- Asthenosphere
- Plate

Questions

1. Operational science is the science that deals with repeatable, observable experiments in the present. Origins science deals with reconstructing events that have happened in the past. What is the key difference between “origins” and “operational” science?

2. There are two ways of thinking about the unobserved past. What are they?

3. Where is the true history of the earth found?

4. In what order did God create the heavens and earth? (e.g., describe what He created on Day 1, Day 2, etc.) See Genesis 1.
5. Write a short paragraph answering the question, “What is sin?”

6. What are the main “zones” into which the earth is divided?

7. What is the earth’s crust composed of?

8. What is the purpose of the earth’s atmosphere?

Activities

Review the text on pages 4-10 again. Two views of earth history are compared (uniformity and catastrophe). Make a chart of the comparisons – see if you can find three to five examples to include in your comparison.
Scripture: Genesis 1:1; Obadiah 1:3

Words to Know

- Igneous rocks
- Sedimentary rocks
- Metamorphic rocks
- Ripple marks
- Crossbed
- Concretions
- Metamorphism

Questions

1. This chapter lists three categories of rock, with each category containing a discussion on several types of rock. Draw an expanded version of the table on the next page.
   a. In the first column, list each type of rock mentioned in this chapter.
   b. In the second column, list the category under which the rock is found.
   c. In the third column, describe the composition of each rock type.
   d. In the fourth column, describe how the rock is formed.
   e. In the fifth column, make a list of where the rock is found today.
   f. Watch out for types within types! (We’ve done the first one for you!)
<table>
<thead>
<tr>
<th>Type</th>
<th>Category</th>
<th>Composition</th>
<th>Formation</th>
<th>Found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granite</td>
<td>Igneous</td>
<td>Quartz and feldspar with mica and hornblende</td>
<td>Formed when molten rock is cooled</td>
<td>Mountains Upper mantle</td>
</tr>
</tbody>
</table>

**Activities**

Start collecting stones/small rocks from around your area (or other areas to which you travel). Try to classify the type of rock you have found. Can you find samples of each rock you described in the above table?

**Note:** If you go to a National/State/local park, please ask permission to remove the stones/rocks you are collecting. Do not remove any rocks or stones from someone's garden without permission.
Cave Worksheets
for Use with
The Cave Book
Words to Know

karst

karst aquifers

Short Answer

1. What is the probable reason some of our ancestors may have entered the “underland” of cave systems?

2. The strange event near the______________ not only split the once unified population, but scattered those with different skills and abilities.

3. How much of the world’s drinking water comes from limestone (karst) terrains?

4. How much is it estimated to be by 2025?
Discussion Questions

1. What role did caves play for our ancestors?

2. How did the events surrounding the Tower of Babel affect the ancient groups of people who disbursed from that area?

Activities

1. Read through the account of the Tower of Babel (Genesis 11:1–9), and discuss issues that would have affected the various people groups when this event occurred.

2. Use Adams’ Chart of History to trace the lineage of various people groups from the time of the Tower of Babel to the early 1900s.
Words to Know

- acoustics
- Acheulean industry
- bas-reliefs
- cave paintings
- engravings
- Kyr
- Myr
- speleothems

Short Answer

1. Were there caves present before the Flood?

2. When does the Bible mention caves for the first time?

3. How many times is the word “cave” mentioned in the Bible?

4. Name three large animals that lived in caves prior to their extinction.

5. In what country is Longgupo Cave, which is believed to host the oldest stone artifacts?
6. What is the Twin River Cave in Zambia known for: (a) oldest human remains, (b) oldest burial site, or (c) art associated with burial rituals?

7. What are the three kinds of cave art that have been found?

8. Were Neanderthals a different species than us?

Discussion Questions

1. Why did humans move to caves after having lived in cities?

2. Why did humans worship inside caves?

3. Where is the largest number of cave paintings located? Why?

4. What is the main criterion to separate various human cultures?

5. Who were the Neanderthals?

6. What did the human remains from Shanidar Cave reveal about Neanderthal social life?

Activities

1. Do a keyword search for the word “cave(s)” in the Bible using a Bible concordance or online search. Examine the various reasons people used caves during the biblical period.

2. Use a plastic knife to carve a bar of soap into a stone axe head. Examine the different uses for an axe in a book or online resource.

3. With a large sheet of paper and paints (or chalk), recreate the look of cave paintings. You might consider using a dark room or garage with candles (under parental supervision), to sense the dark cave atmosphere.
Words to Know

- arthropods
- bidirectional air circulation
- cul-de-sac
- echolocation
- troglobites
- troglophiles
- trogloxenes
- unidirectional air circulation

Short Answer

1. Name at least three civilizations that have caves present in their mythology.

2. Which is the largest troglobite alive today?

3. Are bats: (a) trogloxenes, (b) troglophiles, or (c) troglobites?

4. What is the Movile Cave in Romania famous for?
5. What is the normal humidity inside most caves?

**Discussion Questions**

1. What happens when female bats give birth?

2. What is the longest period of cave habitation in modern times? Why did those humans choose to live inside a cave?

3. How can ice accumulate inside caves in a temperate climate?

4. What are the health benefits of caves?

**Activities**

1. The Dead Sea Scrolls contained fragments from the Old Testament books of Genesis, Exodus, Leviticus, Numbers, Deuteronomy, 1 and 2 Samuel, Psalms, Job, Isaiah, Daniel, Jeremiah, Ezekiel, and parts of the Minor Prophets. Pick a passage and write it out on a piece of paper. Roll it up to reconstruct the look of a scroll fragment that would have been discovered in the Qumran cave system.

2. Build a cave model with clay. Try to include forms that represent bidirectional airflow, cold air traps, and unidirectional airflow passages.

3. Do further research on cave creatures (fauna) and list the various types of creatures one might expect to find in a cave system.
Fossil Worksheets
for Use with
The Fossil Book
**Words to Know**

<table>
<thead>
<tr>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolution</td>
</tr>
<tr>
<td>Paleontologist</td>
</tr>
</tbody>
</table>

**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.

Activities

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

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.
   a. ________________________________
   b. ________________________________

3. Which agent is more powerful?

4. What two elements must exist in the right amounts for sediments to turn into rocks?
   a. ________________________________
   b. ________________________________

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?
   a. _____________________________________
   b. _____________________________________

7. Give three examples where calcium carbonate can be found.
   a. _____________________________________
   b. _____________________________________
   c. _____________________________________

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.
The Fossil Book

Words to Know

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 

Begin researching what types of rock layers and fossils are prevalent in your area. Do you have pre-Flood, Flood, or post-Flood rocks?
Quizzes & Tests Section
Define: (5 Points Each Answer)

1. accession year: ____________________________________________________________
2. AD: _____________________________________________________________________
3. BC: _____________________________________________________________________
4. carbon dating: _____________________________________________________________
5. EB: _____________________________________________________________________
6. LB: _____________________________________________________________________
7. MB: _____________________________________________________________________
8. baulk: ___________________________________________________________________
9. synchronism: ______________________________________________________________
10. mastabas: _________________________________________________________________

Multiple Answer Questions: (2 Points Each Blank)

11. What are the four main periods of archaeological time?
    a. ___________________     c. ___________________
    b. ___________________     d. ___________________

12. For what three reasons were cities built on hills?
    a. _____________________________________________________________________
    b. _____________________________________________________________________
    c. _____________________________________________________________________

Short Answer Questions: (4 Points Each Question)

13. What does the word archaeology mean? _______________________________________
    _______________________________________________________________________

14. When did people first start using coins? _______________________________________
    _______________________________________________________________________

15. What was the name of the Egyptian god of the Nile River? _____________________
    _______________________________________________________________________

16. What is the Egyptian name for Egypt? _______________________________________  
    _______________________________________________________________________

17. Who was the first Egyptian king to build a pyramid? __________________________
    _______________________________________________________________________

18. Who built the biggest pyramid in Egypt? _____________________________________  
    _______________________________________________________________________

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The Archaeology Book
Concepts & Comprehension
Quiz 1
Scope: Chapters 1-2
Total score: _____ of 100
Name

---

Define: (5 Points Each Answer)

1. accession year: ____________________________________________________________
2. AD: _____________________________________________________________________
3. BC: _____________________________________________________________________
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The Archaeology Book
Concepts & Comprehension
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Scope: Chapters 1-2
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The Archaeology Book
Concepts & Comprehension
Quiz 1
Scope: Chapters 1-2
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Name

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The Archaeology Book
Concepts & Comprehension
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    _______________________________________________________________________

17. Who was the first Egyptian king to build a pyramid? __________________________
    _______________________________________________________________________

18. Who built the biggest pyramid in Egypt? _____________________________________  
    ______________________________________________________________________
**Applied Learning Activity:** (12 Points Total; 1 Point Each Answer)

19. Identify the Pyramids, Temples, Tombs, and unique features on Giza Map:
   - Pyramid of Kufu
   - Valley Temple of Kufu
   - Pyramid of Menkaure
   - Valley Temple of Menkaure
   - Pyramid of Kahfre
   - Valley Temple of Kahfre
   - The Sphinx
   - The Temple of the Sphinx
   - Pyramid of Queens
   - Queen’s Tombs
   - Eastern Cemetery
   - Mortuary Temple
Define: (5 Points Each Answer)

1. Principle of uniformity: ____________________________________________________________
2. Principle of catastrophe: ___________________________________________________________
3. Sediment: _______________________________________________________________________
4. Metamorphism: ____________________________________________________________________

Multiple Answer Questions: (2 Points Each Blank)

5. There are two ways of thinking about the unobserved past. What are they? (3 Points Each Answer)
   a. _____________________________________________
   b. _____________________________________________

6. In what order did God create the heavens and the earth?
   Day 1. ________________________        Day 4. ________________________
   Day 2. ________________________        Day 5. ________________________
   Day 3. ________________________        Day 6. ________________________

7. What are the main “zones” into which the earth is divided?
   a. ________________________        d. ________________________
   b. ________________________        e. ________________________

8. List the three types of plateaus and give an example of each.
   a. ________________________        b. ________________________
   c. ________________________        d. ________________________
   e. ________________________        f. ________________________

9. List the four types of mountains and give an example of each type.
   a. ________________________        b. ________________________
   c. ________________________        d. ________________________
   e. ________________________        f. ________________________
   g. ________________________        h. ________________________
Applied Learning Activity: (4 Points Each Blank)

10. List which category the following types of rocks belong to.

Granite   a.________________
Marble    b._______________
Shale     c._______________
Limestone d._______________
Coal      e._______________
Rhyolite  f._______________
Slate     g._______________
Define: (5 Points Each Answer)

1. karst: ____________________________________________
2. Acheulean industry: __________________________________
3. bas-reliefs: _________________________________________
4. Kyr: _______________________________________________
5. Myr: ______________________________________________
6. Neanderthals: ______________________________________
7. speleothems: _______________________________________
8. karst aquifer: _______________________________________ 

Multiple Answer Questions: (2 Points Each Blank)

9. Name two large animals that inhabited caves prior to their extinction.
   a. _____________________________________________
   b. _____________________________________________

10. What are the three kinds of cave art that have been found?
    a. _____________________________________________
    b. _____________________________________________
    c. _____________________________________________

Short Answer Questions: (4 Points Each Question)

11. What is the probable reason some of our ancestors may have entered the “underland” of cave systems? ____________________________________________________________

12. What role did caves play for our ancestors? ____________________________________________________________

13. How much of the world’s drinking water comes from limestone (karst) terrains? ______________________

14. How much is it estimated to be by 2025? ______________________

15. The strange event near the ________________ not only split the once unified population, but scattered those with different skills and abilities.

16. How did the events surrounding the Tower of Babel affect the ancient groups of people who disbursed from that area? ____________________________________________________________

17. When does the Bible mention caves for the first time? ____________________________________________________________
18. In what country is Longgupo Cave, which is believed to host the oldest stone artifacts?

19. What is the Twin River Cave, in Zambia known for: (a) oldest human remains, (b) oldest burial site, or (c) art associated with burial rituals?

20. Were Neanderthals a different species than us?

**Applied Learning Activity: (10 Points)**

21. Explain the relationship between cave paintings and acoustics and the conclusion the author draws from this relationship.
The Fossil Book
Quiz 1
Scope: Intro. & Ch 1
Total score: _____ of 100
Name

Define: (5 Points Each Answer)

1. Evolution: _______________________________________________________
2. Paleontologist: ____________________________________________________
3. Permineralized fossils: _____________________________________________
4. Trace fossils: _____________________________________________________

Multiple Answer Questions: (2 Points Each Blank)

5. Who were the two men given credit for popularizing the modern teaching of evolution?
   a. _________________________________________________________________
   b. _________________________________________________________________
   c. _________________________________________________________________

6. List two agents that erode and deposit sediments. Which agent is more powerful?
   a. _________________________________________________________________
   b. _________________________________________________________________
   c. _________________________________________________________________

7. What two elements must exist in the right amount for sediments to turn into rocks?
   a. _________________________________________________________________
   b. _________________________________________________________________

8. What are the two most common rock cements?
   a. _________________________________________________________________
   b. _________________________________________________________________

9. Give three examples where calcium carbonate can be found.
   a. _________________________________________________________________
   b. _________________________________________________________________
   c. _________________________________________________________________

Short Answer Questions: (4 Points Each Question)

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

11. What does TCSD stand for?

12. What types of sedimentary rocks are fossils normally found in?
13. What type of event would provide the right conditions to form fossils?

14. Briefly describe how a fossil can form.

15. Why must fossilization begin quickly?

16. What is the most common type of fossil?

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

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

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

20. What catastrophic event in May of 1980 supports Dr. Austin’s theory?

21. How do polystrate fossils imply rapid burial?

**Applied Learning Activity: (1 Point Each Answer)**

List and describe the four C’s of biblical history discussed in this book.

22. a.  
   b.  

23. a.  
   b.  

24. a.  
   b.  

25. a.  
   b.  

Answer Keys
Chapter 1 – What Archaeology is All About – Worksheet 1

accession year — the year a king actually began his reign
AD — Anno Domini (the year of our lord); the years after the Christian era began
Archaeology — study of beginnings
Artifact — an item from antiquity found in an excavation
BC — Before Christ; the years before the Christian era began
carbon dating — calculating the amount of carbon left in organic material that has died
ceramic — something made of pottery
chronology — time periods; dates in which events happened
debris — discarded rubbish
EB — the Early Bronze Period
exile — a people sent out of their home country to another country
exodus — going out; applied to the Israelites leaving Egypt
hieroglyphs — Egyptian picture writing
LB — the Late Bronze Period
MB — the Middle Bronze Period
millennium — one thousand years
non-accession year — the first complete year of a king’s reign
pottery — a vessel made of clay fired in a kiln
synchronism — something happening at the same time
tell — a Hebrew word meaning “ruins;” applied to hills on which people once lived
1. A study about beginnings
2. Defense, heat, and floods
3. 600 B.C.
4. It helps them identify from which period the pottery comes.
5. Early Bronze, Middle Bronze, Late Bronze, Iron Age

Chapter 2 – Land of Egypt – Worksheet 1

Asiatic — in Egyptian terms, someone from Syria or Palestine
baulk — the vertical ridge left between two excavated squares in the ground
dowry — gift given to a prospective bride at the time of her marriage
drachma — a Greek coin worth about a day’s wages
dynasty — a succession of kings descended from one another
mastabas — mud-brick structures beneath which were tomb chambers
Nubia — a country south of Egypt now called Sudan
Pharaoh — title applied to many Egyptian kings

1. Misr
2. Zoser
3. Khufu
4. Hapi
5. Straw

Chapter 3 – The Hittites – Worksheet 1

amphitheater — a circle of seats surrounding an area where gladiators fought each other or fought wild beasts
Anatolia — mountainous area in central Turkey
bathhouse — a club where citizens could bathe in cold, warm, or hot water
inscription — writing made on clay, stone, papyrus, or animal skins

1. The Hittites
2. Hittites and Egyptians
3. Heth
4. Forty-six
5. William Wright

Chapter 4 – Ur of the Chaldees – Worksheet 1

centurion — a military officer in charge of a hundred men
Chaldees — people who used to live in southern Iraq
nomad — a person who lived in a tent that could be moved from place to place
papyrus — sheets of writing material made from the Egyptian papyrus plant

1. Four
2. Sir Leonard Woolley
3. He wanted to learn more about Ur before he excavated such an important site.
4. Sumerians
5. Evidence of human sacrifice

Chapter 5 – Assyria – Worksheet 1

bulla — an impression made on clay with a seal (plural: bullae)
Medes — people who used to live in northern Iran
scarab — model of a dung beetle with an inscription engraved on it for sealing documents
seal — an object made of stone, metal, or clay with a name engraved on it used to impress in soft clay

1. Henry Austin Layard
2. Nimrud
3. Jehu
Introduction & Chapter 1 – Planet Earth – Worksheet 1

**Principle of uniformity** — the scientific thought that past processes are no different than processes today, meaning everything happens by gradual process over very long periods of time

**Principle of catastrophe** — the scientific thought that sees evidence of rapid, highly energetic events over short periods of time, doing a lot of geologic work

**Asthenosphere** — a suspected area in the uppermost portion of the earth’s mantle where material is hot and deforms easily

**Plate** — huge regions of the earth identified by zones of earthquake activity

1. Origins science cannot be studied with repeatable, observable experiments in the present.
2. Uniformity (the present is the key to the past) and catastrophe (highly energetic events operated over short periods of time and did much geologic work rapidly)
3. In the Bible
4. Day 1: earth, space, time, light; Day 2: atmosphere; Day 3: dry land, plants; Day 4: sun, moon, stars, planets; Day 5: sea and flying creatures; Day 6: land animals, people
5. Sin can be defined as rebellion against God.
6. Crust, mantle, outer core, inner core
7. Continental crust (composed of granitic rock covered by sedimentary rock); oceanic crust (composed primarily of basaltic rock)
8. Provides the air we breathe, protects us from harmful cosmic radiation, and gives us weather

Chapter 2 – The Ground We Stand Upon – Worksheet 1

**Igneous rocks** — rock formed when hot, molten magma cools and solidifies

**Sedimentary rock** — rock formed by the deposition and consolidation of loose particles of sediment, and those formed by precipitation from water

**Metamorphic rock** — rocks formed when heat, pressure and/or chemical action alters previously existing rock

**Ripple Marks** — marks which indicate moving water flowed over a rock layer when the sediments were still muddy and yet to harden

**Crossbed** — areas of extremely large ripple marks

**Concretions** — concreted masses of sedimentary rock that has been eroded out of a softer area of rock

**Metamorphism** — a process of heat and pressure that causes one rock to alter into another

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<tr>
<td>Rhyolite</td>
<td>Igneous</td>
<td>Quartz and feldspar with mica and hornblende</td>
<td>Formed when molten rock erupts on land and solidifies</td>
<td>Land</td>
</tr>
<tr>
<td>Type</td>
<td>Category</td>
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<td>Formation</td>
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<td>------------</td>
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<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Obsidian</td>
<td>Igneous</td>
<td>Quartz and feldspar with mica and hornblende</td>
<td>Formed by the rapid cooling of lava as it flows on the surface of the ground</td>
<td>Land</td>
</tr>
<tr>
<td>Pumice</td>
<td>Igneous</td>
<td>Quartz and feldspar with mica and hornblende</td>
<td>Formed by eruptions on land—the cooling process forms air pockets in the rock</td>
<td>Land</td>
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<tr>
<td>Basalt</td>
<td>Igneous</td>
<td>Pyroxene, plagioclase feldspar</td>
<td>Solidified molten lava under water and on land</td>
<td>Oceanic crust, land</td>
</tr>
<tr>
<td>Shale</td>
<td>Clastic Sedimentary</td>
<td>Cemented particles of clay (and minor silt)</td>
<td>Formed from previously existing rocks which were eroded, transported and redeposited elsewhere</td>
<td>Mountains, land</td>
</tr>
<tr>
<td>Sandstone</td>
<td>Clastic Sedimentary</td>
<td>Quartz sand, particles big enough to be seen</td>
<td>Formed from previously existing rocks which were eroded, transported and redeposited elsewhere</td>
<td>Mountains, land</td>
</tr>
<tr>
<td>Conglomerate</td>
<td>Clastic Sedimentary</td>
<td>Pebble-size to boulder-size grains mixed with smaller sand or clay particles</td>
<td>Formed from previously existing rocks which were eroded, transported and redeposited elsewhere</td>
<td>Mountains, land</td>
</tr>
<tr>
<td>Limestone</td>
<td>Organic chemical sedimentary</td>
<td>Calcium carbonate from shells of sea creatures, reef fragments or limey secretions of sea creatures</td>
<td>Formed when water can no longer keep various chemicals dissolved within it</td>
<td>Sea floors, land</td>
</tr>
<tr>
<td>Diatomaceous earth</td>
<td>Organic chemical sedimentary</td>
<td>Collection of shells from diatoms or radiolarians and certain algae</td>
<td>Formed when water can no longer keep various chemicals dissolved within it</td>
<td>Land</td>
</tr>
<tr>
<td>Coal</td>
<td>Organic chemical sedimentary</td>
<td>Buried plant material</td>
<td>Formed when water can no longer keep various chemicals dissolved within it</td>
<td>Land</td>
</tr>
<tr>
<td>Type</td>
<td>Category</td>
<td>Composition</td>
<td>Formation</td>
<td>Found</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Limestone</td>
<td>Inorganic chemical sedimentary</td>
<td>Calcium carbonate derived from inorganic sources</td>
<td>Formed when water can no longer keep various chemicals dissolved within it</td>
<td>Caves, mineral springs, stalactites, stalagmites</td>
</tr>
<tr>
<td>Dolomite</td>
<td>Inorganic chemical sedimentary</td>
<td>Calcium carbonate with magnesium atoms</td>
<td>Formed when water can no longer keep various chemicals dissolved within it</td>
<td>Land</td>
</tr>
<tr>
<td>Evaporites</td>
<td>Inorganic chemical sedimentary</td>
<td>The remains of evaporated seawater</td>
<td>Some were formed when a huge volume of mineral-laden water came up through the ocean floor basalts and released its dissolved content when it hit the cold ocean waters</td>
<td>Land</td>
</tr>
<tr>
<td>Slate</td>
<td>Metamorphic</td>
<td>Shale</td>
<td>Shale subjected to heat and pressure</td>
<td>Land</td>
</tr>
<tr>
<td>Schist</td>
<td>Metamorphic</td>
<td>Shale</td>
<td>Slate that continues to undergo heat and pressure</td>
<td>Land</td>
</tr>
<tr>
<td>Gneiss</td>
<td>Metamorphic</td>
<td>Alternating bands of different minerals from other sedimentary or igneous rocks</td>
<td>Formed from other sedimentary or igneous rocks that have been subjected to heat and pressure</td>
<td>Land</td>
</tr>
<tr>
<td>Quartzite</td>
<td>Metamorphic</td>
<td>Quartz sandstone</td>
<td>Quartz sandstone that has been subjected to change</td>
<td>Land</td>
</tr>
<tr>
<td>Marble</td>
<td>Metamorphic</td>
<td>Limestone</td>
<td>Heat and pressure applied to limestone</td>
<td>Land</td>
</tr>
</tbody>
</table>

**Chapter 3 – The Earth's Surface – Worksheet 1**

- **Plain** — a broad area of relatively flat land
- **Sediment** — a natural material broken down by processes of erosion and weathering; can be transported or deposited by water or wind
- **Plateau** — flat lying sediment layers similar to plains but at higher elevations
Introduction – Worksheet 1

**karst** — the term used by scientists to describe a landscape of caverns, sinking streams, sinkholes, and a vast array of small-scale features all generated by the solution of the bedrock, formed predominantly by limestones

**karst aquifers** — the assembly of groundwater accumulated inside a karstic rock, enough to supply wells and springs

1. Their immediate need to find shelter from the rapidly cooling climate
2. Tower of Babel
3. 25 percent
4. Over 50 percent

1. It was deep inside the caves that some found shelter, mystical ritual hunting grounds, and a burial place for their dead.
2. The once-global knowledge and craftsmanship was split between many groups that could no longer truly communicate. Very quickly, various groups found themselves with the monopoly over one or several crafts/technologies, while other crafts were more or less lost for them. They were soon isolated from the other groups and many lost much of their knowledge of God.

Chapter 1 – Humans and Caves – Worksheet 1

**acoustics** — points of resonance (locations where if certain musical notes are emitted, they will bounce back, amplified, from the walls)

**Acheulean industry** — from the town of Saint-Acheul, whose most characteristic tool was the stone hand axe

**bas-reliefs** — artwork usually made of soft, pliable clay attached to walls or even to large blocks

**cave paintings** — either simple outlines of charcoal or mineral pigment, or true paintings with outlines, shading, and vivid pigment fills

**engravings** — usually made on soft limestone surfaces

**Kyr** — abbreviation for thousand years

**Myr** — abbreviation for million years

**speleothems** — mineral deposits that form inside caves; especially stalagmites and stalactites

1. Though we do not know for sure because there is no mention in Scripture, it is possible that there were caves prior to the Flood. They would have been formed differently than caves that exist today.
2. It is first mentioned in Genesis 19:30 concerning Lot and his daughters.
3. The word “cave” appears some 40 times in the Bible.
4. Cave bears, cave lions, and cave hyenas
5. China
6. Art associated with burial rituals
7. Paintings, engravings, and bas-reliefs
8. No, they were descended from the family of Noah.
1. Discussion might include their role as shelters or religious sanctuaries.

2. These early people carried their deep beliefs from their ancestor Noah. They also took on new beliefs as they separated from each other. Some may have come to see caves as an entrance into the earth. These were places of deep mystery to them.

3. The largest number of cave paintings are located in places of resonance (locations where if certain musical notes are emitted, they will bounce back, amplified, from the walls). It seems probable that chanting, dancing, and other types of ritual musical activities were associated with cave paintings.

4. Civilization; individual and unique. Man was created by God in His own image and was very intelligent and skilled from the beginning.

5. First representative of this human type was discovered in 1856 in a cave in the Neander Valley in Germany. Some have seen the remains as those belonging to an idiot, a hermit, or a medieval Mongolian warrior. Evolutionists were looking for a missing link, seeing this as a possible connection. However, they were simply humans with stocky, shorter bodies than many people today. They had broad noses and their brain size was slightly larger than that of modern humans.

6. Neanderthals had a spoken language, seemed to care for each other (those injured), and used flowers to decorate those buried.

Chapter 2 – Caves and Mythology – Worksheet 1

- **anthropods** — invertebrate animals having an exoskeleton, segmented body and jointed appendages
- **bidirectional air circulation** — air flowing two ways
- **cul-de-sac** — cave with only one entrance
- **echolocation** — bats send out sound waves that hit an object and an echo comes back, helping them identify the object
- **troglobites** — creatures which live only in caves (from Greek for “cave dwellers”)
- **troglophiles** — creatures which spend some part of their life in caves (from Greek for “who like caves”)
- **trogloxenes** — creatures that got into a cave by accident and which try to leave (from Greek for “foreign to caves”)
- **unidirectional air circulation** — air flowing one way

1. Egypt, Phoenicia, Assyro-Babylonia, Greece, Rome, and Maya
2. The cave olm
3. Troglophiles
4. A spectacular cave environment where several new species of creatures were found
5. Usually about 90 percent
   1. Often one or two other females spread their wings underneath the delivering mother, ready to catch the little one if needed.
   2. Thirty-eight Ukrainian Jews hid during World War II for nearly two years.
   3. Ice can accumulate in cul-de-sac shafts because they act as traps for cold air.
   4. Some caves have an abundance of negative ions in the air, which are usually oxygen atoms. Someone with a cold or flu can improve more quickly because of the absence of cosmic radiation.
**Introduction – Solving the Fossil Mystery – Worksheet 1**

**Evolution** — the belief that life started by chance, and millions of years of struggle and death slowly changed a few simple living things into many varied and complex forms through stages

**Paleontologist** — a person who studies fossils

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 – Fossils, Flooding, and Sedimentary Rock – Worksheet 1**

**Archaeology** — the science that deals with human artifacts, and with things deliberately buried by humans

**Artifacts** — products crafted by humans

**Fossil** — remains or trace of a once-living thing preserved by natural processes, most often by rapid, deep burial in water-laid sediments.

**Geology** — the scientific study of the earth, including the materials that it is made of, the physical and chemical processes that occur on its surface and in its interior, and the history of the planet and its life forms

**Paleontology** — the study of fossils

**Permineralized fossils** — fossils preserved by minerals hardening in the pore spaces of a specimen such as a shell, bone, or wood

**Polystrates** — fossils that cut through many layers, suggesting the sequence was laid down very rapidly

**Pseudofossils** — false fossils; things that look like fossils but really aren’t

**Sediments** — particles of sand, silt, clay, ash, etc. eroded and deposited by wind and water currents

**Trace fossils** — are not remains of plant or animal parts, but show evidence of once-living things

1. Flaky shale, gritty sandstone, or chalky limestone
2. Wind and water
3. Water
4. Water and rock cement
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. Any three: limestone, bottom of tea kettle, in Tums and Rolaids, chalk
8. Silica gel packs are placed in boxes of electronic equipment.
9. A flood
10. 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 – Geologic Column Diagram – Worksheet 1

Index fossil — fossils used to identify a geologic system because they lived either (a) at a certain time or (b) in a certain place in the pre-Flood world

Geologic column — a columnar diagram identifying rocky layers (strata) that form a sequence from bottom to top to indicate their relation to the twelve geologic systems

Living fossils — creatures found alive today that evolutionists thought became extinct millions of years ago

Trilobite — a crab-like creature that was the first fossil found buried in abundance around the world

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 – Flood Geology vs. Evolution – Worksheet 1

Cambrian explosion — the sudden appearance of a wide variety of complex life forms in the lowest rock layer with abundant fossils (Cambrian); considered a challenge to evolution, these may be the first organisms in a corrupted creation to be buried in Noah’s flood

Cavitations — bubbles formed by surging waters