

# What is the Geologic Column?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Studying the Layers

- While William Smith (1769-1839) was supervising the digging of the Somerset Canal in England, he observed that the same kinds of fossils always occurred in a \_\_\_\_\_ order in the rock layers.
- He used his observations to support the law of superposition, which states that newer \_\_\_\_\_ form on top of existing layers.
- Using this approach, he could successfully predict the type of fossils that would be found above or below any \_\_\_\_\_ he was studying.
- Using Smith's principles, Sir Roderick Murchison (1792-1871) carefully collected fossils from \_\_\_\_\_ layers.
- He found that the fossil communities \_\_\_\_\_ as he worked his way down through the layers of rock in Wales.
- Later, he was invited by the czar to study the fossil communities in \_\_\_\_\_.
- Murchison began to believe that the same sequence of fossil communities was preserved throughout the \_\_\_\_\_.
- This specific order of fossils is observable data, and other geologists have confirmed Murchison's idea that the \_\_\_\_\_ pattern is consistent in the rock layers throughout the world.
- Fossils that occur consistently in a limited portion of the geologic column, but are abundant and widespread in that limited portion are called \_\_\_\_\_ **fossils**.
- The lowest section of the geologic column, the **Precambrian**, contains \_\_\_\_\_, but relatively few macrofossils.
- \_\_\_\_\_ are the remains of small organisms – such as bacteria and protists – that can only be studied using a microscope.
- \_\_\_\_\_ are larger and visible without a microscope.
- Above the Precambrian layers, in a subdivision called the **Paleozoic**, various \_\_\_\_\_ fossils are found.
- These animals include trilobites and \_\_\_\_\_.
- In addition, scientists have found \_\_\_\_\_ and huge dragonflies with a wingspan of nearly a meter (3 feet).
- Near the top of the Paleozoic layers, some fossils of land \_\_\_\_\_ appear.

Chapter 10 Lesson 1  
Part 2 (pg. 325 – 328)

- A high percentage of fossils found in these lower layers are creatures that are \_\_\_\_\_ extinct.
- Above the Paleozoic are the **Mesozoic** layers, which contain a \_\_\_\_\_ of fossils from marine animals, land animals, and some birds.
- The most well-known animals in these layers are the \_\_\_\_\_.
- Above the Mesozoic are the **Cenozoic** layers, which contain fossils from many land animals and \_\_\_\_\_.
- Among the interesting animals found in these layers are saber-toothed cats, tiny horses, beavers 6-8 feet tall, woolly mammoths, and \_\_\_\_\_ the size of elephants.
- When scientists speak of the \_\_\_\_\_, they refer to the fossils, their placement within the strata, and the information that can be derived from them.
- Rock layers and the fossils found in them are observable \_\_\_\_\_.
- Some of the data show very clearly that major \_\_\_\_\_ have occurred in Earth's history.
- Fossil whalebones have been found in \_\_\_\_\_.
- Fossil seashells have been found on \_\_\_\_\_ all over the world.
- Fossils of broad-leafed evergreen plants that grow in tropical forests have been found in \_\_\_\_\_.

### Scripture Spotlight

- *Read about the Rock of Escape in 1 Samuel 23:19-28.*

### Time Inferences

- The geologic column has come to be closely associated with millions of years of \_\_\_\_\_ history, but it was not that way at first.
- Most of the scientists who first described and published the relationships between the layers and the fossils believed in the \_\_\_\_\_ account of Earth's history.
- Sometimes the names they assigned to the parts of geologic column reflected \_\_\_\_\_ of the rock layers themselves
  - Like the Cretaceous (which means "chalky")
  - Or Carboniferous (because of the carbon in the coal found there)
- Often layers were named after the places where the fossils were first \_\_\_\_\_.
  - The *Jurassic* was named for the Jura Mountains of Switzerland

Chapter 10 Lesson 1  
Part 2 (pg. 325 – 328)

- And the *Permian* was named for the town of Perm in Russia where scientists first described the fossils found in these layers
- It was only later that the long ages suggested by some scientists \_\_\_\_\_ the interpretation of the geologic column.