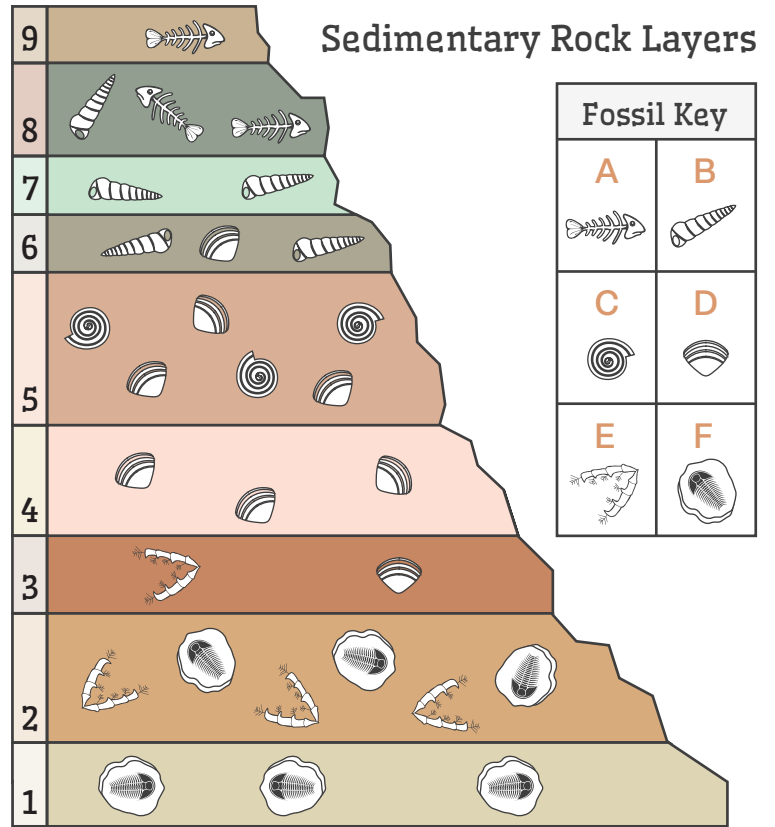


Analyzing the Fossil Record

Fossils are the preserved remains or traces of plants and animals that were once living. The millions of fossils that scientists have collected make up the **fossil record**.

Paleontology is the study of life throughout Earth's history. Paleontologists study the fossil record to learn about how living organisms have changed over time. The fossil record can help scientists piece together information about Earth's past and the history of life on Earth.

Look at the diagram of sedimentary rock layers. Learn more about the fossil record by answering the questions below.



- Which rock layer is the oldest? How do you know? **Layer 1 is the oldest rock layer. New sediment is deposited on top of old sediment, so the oldest layer would be on the bottom.**
- Which rock layer is the youngest? How do you know? **Layer 9 is the youngest rock layer. New sediment is deposited on top of old sediment, so the youngest layer would be on the top.**
- Which fossil appears to have lived on Earth for the longest amount of time? Why do you think so? **Fossil D appears to have lived on Earth for the longest amount of time. It can be found in four different rock layers, which is more than any other fossil.**
- Which fossil appears to have lived on Earth for the shortest amount of time? Why do you think so? **Fossil C appears to have lived on Earth for the shortest amount of time. It can be found in only one rock layer, which is fewer than any other fossil.**
- A **mass extinction** is a widespread and rapid decrease in the number and variety of species on Earth. What evidence could scientists look for in rock layers around the world to identify mass extinction events throughout Earth's history? **Scientists could look for the sudden, permanent disappearance of many different species of organisms within a small range of time in the fossil record. This would indicate that organisms were rapidly wiped out all over the world around the same time.**