Geologic timeline

The earth is very, very, old — more than 4.5 billion years old, in fact.

Geology is the study of the earth, its natural structures (like rocks and minerals), and how they change over time. The rocks that form the earth's crust provide evidence of the events of the past that can be studied. Scientists use this evidence to reconstruct past geologic events.

Most of the rocks that we can see on the surface of the earth are sedimentary. Sedimentary rocks are formed from sediment – particles of older rocks that have been broken apart by water or wind. These particles eventually settle to the bottom of lakes and other bodies of water. Over millions of years, they are compressed into rock.

As the sediment hardens into rock, it forms distinct layers. Each layer is deposited on top of the one before, so the deeper the layer, the longer ago it was formed. So, examining the order of the layers tells us how old it is in relation to its neighbors.

When animals or plants are buried in this sediment, they become fossils. The fossils found in rocks of different ages are different, because life on Earth has changed through time. By comparing the fossils found in a layer, scientists can identify rocks of the same age.

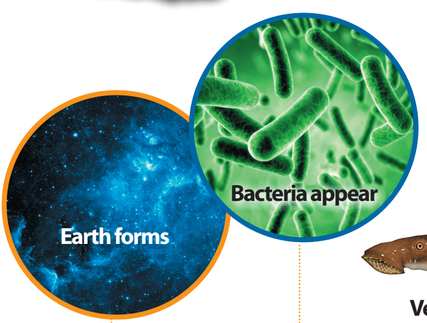
More recently, scientists have learned how to measure the actual age of some rocks by analyzing the elements naturally contained in them. This allows us to estimate how long ago each rock layer was deposited.

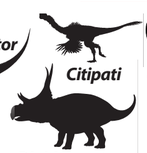
By studying the order of the rock layers, the fossils found in them and the age of their rocks, scientists are able to put together a history of the earth's past. This is called geologic time.

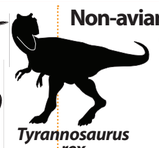
Geologic time is divided into eons, eras, periods, epochs and ages. Dinosaurs lived during the Triassic, Jurassic and Cretaceous periods of the Mesozoic era.

Visit ucmp.berkeley.edu/help/timeform.php to learn more about geologic time.

Sources: American Museum of Natural History, BBC, Geology.com, University of California Museum of Paleontology, U.S. Geological Survey



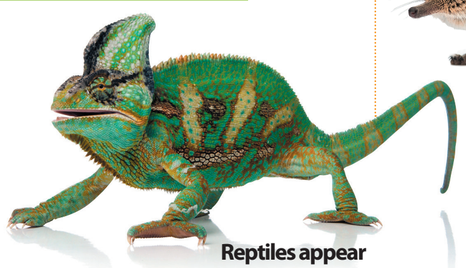


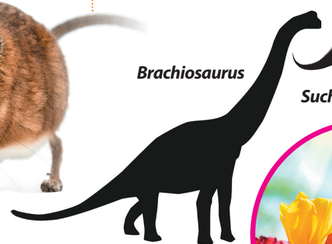


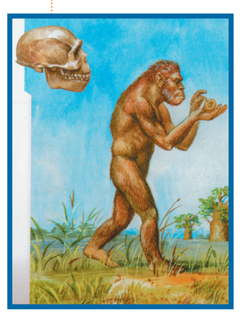
4,000 million years ago	3,800 million years ago	2,500 million years ago	570 million years ago	530 million years ago	450 million years ago	370 million years ago	300 million years ago	240 million years ago	200 million years ago	150 million years ago	125 million years ago	65 million years ago	60 million years ago	55 million years ago	14 million years ago	6 million years ago	190,000 years ago	Present Time 2017

Triassic Period (251–200 million years ago) | **Jurassic Period** (200–145 million years ago) | **Cretaceous Period** (145–65 million years ago)

MESOZOIC ERA







Geologic time scale

The time during which dinosaurs ruled the earth is known as the Mesozoic era. Scientists divide the Mesozoic era into three periods: the Triassic, Jurassic and Cretaceous.

Sources: BBC, National Geographic, Natural History Museum London