

# Factsheet: Geological Time

## Key Facts

Geological time is divided into distinct periods within which the physical geography of the Earth developed and continues to evolve.

Each of the geological periods relate to events which have happened in the Earth's history.

Humans have walked the Earth for 190,000 years, a mere blip in Earth's 4.5-billion-year history.

A lot has happened in that time. Earth formed and oxygen levels rose in the foundational years of the Precambrian.

The productive Paleozoic era gave rise to hard-shelled organisms, vertebrates, amphibians, and reptiles.



Scientists now believe that about 250 million years ago, a super-continent known as Pangaea existed. This super-continent was made up of all the continents on Earth.

Over time, these continents have broken apart, and slowly drifted away from one another. This drift continues today, so that the form the Earth takes today is not by any means the final shape of our Earth.

- > 4600 ma - the Earth was created when our solar system took shape around the sun.
- > 3950 ma - the world's oldest known rock structure represents early chunks of the Earth's crust made when molten lava rose from cracks in the seafloor.
- > 2300 ma - oxygen levels begin to climb created by cyanobacteria, microbes living the sea.
- > 570 ma - hard shelled molluscs including clams, snails, squid start appearing.
- > 530 ma - the earliest vertebrates (backboned animals that include mammals) start appearing
- > 430 ma - plants begin to take root on land.

- > 370 ma - amphibians started hauling themselves out of the water
- > 360 ma - the Earth's major landmasses started coming together to create a single vast supercontinent called Pangaea.
- > 300ma - earliest reptiles had evolved from amphibians
- > 260 ma - living conditions favour reptiles and they take over, growing to large sizes
- > 250 ma - planet suffers largest extinction ever.
- > 240 ma - dinosaurs take first steps.
- > 210 ma - small furry animals appear and dinosaurs dominate the Earth.
- > 150 ma - birds become airborne.

- > 125 ma - flowering plants begin to bloom in a warm, mild climate.
- > 65ma - a massive extinction event wipes out 50% of the planet's animal and plant species.
- > 63 ma - mammals replace dinosaurs, diversifying and growing in size.
- > 55 ma - first primates start appearing.
- > 6-8 ma - hominins descend from the trees.
- > 1.8 ma - ice age grips the Earth.
- > Today - homo sapiens arose in eastern Africa about 190,000 years ago.