

Geological Ages Fact File

Precambrian

This is the longest Age of all, and covers the point from the formation of the Earth to the start of the Cambrian, 600 million years ago. That means the Precambrian lasted for *4 billion years*! During this time, the Earth slowly condensed from a cloud of gasses into a large, hot and violent sphere. It gradually cooled down and the minerals and elements settled into the characteristic layers we see now. Seas were formed and an atmosphere developed. It used to be thought that there was no life at all on the planet during the Precambrian; we now know that the earliest algae and even some worm-like animals were busily evolving in the newly formed seas.

Cambrian

Very little is known about what conditions in the Cambrian were like, but some guesses can be made. Firstly it was likely to be quite warm as the atmosphere had more carbon dioxide and methane ('greenhouse gasses') in it. There was no land or ice at the poles where glaciers could grow, and so tropical currents warmed by the sun at the Equator were able to circulate the globe and helped to keep the seas warm. The levels of oxygen in the atmosphere rose steeply during the Cambrian as life – especially photosynthesising bacteria and algae - began to flourish in the warm seas. The planet would never be the same again.

Devonian

The planet continued to be warm – almost tropical – during the Devonian Age. Coral reefs fringed the land and fish flourished in shallow tropical lagoons. Amphibians hauled themselves out of the water to bask on the shores and began the long process of taking animal life out of the water and onto the land, following the example of the plants. Tectonic forces began to nudge the landmasses together to eventually form the giant 'super-continent' called Pangaea, changing the weather across the planet again.

Carboniferous

This Age began with a continued tropical feel; huge horsetails and clubmosses flourished in hot forests with monsoon rainfall, and giant insects chased tiny reptiles through the branches of the prehistoric plants. Millions of years later, the decayed and fossilised remains of these forests formed rich seams of coal, often containing fossils of huge insects and delicate leaves. But towards the end of the Age, things began to cool down across the planet as Pangaea formed. Ice caps formed at the Poles, and the warm tropical seas were cooled by several degrees as the warm ocean currents were disturbed. In fact, the Carboniferous saw the planet change from a warm, humid paradise to a cool, temperate place much like it is today.

Jurassic

The Jurassic started with all of the major landmasses grouped together into a single massive continent called Pangaea. The centre of this giant landmass was hot and dry and probably very like deserts today. To the North and South of this desert, lush tropical rainforests flourished, gradually changing to temperate forests and then cold tundra as

you journey further towards the ice-capped Poles. This variety of different habitats was one of the driving forces behind the great variety of life in the Jurassic world, as plants and animals spread out and adapted to the varying conditions.

Present day

We are all familiar with the wonders of the world today through a variety of wildlife programs. We have travelled through rainforests and Arctic wastelands and can see just how incredibly rich and diverse life is on this planet. This diversity has taken millions – even billions - of years to evolve and adapt, and yet is now threatened by a late arrival on the world scene; humans.

You have seen the world changing through time, and climates varying between Ice Ages and tropical paradises. Plants and animals have always managed to adapt and survive before now. Change and alteration are natural – nothing on this planet stays the same for very long. But humans are putting pressure on the delicate balancing mechanisms of the planet, and causing changes to happen faster than many organisms can cope with. We are perhaps the first species on this planet to have seen the rich diversity and beauty of tropical rainforests and arctic snowfields, deserts and deep seas. The planet is amazing; it is up to us to help to keep it that way.