

## Life Cards

From the time spanning the cooling of the earth and the formation of the early atmosphere and oceans to about 3.5 billion years ago, there is no evidence of life on Earth.

A few of Earth's most ancient sedimentary rocks, those laid down in shallow ocean environments about 3.5 billion years ago, hold unmistakable fossils of ancient microbes. These represent the oldest known fossils of life on earth, and are a rarity, because generally bacteria don't have (or form) solid surfaces which can be preserved as fossils in rocks. These formations, called stromatolites, contain predominantly cyanobacteria which is a type of microorganism that persists. Cyanobacteria are photosynthetic.

From their initial appearance in the fossil record 3.5 billion years ago until approximately 1.8 billion years ago, microscopic life gradually spread along the shallow shores of ancient landmasses becoming more abundant.

During the time known as the "boring billion" (from 1.8 to 0.8 billion years ago) life appears to have hit a plateau where it continued to hold on but not thrive. This era was dominated by simple life forms.

Around 800 million years ago (0.8 billion) living things became much more complex and multicellular. Conditions on the Earth also allowed for the move to land and ocean away from the shallow coastal waters.