Earth’s Life Timeline

Early Earth was HOT! Our planet was not conducive for life to exist until things ‘cooled off’.

It took a long time to form our oceans and to get a thick atmosphere. Based on fossil records, it took at least a half a billion years after Earth formed for life to begin.

Single-celled organisms dominated for a long, long time! Life changes the environment. Earth’s earliest organisms lived in a world with no oxygen! Oxygen was added later by photosynthesizing organisms. Once oxygen built up in the atmosphere, an ozone layer formed, adding a layer of protection from UV rays.

This activity will help your child gain an understanding of the timing of events – and the events themselves that shaped our planet Earth.

What You Need:

- Printed images of events from http://www.lpi.usra.edu/education/timeline/gallery/
- 25 feet of string or tape
- Scissors

How to Create the Timeline:

- Select and print images of the events described below.
- Make a timeline along a wall or sidewalk that is 25 feet long. Mark off each 5 feet as a billion years.
- Arrange the events in the appropriate position along the timeline.
- Walk the timeline with your child and examine how Earth’s environment has changed over time.

What to Do:

Invite the children to step through the timeline one event at a time as you read the questions below together. They need to answer your question before they go to the next event.
Earth’s Time Line

- 4.6 billion years ago dust and gas clumped together and formed our __________ and __________ __________. (Earth and solar system!)
- Just after it formed, a planet, half the size of Earth, struck Earth, spewing dust and debris from Earth and the impactor into space. This stuff clumped together to form our __________ (Moon).
- Early Earth was covered by lava. It was very cold/hot (choose one) – Hot! Eventually the molten lava cooled forming __________ (crust or land).
- Volcanoes spewed water vapor and gases into the atmosphere the whole time – when things finally cooled down the __________ (water) became our oceans and the gases became our atmosphere.
- Lots of __________ (big asteroids) hit early Earth! (A few tiny ones still hit today.)
- Earth’s oldest fossils are about 3 to 3 1/2 billion years old, telling us that __________ __________ (living things) were on Earth. Life may be older, but we do not have a fossil record. The first life was simple photosynthesizing bacteria – single celled organisms. They used energy from the Sun. They also produced oxygen, which helped to change the atmosphere so that we can breathe it!
- The first __________ (animals) did not appear until about 700 million years ago ... it took a looooong time for complex life to form (again, these are the first fossils; animals may have existed a little before this, but we do not have a record)! These first animals were soft and squishy – like jellyfish.
- It wasn’t until 400 million years ago that the land became green because of the first __________ (plants). Soon, insects inhabited the land, eating the plants. Then amphibians made it on land, eating the plants and insects.
- A bit over 200 million years ago, the first __________ (dinosaurs) appeared. Just like those seen in Jurassic Park!
- T-Rex saw the first colorful __________ (flowers) on plants about 100 million years ago.
- A big __________ (asteroid) hit Earth, causing Earth to change and the dinosaurs to go extinct.
- The most recent event in Earth’s history is __________ YOU!