



Toilet Tissue Timeline

(Source: DynamicEarth.co.uk)

Background

The Earth is 4.6 billion years old and human experience is just a small part of this ancient timeline. The Earth is a dynamic planet that has experienced and continues to experience many changes, including the formation of continents, extinctions, glaciation and climate change.



Purpose:

To construct a model of Earth's history and learn how our planet has changed over time.

Materials:

- A roll of toilet paper
- Crayons/coloured markers

Directions:

Working together with your family, construct a timeline by carefully rolling out the toilet paper, and numbering the sheets to keep count. When you arrive at an important event in Earth's history, carefully write the event on the tissue, or mark it with a symbol, using a coloured marker and record it on a piece of paper. Refer to the information in the chart below to construct your timeline. When you have completed your timeline discuss the Earth's history model with your family. Was everyone surprised at how many sheets were required to create the timeline? Was anyone surprised by any of the events in the history of the Earth?

Toilet Paper Timeline (~200 sheets)

Sheets from START	Sheets from previous marker	Earth Event
1 sheet	1 sheet	Planet Earth formed
4 sheets	3 sheets	Earth's core and crust formed
9 sheets	5 sheets	Oceans formed
33 sheets	24 sheets	First life appeared
135 sheets	102 sheets	Oxygen begins accumulating in the atmosphere
170 sheets	35 sheets	First animals
178 sheets	8 sheets	First vertebrates
184 sheets	6 sheets	First land plants
185 sheets	1 sheet	First land animals
190 sheets	5 sheets	First dinosaurs
197 sheets	7 sheets	Extinction of the dinosaurs
200 sheets	3 sheets	First humans
200 sheets	0 sheets	Present day



Activity Information: Earth History Events (mya = millions of years ago)

4600 mya	The Earth formed. Material left over from the birth of the Sun clumped together to form our planet. Other planets in our solar system were also formed in this way at about the same time.
4500 mya	Earth's core and crust formed. Dense metals sank to the centre of the Earth and formed the core, while the outside layer cooled and solidified.
4400 mya	The Earth's first oceans formed. Water vapour was released into the Earth's atmosphere by volcanic action. Vapour cooled and fell back to Earth as rain, and formed the Earth's first oceans. (some water may have come by comets and asteroids)
3850 mya	First life forms appeared on Earth - simple single-celled organisms. Exactly how life first arose is a scientific mystery.
1500 mya	Oxygen began to accumulate in the Earth's atmosphere. Oxygen is made by cyanobacteria (blue-green algae) as a product of photosynthesis. For 2,200 million years, this oxygen was removed from the atmosphere as it reacted with iron, sank to the bottom of the sea and became trapped in rock layers. 1,500 million years ago the free iron ran out and oxygen began to be released into the atmosphere.
700 mya	First animals evolved. These were simple, single-celled animals.
530 mya	First vertebrates (fish) evolved.
400 mya	First land plants evolved. Oxygen in the atmosphere reacted to form ozone, which formed a layer that served as a protective barrier from harmful rays from space. This allowed plants to grow.
350 mya	The first land vertebrates evolved. With plants present on the land to provide a food source, animals rapidly followed. The first to venture onto the land were primitive amphibians, then reptiles.
225 mya	First dinosaurs appeared.
65 mya	Dinosaurs and many other species disappear (after-effects of a meteorite impact, or perhaps several impacts and resulting earthquakes, tsunamis, volcanic eruptions, which spewed tons of dust and acid into the atmosphere, creating a 'frozen' winter or Ice Age. Dust blocked sunlight, so plants couldn't grow. After the extinction of the dinosaurs, mammals advanced.
0.13 mya	130,000 years ago, humans appeared, leaving Africa around 35,000 years ago and moving around the globe. Human evolution is still somewhat mysterious, due to gaps in the fossil record.
25,000-11,000 years ago	Most of Canada was covered by glaciers that slowly began retreating.