



Introduction

Most geological timescales have a variety of scales throughout geologic time. In this exercise you will use one scale (1 m = 1,000,000,000 years) for all of Earth's history. This gives a better perspective of the vastness of deep time.

Aim

To map major events on a geologic timeline

Materials

Tape measure	Coloured pens, pencils
Toys, rocks, stickers to mark events	Scissors
Receipt paper at least 4.6 m long	

Method

1. Cut 4.6 m of paper off of the roll.
2. Mark the events listed along the roll using the scale 1 metre = 1 billion years.
3. Decorate your timeline to highlight key events.

Events

Time (Ga)	Event	Time (Ga)	Event
4.6	Formation of Earth	0.47	First land plants (mosses)
4.6	Begin Hadean Eon	0.45	Early fish diversify
4.375	Oldest mineral	0.43	First vascular land plants
4.28	Oldest rock	0.41	First insects
4.000	Beginning of Archaean Eon	0.375	First seed ferns
3.95	Oldest isotopic evidence of life	0.363	Early amphibians (<i>Ichthyostega</i>)
3.48	Oldest microbial structures	0.31	First amniotes (reptiles)
2.9	First cyanobacteria evolve	0.2519	Begin Mesozoic Era
2.5	First cyanobacteria mats	0.25	First feathers
2.500	Beginning of Proterozoic Eon	0.243	First dinosaurs
2.5 – 1.8	Banded iron formations deposited	0.16	First mammal
0.66	First sponges (chemical fossils)	0.14	First flowering plants
0.575	First multicellular animals	0.066	Begin Cenozoic Era
0.541	Begin Phanerozoic Eon	0.055	First primates
0.541	Begin Palaeozoic Era	0.03	Australia fully separated from Antarctica
0.541	First skeletons	0.0003	First <i>Homo sapiens</i>



Discussion

1. The period from 1.8 – 0.8 billion years ago is known as the “boring billion”. Justify this based on your timeline. _____

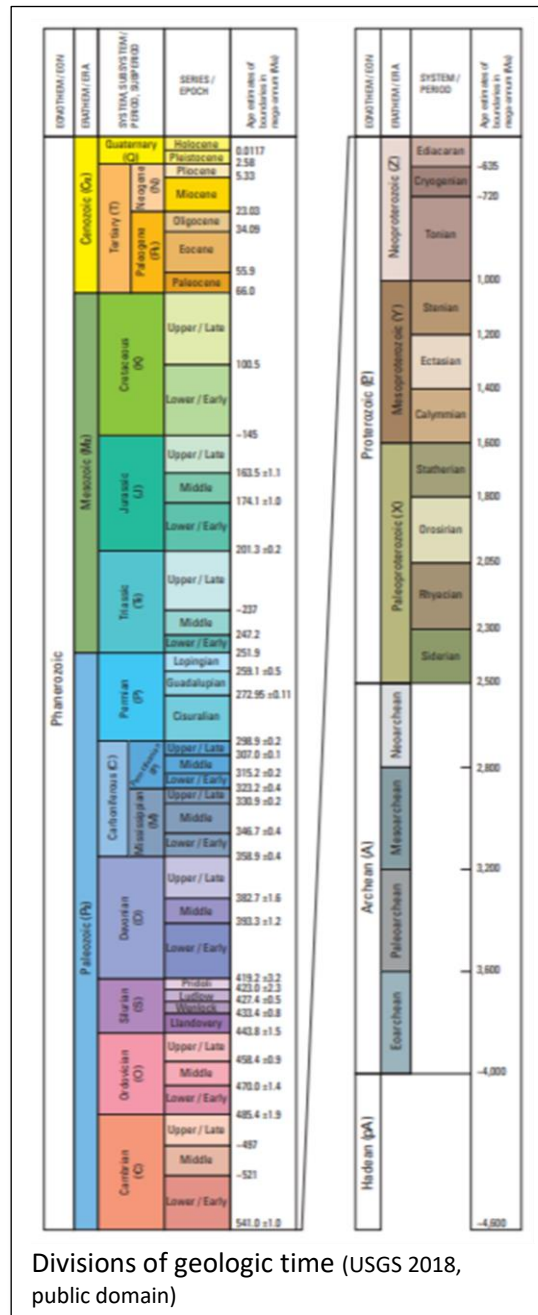
2. Which is the longest Eon? _____

3. What events seem to define eons? _____

4. Is the USGS time scale (right) ‘to scale’? _____

5. Why are geologic time scales usually drawn so that the Cenozoic is larger than the Proterozoic? _____

6. Why do you think there are so few subdivisions of earlier Eons? _____



Divisions of geologic time (USGS 2018, public domain)



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