



NSF GK-12 Graduate Fellows Program
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University of North Carolina at Wilmington

Geologic Time Line

Activity Instructions

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Geologic Time Scale Time Line:

You will be making a time line that represents the geologic time scale. The geologic time scale represents the time that has passed since Earth was formed approximately 4.6 billion years ago. You have been given a 20 ft. length of paper on which to construct your time line. At this scale, one inch is equal to a little less than 20 million years.

Your group is to mark off the given Eras of geologic time on your paper, and place important events on your time line. The different eras were named based upon the type of life found at that time. Choose one end of the paper to represent when the earth was formed. The other end will represent the present day. The table below gives the names, ages, and length (length on time line) of each era. When making a column representing geologic time, geologists always put the oldest on the bottom and the youngest on the top. This mimics what we see in nature, the oldest rocks are on the bottom and the youngest are on the top (in a sequence of undisturbed rocks). This is known as the law of superposition. Once you have separated your time line into eras, you should put the important events listed below into your timeline.

Eon	Era	Time Era Began (Years Before Present)	Length on time line (in inches)
Phanerozoic	Cenozoic	65 million	3
	Mesozoic	248 million	10
	Paleozoic	543 million	15
	Precambrian	4,600 million (4.6 billion)	212

Important events to list on your time line:

- Early humans appear in the fossil record 2 million years ago
- Cretaceous/Tertiary extinction occurs, wiping out dinosaurs and many marine organisms 65 million years ago
- First dinosaurs appear in the fossil record about 165 million years ago
- Permian/Triassic extinction, the largest extinction ever, occurs. 96% of marine species go extinct about 250 million years ago
- Appalachian mountain chain was being built about 290 million years ago
- First major land plants appear in the fossil record about 420 million years ago
- First marine organisms with hard parts (i.e. clams, snails, and trilobites) appear in the fossil record about 540 million years ago
- First multi-cellular life appears in fossil record about 590 million years ago
- First undisputed unicellular life appears in fossil record 3,500 million years ago



Questions:

1. Where would the fossils from Aurora fall on the time line?
2. The term Cenozoic comes from the Greek for “recent life.” The term Mesozoic comes from the Greek for “middle life.” What do you think the term Paleozoic means?
3. Do you think the position of the plates was the same when the Appalachian Mountains were being built as they are now? Why or why not?
4. Imagine you are a geologist, and you have been sent to Mars to study its geologic history. Would the time scale be the same on Mars? Why or why not?

