

Constructing a Geologic Timescale

Introduction:

When most of you think of ancient history, we think of Greece, Ancient Rome, maybe even the Egyptians. However, these civilizations are only thousands of years old, whereas scientists have determined that Earth history is BILLIONS of years old. To put this in perspective, if you were to write a book using one page for every year of Earth history, the book would have 4,600,000,000 pages, be a 145 miles thick, and take 17,500 years to read! In class today we will investigate another way to investigate the concept of “deep time” by creating a to-scale geologic timescale. In your table group, collect the following supplies:

Materials:

One measuring tape
One roll of masking tape
One bag of “events”
Markers

Procedure:

With your group, measure out a line of masking tape 46 feet long. Using the markers, divide the tape into 46 one-foot sections. These sections each represent 100 million years of Earth history. Label the top (or left side) “Today,” and the bottom (or right side) “4,600 ma.” Ma stands for “mega annum” which means million years. You may want to label some of the 100 million year marks for reference.

You also have a plastic bag full of cut-out events in Earth’s history. Mark a line on your timescale and place the title of the event at the appropriate date.

Place each of the events in the appropriate location on your timescale and then answer the following questions:

- 1) What patterns do you notice about events of a similar color? Give each color group a name based upon the patterns you observe.
 - a. Blue:
 - b. Red:
 - c. Yellow:
- 2) How might extinctions affect the evolution of organisms that survive the event?
- 3) In what ways have geologic changes influenced evolutionary events and/or extinctions?

- 4) How does the length of the history of life help to explain the evolution of single-celled organisms to complex organisms like mammals?

Once you've answered all the questions, clean up your timescales placing the events back in the bags, tape in the garbage, and returning the other supplies to the front of the classroom.