

Date: \_\_\_\_\_ Names: \_\_\_\_\_

## GEOLOGIC TIME TAPE

**INTRODUCTION:** If you had to place the important events of your life on a time line and you could only use 1 meter of paper, what scale would you need to use to fit your life span on the time line?

**OBJECTIVE:** In this activity, you will construct a geologic time line that will show major geologic eras, periods, epochs, and organisms that were alive at each time so that you will get an idea of what some scientists believe is the length of each era and period, as well as how long ago each occurred according to those scientists.

\*\*\*\*USEFUL INFORMATION ABOUT GEOLOGIC TIME IS ON THE NEXT PAGE\*\*\*\*

### PROCEDURE:

1. You need to designate the following roles for this activity:
  - a. Measurer: measures the tape and marks distances on the tape.
  - b. Artist: draws organisms that were alive at each time period.
  - c. Cutter: cuts out organisms drawn by artist.
  - d. Attacher: attaches organisms to the time line.
2. You need to measure **65 centimeters** of white register tape from the rolls provided. This will omit the Precambrian time period. Adding 4.6 meters will allow for the inclusion of that period.
3. The measurer should begin to measure out the distances taken up by each of the time eras, periods, and epochs so that **1 million years = 1 millimeter**. (Measure from left to right—from older to more recent history.)
4. The artist should sketch at least **2 organisms from each epoch** of geologic time on the white or colored paper provided.
5. As the artist completes each sketch, the cutter should cut out the sketch and pass it on to the attacher.
6. The attacher should take each completed, cut out sketch and attach it to the time line at the appropriate time interval. This may be done by taping it or by punching a hole in the time tape and hanging the organism from the tape at the correct spot by a piece of string.
7. When complete, the tape should have each group member's name attached and should be hung with everyone else's at the designated spot inside or outside the classroom.
8. All supplies and materials must be cleaned up at your station or table in order to qualify your group for the competition that is explained below.

\*\*\*ON THE FOLLOWING CLASS DAY PRIZES WILL BE AWARDED. Two groups from each class and from all classes overall for the following categories: "Most Colorful" and "Most Creative"\*\*\*

ERA	PERIOD	EPOCH	BEGAN (in millions of years)	LASTED	MAJOR EVENTS	
CENOZOIC ERA	Quarternary	Recent	10,000 years ago to present		Civilization, humans, and modern organisms appear	
		Pleistocene	2.5 m	2.5 m	"Ice Age," modern humans first appear, mammoths become extinct	
	Tertiary	Pliocene	14 m	11.5 m	Birds, fish, mammals similar to modern; cooler	
		Miocene	25 m	11 m	Grazing animals, modern flowering plants & trees	
		Oligocene	35 m	10 m	Primitive apes, elephants, camels, & horses; milder	
		Eocene	55 m	20 m	Small horses, grasslands, whales, rhinos, & monkeys	
		Paleocene	70 m	15 m	Flowering plants, small mammals; different climates	
	MESOZOIC ERA	Cretaceous		135 m	65 m	Coal swamps, fossils of trees & plants, mammals
		Jurassic		180 m	45 m	Many dinosaurs, feathered birds
		Triassic		230 m	50 m	First dinosaurs, insects, cone-bearing plants
PALEOZOIC ERA	Permian		285 m	55 m	First seed plants, fish, amphibians, & reptiles	
	Carboniferous	Pennsylvanian	325 m	40 m	First reptiles, amphibians, & giant insects; fern trees, swamps in lowlands	
		Mississippian	350 m	25 m		
	Devonian		410 m	60 m	"Age of Fish," many types of fish; first forests	
	Silurian		430 m	20 m	First land plants, algae, trilobites, & coral reefs	
	Ordovician		500 m	70 m	Jawless fish, great floods, algae, & trilobites	
	Cambrian		600 m	100 m	Invertebrates, clams, snails, seaweed, & seas	
PRECAMBRIAN	Proterozoic		4.6 billion	4 billion	Bacteria and algae appear	
	Archeozoic					