

Name \_\_\_\_\_ Date \_\_\_\_\_ Per \_\_\_\_\_

## Geologic Ticker Tape Timeline

### LEARNING TARGETS:

*I can evaluate and describe geologic time*

#### THIS MEANS:

- *I can model my understanding of geologic time*
- *I can describe and divide earth's history into eras, periods, epochs*

### OVERVIEW:

The earth is old, **REALLY** old. How old is the Earth? Well, if the Earth celebrated its birthday every million years, there would be 4,600 candles on its birthday cake! (**1,000 million = 1 billion**). Because the Earth is 4.6 billion years old, geologists have created a geologic time scale to make their job of studying Earth's history easier. The **geologic time scale is a standard method used to divide the Earth's long history into smaller parts**. Just as your life's history is broken up into sections, the history of the Earth is broken up into smaller sections called time. Your history can be broken up into sections (eons) and labeled as birth, elementary years, middle school years, high school years, professional years, etc. Time can be broken down even further, they call these eras. Just think how your school years can be broken down into grades (elementary = 1st, 2nd, 3rd, 4th, 5th grades). Eras can be further broken down to periods. Think of this like every 9 weeks in each grade.

During this activity **you will create a timeline** that outlines important events in earth's geologic history. In addition to gaining perspective on the age of the planet, you will also master creating a scale and mapping events. You will use this timeline to enter other important geologic events throughout the unit.

You will use cash register tape and with this tape you will be creating a timeline of important geological events and scaling them to fit the amount of time. **On the tape 1 millimeter will equal 1 million years.**

**Question:** Has any human ever seen a live dinosaur? How do you know?

**Hypothesis:** You will receive a post-it note containing a "Big Event." Look at the timeline in the room and hypothesize where the "Big Event" should go. **Record this first below** and remember to give a reason why, then go up to the large timeline and post your event.

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**Materials:** 5 meters of adding machine tape, Meter stick, metric ruler, Colored pencils

**DIRECTIONS:**

1. Work in groups of 4.
2. Lay your tape on the floor OR table where it won't interfere with others. Tape the ends to the floor or just place books on either end.
3. Measure out the first 20cm in the top left corner of the tape:
  - a. Write the full heading – **“Geological Timeline”**, your group names and the class period
  - b. Underneath the heading include the following scale : 1 meter = 1 Billion Years  
1 cm = 10 Million Years  
1 mm = 1 Million Years
4. Measurement for your timeline will begin with **“Today.”** Starting from the **left side** of your paper:
  - a. At the 20cm mark make a vertical line from the top of the paper to the bottom.
  - b. Label the line **“Today.”**
5. Now you will need to **draw two horizontal lines across the span of your paper starting at the “Today” line, ending at the far right side of the paper.** The **first line should be 1 cm from the top** of the paper, and the **second line should be placed in the middle (around the 3 cm mark - look at the example).**
6. Using the major events listed in Table 1:
  - a. Measure and write the events on either side of the middle horizontal line (use tick marks on the middle line to represent the event).
7. Add the Era's within the top horizontal line. Be sure to use the same colors associated with the eras on Table 1.
8. Check your work with the class - you will roll out all of your ticker tapes and check answers.

**Congratulations!! You have just mapped Earth's geologic history! Go on to complete the Analysis and Conclusion.**

**Analysis:****1) Compare Dinosaurs Existence on Earth:**

Age of Dinosaurs on Earth begins \_\_\_\_\_ - Dinosaurs Go Extinct \_\_\_\_\_ = **Dinosaurs Existed** \_\_\_\_\_

**Dinosaurs time on Earth Compared to Humans:**

Time Dinosaurs were on Earth \_\_\_\_\_ - Time Humans have Existed \_\_\_\_\_ = **Age Difference** \_\_\_\_\_

2) How long has there been life on Earth?

3) Did dinosaurs exist at the same time as humans?

4. How do scientists determine when an era begins and when it ends?

5. What natural processes (forces of nature) do you think create change on Earth? How do you think these processes will shape the future?

**Conclusion:** Was your hypothesis supported or not? (re-state your hypothesis). Explain using evidence. What did you learn from this activity or what surprised you about this activity?