Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# 1000 Millimeters of Time

**Purpose**

The purpose of this exercise is to see approximately when primitive organisms inhabited the earth. You will also see when the ancestors of present-day organisms made their appearance.[[1]](#endnote-1)

**cm**

**Procedure**

**mm**

***Recall***

*Millimeters = Smallest marks on a meter stick (mm)*

*Centimeter = There are 10 millimeters in each centimeter (cm)*

*Meter = There are 100 centimeters in a meter*

 **Materials**

1. Paper (1 meter long)
2. Meter stick
3. Ruler

**Sequence of Steps**

 *Setting up your chart*

1. You will use the centimeter and millimeter to represent units of time in the life of the earth.
2. Lay the piece of paper on a flat surface. Place the meter stick on the paper, with the lowest numbers at the **right** side of the paper.
3. Measure 10 cm from the bottom of the page. Draw a line, 1 meter long, along the bottom of the paper, 10 cm from the bottom edge.
4. Without removing the meter stick from the paper, make a mark on the paper at each of the following centimeter points on the meter stick: **(Moving from right to left.)**
	1. 0cm
	2. Each of the first 12 cm (1-12)
	3. 20 cm
	4. 40 cm
	5. 60 cm
	6. 80 cm
	7. 100 cm
5. Using the ruler, extend these marks to the bottom of the paper.
6. Let 1cm = 50 million years. Therefore, the time represented from 0cm to 1cm represents 50 million years. Write the words “50 Million” on the line you drew at 1cm. Continue across the page, indicating the amount of time represented by each line.
7. Let 1mm = 5 million years. Place the meter stick on the paper again and make a mark at each of the first 10 millimeters on the line, **starting from the right**.

*Plotting Events*

1. The chart in Figure 1 lists some of the important events and the time in millions of years when they are believed to have occurred. Study the chart.
2. Using the time scale you prepared, locate these points and write the events in the proper places on your paper.

Figure 1

|  |  |
| --- | --- |
| Event | Millions of Years Ago |
| First flowering plants | 150 |
| Great coal forests; reptiles appeared | 280 |
| First dinosaurs | 200 |
| Dinosaurs extinct | 130 |
| Spores- land plants | 500 |
| First amphibians | 400 |
| Early man |  2 |
| Earliest fossils | 3,000 million years ago (3 billion) |
| First primates |  65 |
| First primitive fish | 480 |
| First mammals and birds | 170 |
| First seed plants | 300 |
| Conifers & tree ferns; largest dinosaurs | 150 |
| Large carnivores |  10 |
| Abundant invertebrate fossils | 550 |
| Appearance of insects | 430 |

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**Observations & Conclusions**

1. During what part of the earth’s history did living organisms first appear? What were they?
2. Which appeared first, animals or green plants?
3. What characteristics of plants enable them to survive without animals?
4. What characteristic or characteristics of animals make them dependent on green plants?
5. Which of the organisms listed in *Figure 1* have been on the earth the shortest period of time?

1. How has natural selection determined the different survival groups of organisms?
2. What evidence do we have to support time period of dinosaurs and their mass extinction?

1. Agricultural Biology Curriculum Lesson Plans. Sacramento: California State Department of Education, Agriculture Education Unit, 1990. [↑](#endnote-ref-1)