Lesson 4 - The Geologic Time Scale

Because the time span of Earth's past is so great, geologists use the geologic time scale to show Earth's history.

The geologic time scale is a record of the geologic events and the evolution of life forms as shown in the fossil record

How the Geologic Time was first developed

Scientists first studied rock layers and index fossils world wide, to place Earth's rocks in order by relative age. Later, radioactive dating helped determine the absolute age of the divisions in the geologic time scale.

Dividing Geologic Time

Scientists choose where units of time began and ended based on major changes in life forms at certain times.

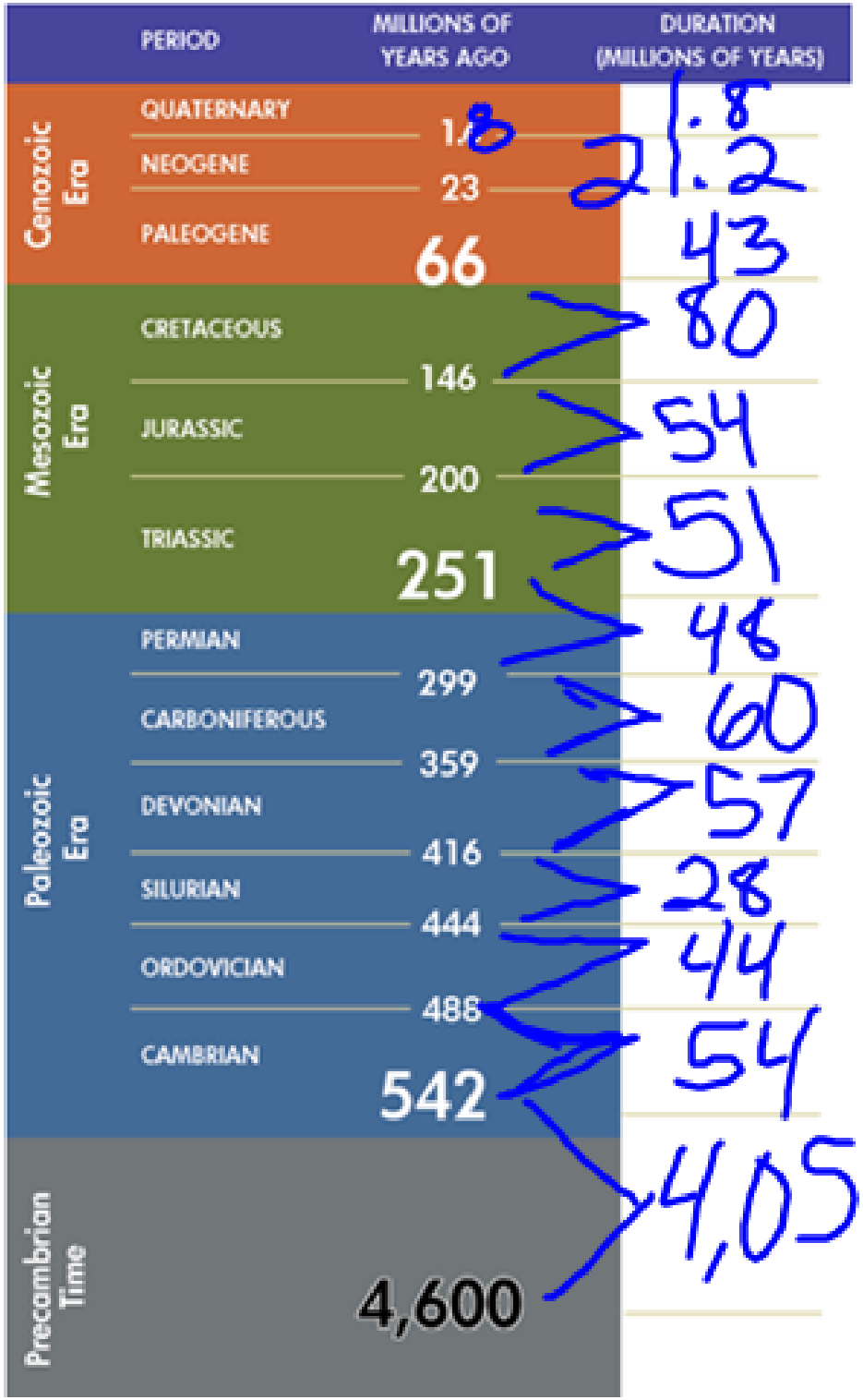
Precambrian Time - this is the long span of time that began geologic time. It is the start of the geologic time scale and ended 542 million years ago.

The time between Precambrian Time and the present was divided into three long units of time called eras. They are the Paleozoic Era, the Mesozoic Era, and the Cenozoic Era.

Eras are subdived into units of geologic time called periods. The Paleozoic Era is made up of six periods; the Mesozoic Era is made up of three periods; and the Cenozoic Era is made up of three periods. The last of these; the Quaternary Period, continues to the present time.

Names of many of these geologic periods comes from places around the world where geologists first described the rocks and the fossils of that period.

What Era did the Triassic Period, the Jurassic Period and the Cretaceous Period form during?



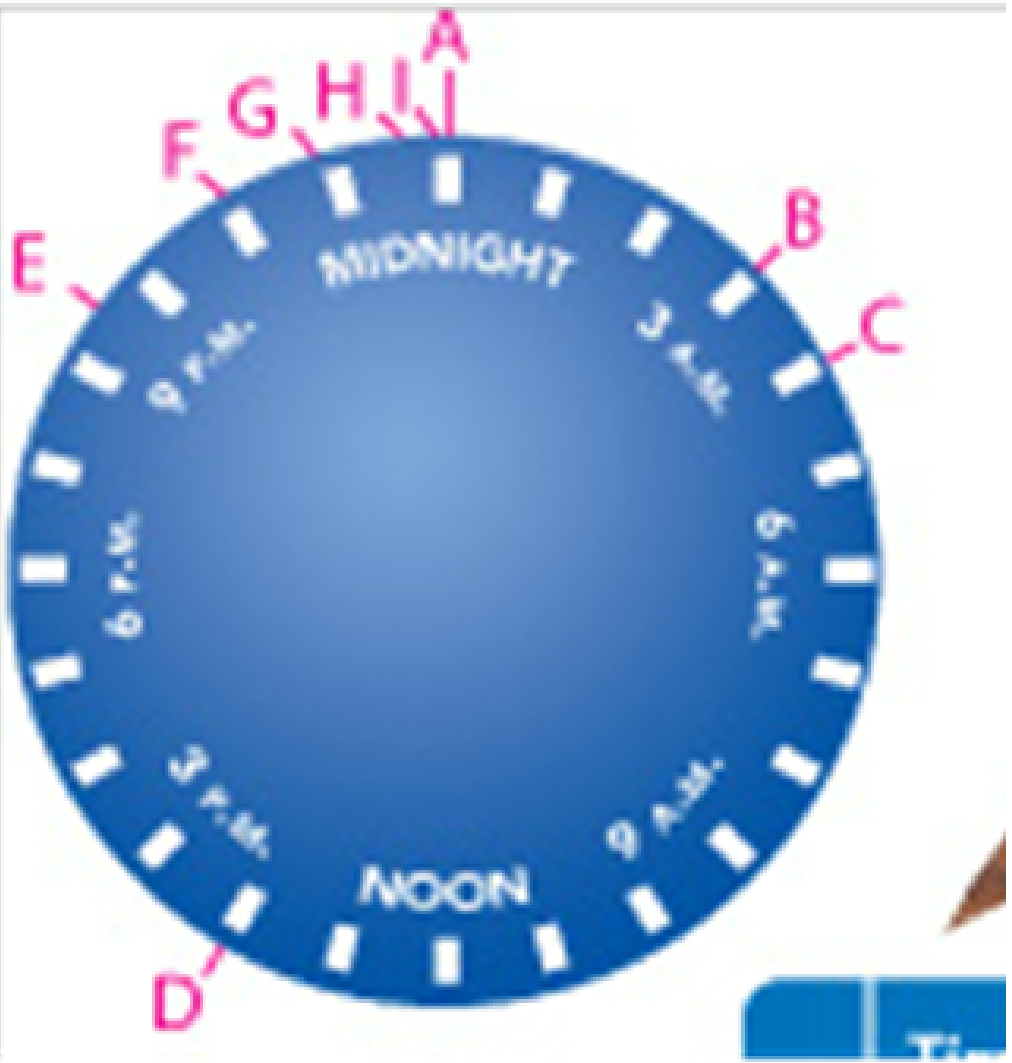
be able to do math

$$\begin{array}{r} 2\,8.0 \\ -\ \ 1.8 \\ \hline 2\,1.2 \end{array}$$

$$\begin{array}{r} 542 \\ -488 \\ \hline \end{array}$$

$$\begin{array}{r} 4,600 \\ -\ 542 \\ \hline \end{array}$$

	Time	First Appearance
A	Midnight	Earth
B	3:00 A.M.	Rocks
C	4:00 A.M.	Bacteria
D	2:00 P.M.	Algae
E	8:30–9:00 P.M.	Seaweeds and jellyfish
F	10:00 P.M.	Land plants
G	10:50 P.M.	Dinosaurs
H	11:39 P.M.	Mammals
I	11:58:43 P.M.	Humans



Organism: *Wiwaxia*

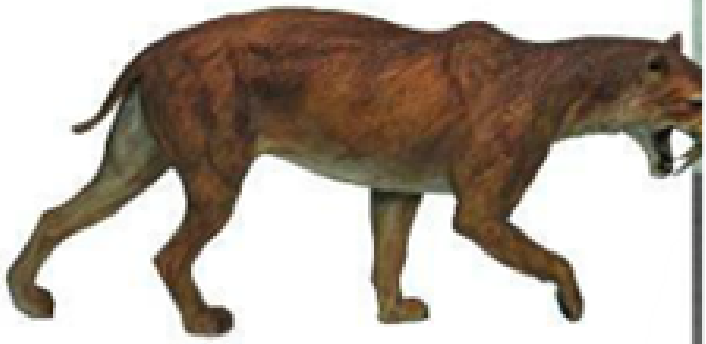
Age: about 500 million years

Period:

Organism: *Velociraptor*

Age: about 80 million years

Period:



Organism: *Smilodon*

Age: about 12,000 years

Period:

Refer to the geologic time scale shown in **Figure 2** to answer the questions below.

Suppose you want to make a model of the geologic time scale. You decide to use a scale of 1 cm = 1 million years.

1. Not counting Precambrian time, which era would take up the most space? Paleozoic

2. **Make Models** How long would the Mesozoic Era be in your model? 185 cm

3. CHALLENGE Suppose you used a different scale: 1 m = 1 million years. What would be one advantage and one disadvantage of this scale?

Advantage: It could show smaller divisions of time. Disadvantage: It would take lots of space to show all of Earth's history.