

FIGURE 2

The Geologic Time Scale

The divisions of the geologic time scale are used to date events in Earth's history.

Calculate After you read the next page, calculate and fill in the duration of each period. Then use the time scale to identify the period in which each organism below lived.



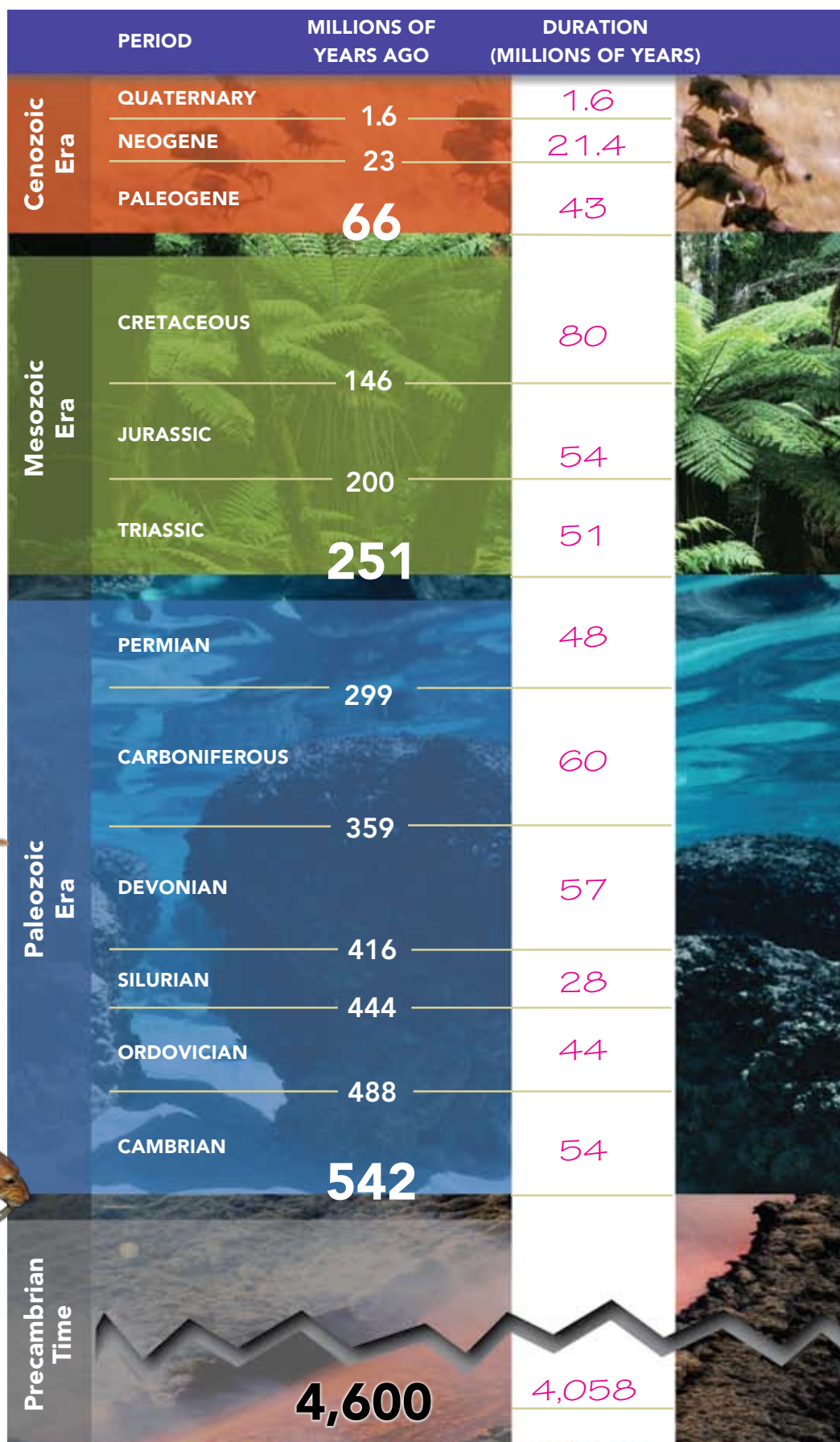
Organism: *Wiwaxia*
Age: about 500 million years
Period: Cambrian



Organism: *Velociraptor*
Age: about 80 million years
Period: Cretaceous



Organism: *Smilodon*
Age: about 12,000 years
Period: Quaternary



Dividing Geologic Time As geologists studied the fossil record, they found major changes in life forms at certain times. They used these changes to mark where one unit of geologic time ends and the next begins. Therefore, the divisions of the geologic time scale depend on events in the history of life on Earth. **Figure 2** shows the major divisions of the geologic time scale.

Precambrian Time Geologic time begins with a long span of time called Precambrian Time (pree KAM bree un). Precambrian Time, which covers about 88 percent of Earth's history, ended 542 million years ago. Few fossils survive from this time period.

Eras Geologists divide the time between Precambrian Time and the present into three long units of time called **eras**. They are the Paleozoic Era, the Mesozoic Era, and the Cenozoic Era.

Periods Eras are subdivided into units of geologic time called **periods**. You can see in **Figure 2** that the Mesozoic Era includes three periods: the Triassic Period, the Jurassic Period, and the Cretaceous Period.

The names of many of the geologic periods come from places around the world where geologists first described the rocks and fossils of that period. For example, the name *Cambrian* refers to Cambria, a Latin name for Wales. The rocks shown below are in Wales. The dark bottom layer dates from the Cambrian period.



apply it!

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

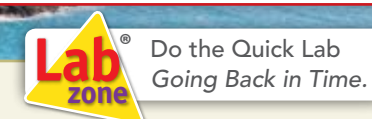
Suppose you want to make a model of the geologic time scale. You decide to use a scale of 1 cm = 1 million years.

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.



Assess Your Understanding

1a. **Define** The geologic time scale is a record of life forms and geologic events.

c. **Draw Conclusions** Refer to My Planet Diary and **Figure 2**. During which period did modern humans arise?

b. **Sequence** Number the following periods in order from earliest to latest.

Neogene 4 Jurassic 2
Quaternary 5 Triassic 1
Cretaceous 3

Quaternary

got it?

I get it! Now I know that geologic time is divided into eras and periods to show the long span of Earth's history.

I need extra help with See TE note.

Go to **my science** **COACH** online for help with this subject.