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\_\_\_\_\_, also called **angiosperms**, first appeared in the **Cretaceous Period** along with pollinating insects.

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The extinction of dinosaurs and other large reptiles at the end of the Cretaceous Period enabled mammals to diversify in the **Cenozoic era**. Because of this, the Cenozoic Era is known as

“The \_\_\_\_\_ of \_\_\_\_\_.”

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Oklahoma’s environment changed dramatically after the Cretaceous extinction. Study the diorama backgrounds in the Cenozoic Era. What was the environment like in Cenozoic Oklahoma?

- a. Humid, tropic forests
- b. Shallow oceans
- c. Cool, dry grasslands
- d. Barren, dry deserts

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Think about how the environment has changed through time in Oklahoma. What do you think it could look like in the next 500 years? Use evidence from the gallery to support your answer.

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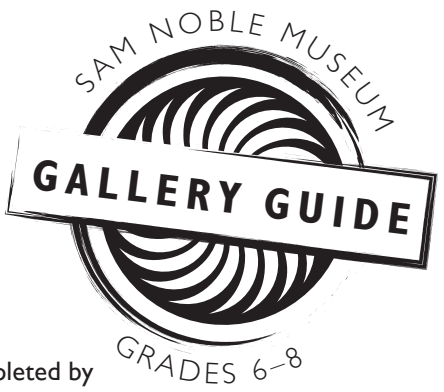
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# HALL OF ANCIENT LIFE



Welcome to the Sam Noble Museum!

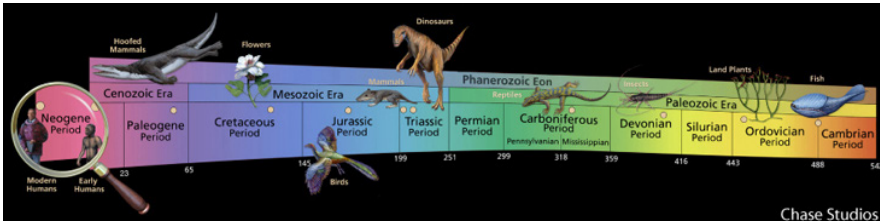
These gallery activities are designed to be completed by a student or group of students, with the help of an adult.

Gallery Guides are available for each of the museum’s three permanent galleries.

The Hall of Ancient Life takes you on a trip through time, from the formation of the earth, 4.6 billion years ago to the end of the Pleistocene Period, 11,700 years ago. Each section of the gallery represents a different time period in Oklahoma’s prehistory so you can see how the environments and animals have changed through time.

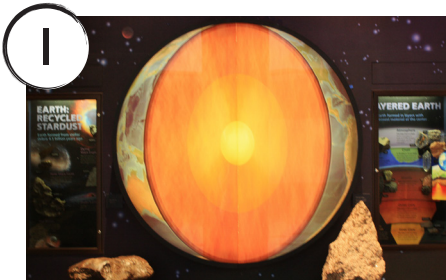
Everything you see in the gallery today is based on fossil evidence from plants and animals. Paleontologists, scientists that study ancient life, use this evidence to reconstruct life in the past. In fact, many of the fossil animals and plants you will see were found by museum paleontologists right here in Oklahoma including the giant Apatosaurus and Saurophaganax of the Jurassic Period!

Look at the geologic timeline below to see the different periods represented in the gallery. The timeline can be found on each section of the gallery marking which time period you are exploring.





1. Begin at the Hall of Ancient Life, located on the first floor. The entrance displays cases of plants and animals with a display of the earth in the middle.
2. Explore the gallery to find the answers to the questions below.
3. Start your journey at the entrance and end in the room with the mammoth.



The earth is made up of four layers: The **crust**, **mantle**, **outer core** and **inner core**.

What two types of rock make up the earth's crust?

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- 2 Find the rock layers on the wall across from the ocean display. Read about **stratigraphy** and surface layers, then fill in the blanks below.

The **law of superposition** states that \_\_\_\_\_ fossils are found below \_\_\_\_\_ fossils.



In the next section, look up to see some marine animals from the **Cambrian Period**. During this period, Oklahoma was covered by an ocean!

Why did many **Cambrian** animals evolve shells?

*Hint: Read the text panels below the trilobites.*

- a. To attract mates
- b. For camouflage

- c. For protection
- d. Because they could

- 4 Walk into the **Pennsylvanian coal swamp forest**. What plant from this time period is the source of coal in Oklahoma today?



Find the panel titled "The End of Nearly Everything." This refers to an **extinction event** at the end of the Permian Period.

According to the text, what type of extinction event was it?

- a. Background
- b. Dinosaur
- c. Complex
- d. Mass

- 6 An **index fossil** is a fossil that helps determine the age of a certain rock layer. What fossil animal is a good index fossil for the Triassic period because it is only found in the Triassic?

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- 7 **Sauropods** were large long-neck dinosaurs that could grow up to \_\_\_\_\_ feet in length.

What is the name of the Jurassic sauropod on display?

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- 8 Find the diorama with *Deinonychus* and *Tenontosaurus*. Scientists know the scene in the diorama is accurate because of **taphonomy**. Describe the study of taphonomy below.

*Hint: Read the text panels in front of the diorama.*

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