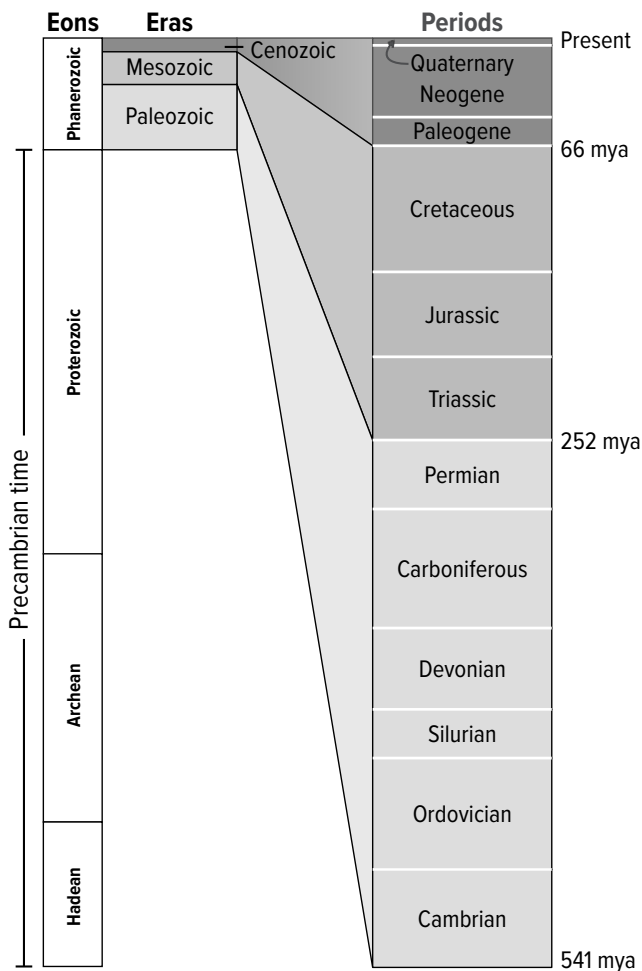


Chapter: **Geologic Time**

Answer the questions that follow.

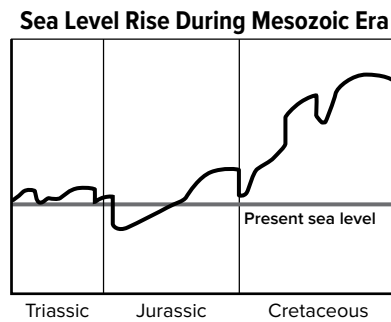
1. Precambrian fossils are rare compared to fossils from later eons.



What is the **best** explanation for the relative rarity of Precambrian fossils?

- (A) The Precambrian time was so brief that few fossils could form.
- (B) None of the Precambrian organisms had hard body parts, so fossils did not form easily.
- (C) Most rock formations occurred during later time divisions, so there was no new rock to contain fossils.
- (D) Precambrian rock layers are buried so deep that it is very hard to reach them to find the fossils.

2. The following chart shows changes in sea level during the Mesozoic Era.



Which change **most likely** occurred during the Cretaceous period?

- ☐ F Earth's average temperature dropped.
- ☐ G Most of the ice at Earth's poles melted.
- ☐ H Land bridges formed between continents.
- ☐ I Glaciers moved from the Arctic southward.

3. Television cartoons sometimes show people interacting with many different large dinosaurs in ancient times.

What evidence shows that this could NOT have happened?

- (A) Dinosaurs lived in the Americas, while people lived in Africa during that period.
- (B) The dinosaurs would have eaten people, so people stayed away from them.
- (C) The last dinosaurs died tens of millions of years before the first human existed.
- (D) The different species of dinosaurs lived during various periods, and people could not interact with all of them at once.

For questions 4, 5, and 6, refer to the following passage.

In this group of questions, you will use your knowledge about mammals in the Cenozoic Era to answer three questions.

Emergence of Mammals, Including Humans

Although mammals began to evolve in the Mesozoic Era, they were mostly small. Therefore, the Cenozoic Era is sometimes called the age of mammals. Dinosaurs and reptiles were the dominant species during this Era. After the Cretaceous extinction event, many more species of mammals evolved. Much larger mammals appeared, and mammals became dominant.

In the recent part of the Cenozoic Era, humans evolved. The oldest human fossils are nearly 6 million years old. Modern humans, called *Homo sapiens*, evolved much later. Early *Homo sapiens* were in Africa. From there, they migrated to Europe, Asia, and eventually North America and South America. The migration to North America occurred during the Ice Age when sea levels were lower than they are today.

4. According to modern theories, humans evolved in Africa and then migrated to the rest of the continents.

What evidence **best** supports this conclusion?

- (F) The oldest historical records come from Africa.
- (G) All of the early human fossils have been found in Africa.
- (H) Humans are mammals, and all mammals originated in Africa.
- (I) There are more people in Africa and Asia than in other parts of the world.

5. Archaeological evidence indicates that humans migrated from Asia to North America during the Pleistocene Ice Age. These two continents are currently separated by the ocean.

Which theory describes how humans **most likely** moved between the continents?

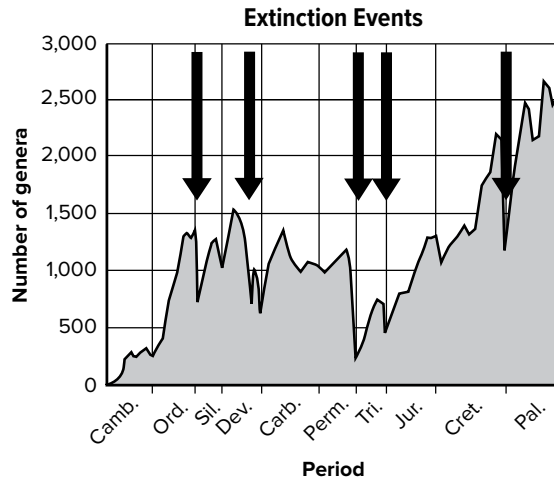
- (A) Both continents were part of Pangaea, so they were connected.
- (B) During the Ice Age, sea level was lower, and an ice bridge formed between the continents.
- (C) Higher sea levels during the Ice Age allowed humans to pass between continents on boats.
- (D) Humans traveled through shallow water by riding on large domesticated animals that could wade through the water.

6. Fossil records show that the growth of mammal species occurred after the extinction of dinosaurs at the end of the Mesozoic Era.

According to the current theory, which event **most likely** caused this extinction?

- ☐ F change in energy from the Sun
- ☐ G large meteor strike
- ☐ H beginning of the Ice Age
- ☐ I movement of continents

7. The graph illustrates the number of genera of living organisms at various times based on fossil records. The arrows above the line indicate times at which there was a large drop in the types of organisms on Earth.



According to the graph, how do these extinction events relate to the geologic timeline?

- (A) Extinction events tend to mark the end of one period and the beginning of the next.
- (B) Extinction events appear to occur randomly and are unrelated to the geologic timeline.
- (C) Extinction events are natural changes and are not related to the timeline model, which was developed by humans.
- (D) Extinction events occurred when the number of living things increased suddenly in the middle of a period.

8. When Pangaea broke apart in the Mesozoic Era, the first fracture formed Gondwanaland and Laurasia. Laurasia broke apart later into North America and Eurasia (the continents of Europe and Asia).

Which evidence could support this theory of Earth's geologic history?

- ☐ F the development of mega-mammals during the Cenozoic era
- ☐ G the uneven distribution of Paleozoic fossils among the continents
- ☐ H the locations of the Appalachian Mountains and the Rocky Mountains in North America
- ☐ I differences and similarities in Cretaceous fossils found in the northern and southern hemispheres

9. During the Late Paleozoic Era, organisms developed that had lungs. Lungs allowed them to breathe air and survive outside of water.

What was the earliest type of organism to have lungs?

- ☐ (A) amphibian
- ☐ (B) dinosaur
- ☐ (C) fish
- ☐ (D) reptile