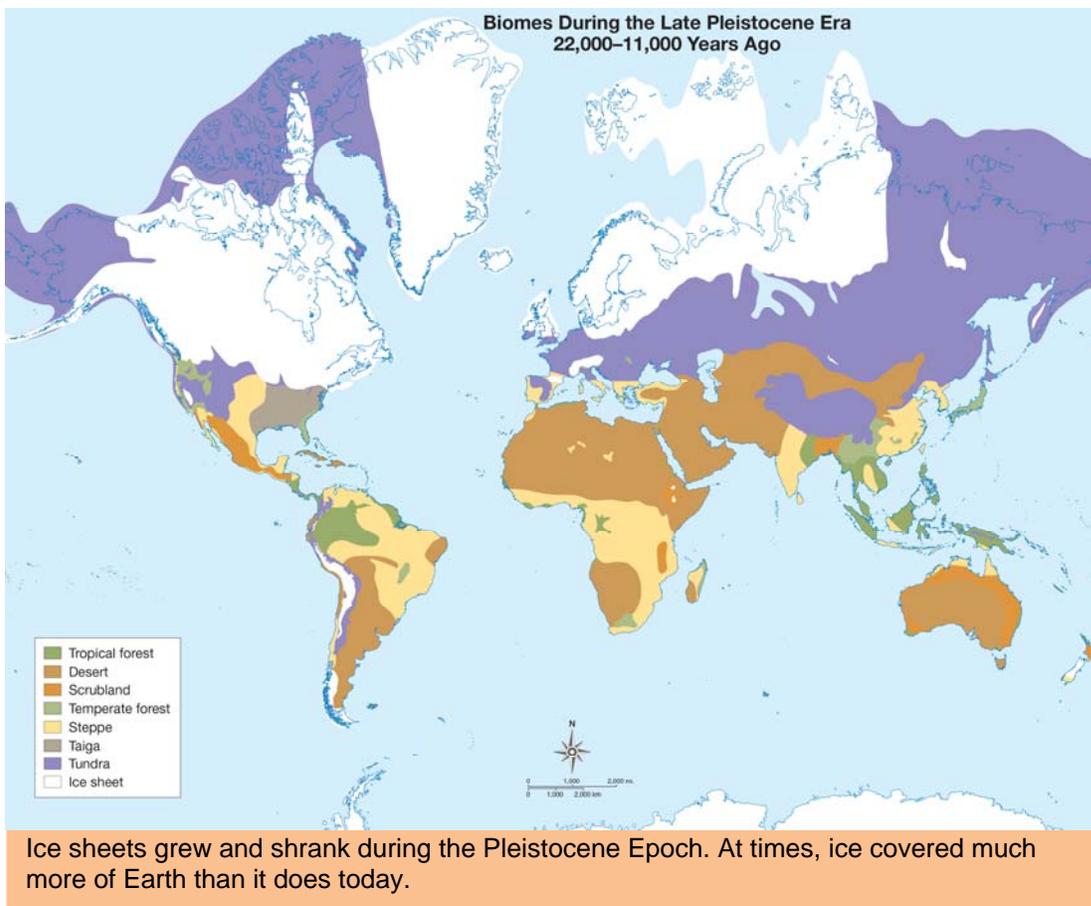


The Pleistocene Epoch lasted from approximately 2,588,000 to 11,700 years ago. This period is often called the Ice Age, but it was actually a time of diverse climate change. Ice spread over much of Earth, then receded, and later spread again. Many present-day animals, including human beings, evolved during the Pleistocene. Some animals adapted to the changing climate. Others became extinct as a result of the extreme climate change. Early human ancestors were present at the start of the Pleistocene. By the end of epoch, *Homo sapiens* (modern humans) had evolved and spread across much of Earth.

Changing Climate, Changing Land



As many as 20 glaciations, or ice ages, occurred during the Pleistocene. Each glaciation lasted for thousands of years. Between glaciations, Earth warmed again. The difference in the temperature was only about 9 degrees Fahrenheit. However, this small change in temperature resulted in huge changes to the planet's surface.

During a glaciation, ice sheets that were a mile thick covered most of the northern hemisphere. About one-third of North America, all of England, and even parts of Africa and South America, were covered by glaciers. The southern hemisphere, however, was much warmer. Areas of Africa and North America that are now deserts were grasslands during this period.

***Homo Sapiens* Evolve**

Near the start of the Pleistocene two million years ago, a species called *Homo habilis* lived in Africa. *Homo habilis* may have been the first human-like animal to walk Earth.

Another human ancestor emerged about 1.6 million years ago: *Homo erectus*. *Homo erectus* walked on two feet, as modern humans do. However, its brain was much smaller and it was far less intelligent than modern humans.

Homo sapiens and *Homo neanderthalensis* are both believed to have evolved from *Homo erectus*. *Homo neanderthalensis*, or Neanderthals, evolved about 400,000 years ago during an interglacial period. *Homo sapiens* first arrived around 200,000 years ago. *Homo sapiens* and Neanderthals existed at the same time. *Homo sapiens* lived mainly in Africa and East Asia, while Neanderthals lived in Europe and western Asia.

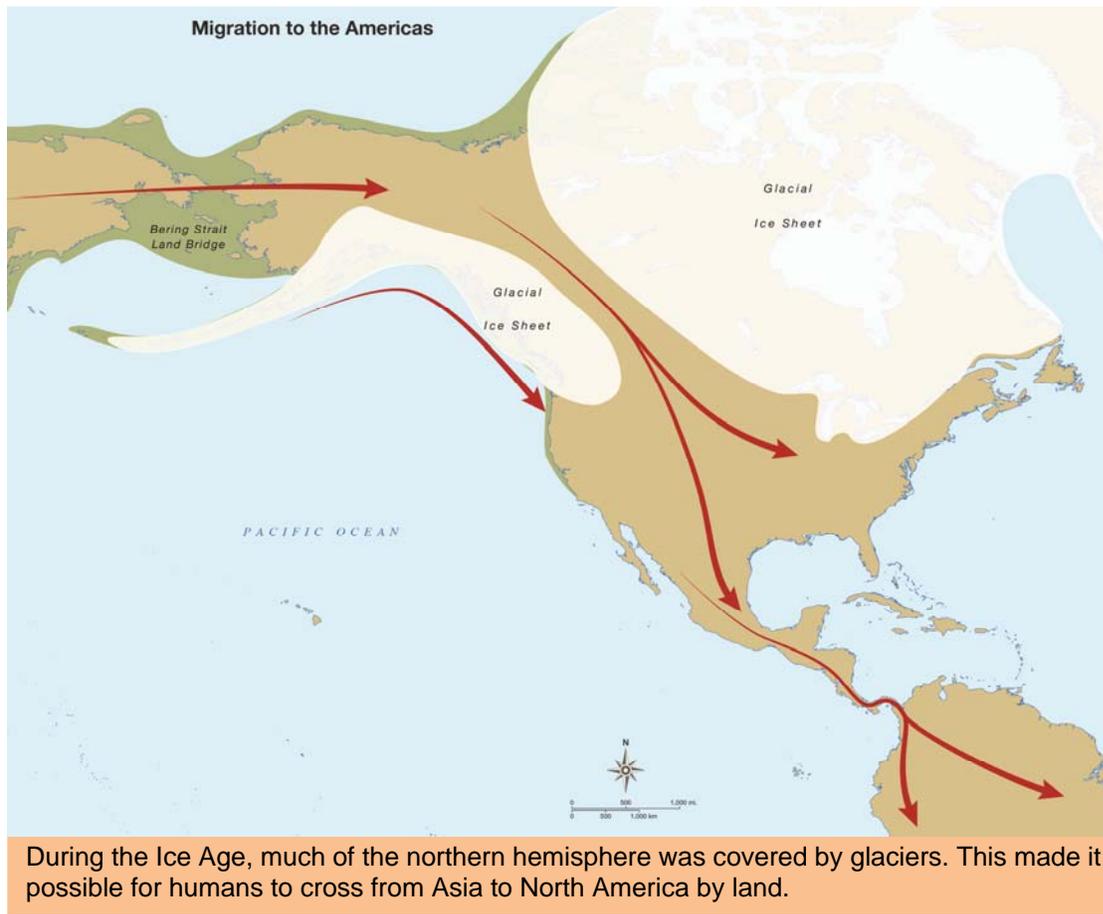
Homo sapiens, or modern humans, arrived in Europe approximately 50,000 years ago. Neanderthals disappeared about 40,000 years ago. That means that *Homo sapiens* and Neanderthals both lived in Europe for around 10,000 years.

Homo sapiens and Neanderthals had a great deal in common. Both were intelligent species. Both had learned how to make tools from rock and bone, how to control fire, and how to hunt. Both wore clothing, buried their dead, and followed other cultural customs. Neanderthals were shorter and stockier than *Homo sapiens*. This may have meant they were better adapted to the cold.

Humans Migrate During Glaciation

During glaciations, much of Earth's water was locked in the form of ice. Areas that were once lakes and seas dried up. At the time of a glaciation, about 20,000-30,000 years ago, dry land connected Asia to Alaska. Scientists call that area of land the Bering land bridge.

Most scientists believe that *Homo sapiens* migrated across the Bering land bridge from Siberia to North America. They may have decided to cross the land bridge because they were following herds of moose or caribou to new hunting grounds. Then, a few thousand years later, the glaciers began to melt, and the water started to rise. Instead of returning to Asia, the people and animals on the Bering land bridge traveled south. Some humans may have migrated all the way to South America after crossing the Bering land bridge.



Humans Adapt to Climate Change

The last glaciation ended approximately 10,000 years ago. Before the end of that last ice age, human beings depended upon hunting to survive. Many species, such as the woolly mammoth, provided ancient people with food, clothing, and other important resources.

Many of the giant animals of the Pleistocene, such as the giant ground sloth, disappeared at the end of the last glaciation. Some scientists believe that many of these animals could not survive the sudden climate change. Others believe that human beings may have hunted the giant species to extinction.

As the climate warmed, human beings began to change the way they lived. Many more species of vegetables and fruits were able to thrive in the warmer weather. Humans noticed this change and developed new skills to take advantage of it.

From Hunters to Farmers

During the Paleolithic Age of the Pleistocene Epoch, different species of human-like animals lived in different locations on the planet. By the end of the Paleolithic, only one species remained: *Homo sapiens*.

Homo sapiens were different from other, similar species in several ways. Their heads were rounder, and their brains were larger. The most important distinction was the ability of *Homo sapiens* to adapt to environmental changes.

As the planet moved into a warmer period, *Homo sapiens* were better equipped than other human-like species to thrive in the new conditions. Instead of following herds of animals to hunt, many groups of *Homo sapiens* settled down and became farmers. They learned to domesticate animals such as dogs, sheep, cattle, and horses. These animals were used for food, warfare, and labor such as plowing fields. *Homo sapiens* also learned to plant and harvest seasonal crops and to store food and water for later use. They learned that crops such as wheat or lentils could be stored. These new skills made it easier for people to survive periods of drought, flood, or cold.

Early human-like species also hunted, cooked, and raised children in groups, much like *Homo sapiens*. In fact, some evidence suggests that Neanderthals even buried their dead, which suggests that these groups had some organization and culture. Over time, *Homo sapiens* learned to organize labor by having different people take care of different tasks. While one group hunted, another cooked. While some people built houses, others made cooking pots or cared for children. The switch to communal living and the division of labor were very important changes for *Homo sapiens*. These are the characteristics that led to the rise of modern human civilization.

After reading the passage, answer the following questions:

1. Which of the following is the **best** definition of the word *Pleistocene* as it is used in the passage?
 - A. a period during which many cycles of climate change occurred
 - B. a period during which the entire planet was covered in thick ice
 - C. a period during which the northern hemisphere was extremely hot
 - D. a period during which modern humans became the dominant species

2. Why does the writer discuss the Bering land bridge?
 - A. It caused the extinction of several giant species.
 - B. It provided a migration route to for early humans.
 - C. It served as a vital trade route during the Pleistocene.
 - D. It allowed *Homo sapiens* to survive between glaciations.

3. Compare the map on page 1 to the climate and biome maps of the world in the Techbook Atlas. Which regions experienced the most change? How do you think these changes impacted life, including human life, in those regions?