

An illustration of a massive glacier flowing through a canyon. The glacier is white with blue and grey striations, indicating layers of ice and rock. The canyon walls are dark grey and brown, with visible cracks and textures. The sky is a clear blue. The overall style is a simple, bold line drawing with flat colors.

All About The Ice Age

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What Is an Ice Age?

Since Earth began, global temperatures have gone up and down. This can be caused by a number of things including **Earth's orbit and tilt**, **volcanoes**, **ocean currents** and **the movement of tectonic plates** on the surface of the planet.



An ice age is when temperatures all over the world are low and stay low for a long time.

Glaciers are formed in an ice age and continually expand during this time.

Where Are We Now?

We are currently in an **'interglacial period'**.

As temperatures finally rise again (after several thousands of years) glaciers start to recede and we see the start of what is called an interglacial period.



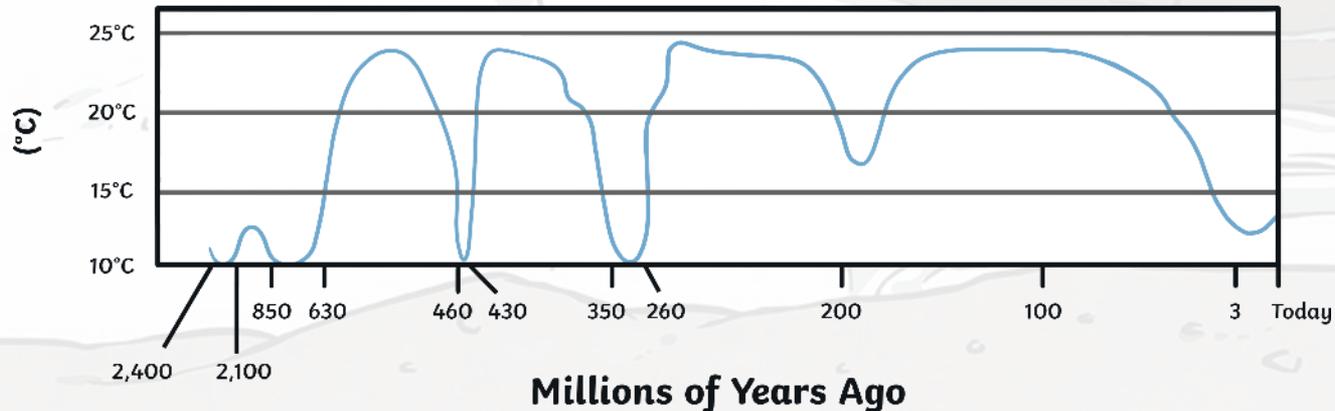
During interglacial periods, there is still at least one major ice sheet (big expanse of ice); currently we have two: one in the **Antarctic** and one in **Greenland**.

Five or More Ice Ages

Over the past million years, there have been many epochs (smaller ages) of glacial expansion but there have been at least five major ice ages.

This graph shows the average global temperature fluctuating over millions of years. We are in an interglacial period of the **Quaternary Ice Age** right now.

Ice Ages during the past 2.4 billion



How Does an Ice Age Start?

An ice age starts when glaciers are growing. This happens when the global temperatures cool, which means that places like Canada end up really cold.

Snow falls but doesn't melt. More snow falls on top of it and the underneath snow turns to ice. As this cycle continues, a glacier is formed and the weight of it makes it start to move forward.



The fact that a lot of water is trapped in glaciers at this time also makes sea levels drop.

The Most Recent Ice Age

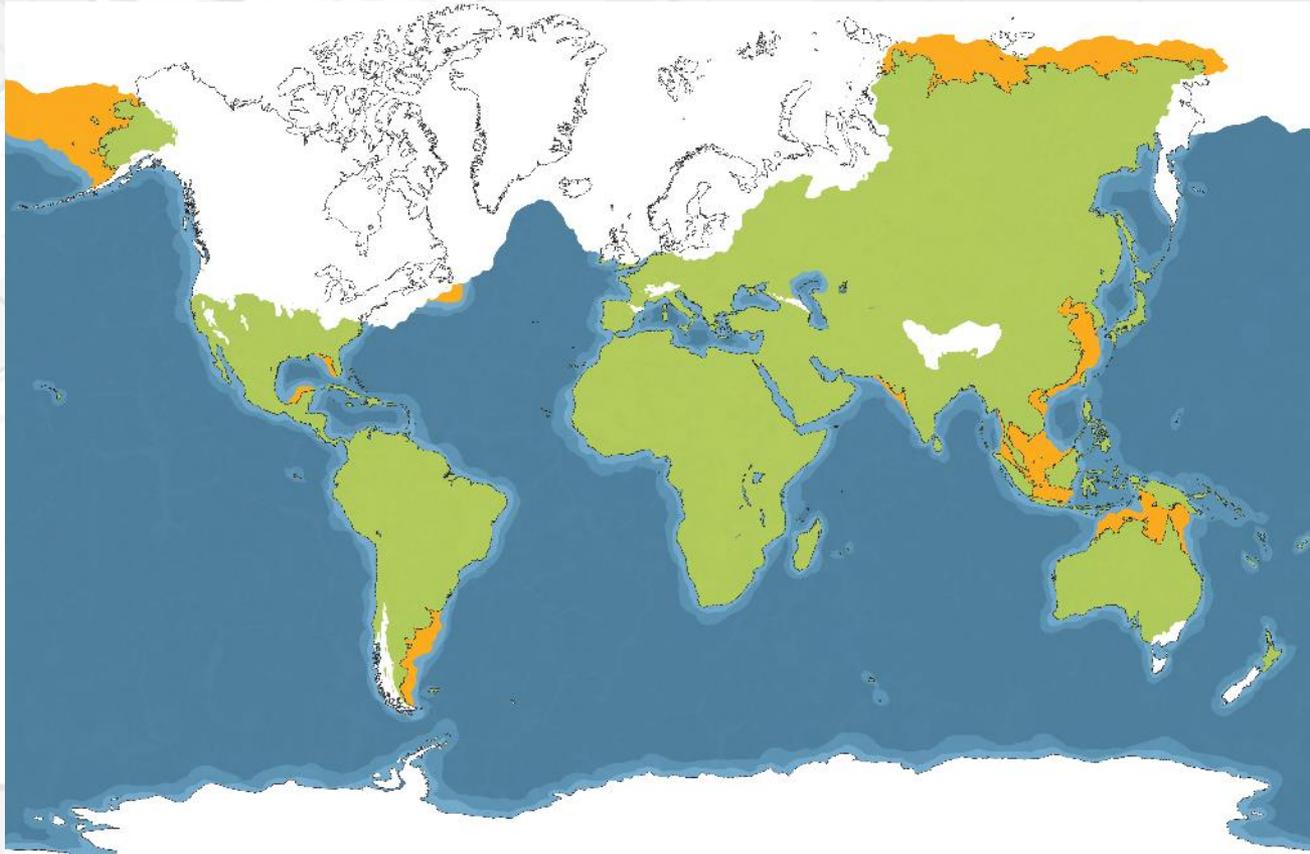
The time we refer to now as '**the Ice Age**' was the most recent ice age that started between 110,000 and 70,000 years ago and lasted until around 12,000 years ago. This was also the earliest and longest part of the Stone Age.

At the height of the Ice Age, there were huge sheets of ice, some up to 4km thick, across Canada, Northern Europe, Russia, parts of Asia and South America – around one third of earth.

The fact that so much water was tied up in ice, meant the oceans were a lot lower than they are today, about 120m lower. This led to some interesting changes, with land appearing that had previously been underwater.

Look at the map on the next page to see the ice sheets and spot where the extra land has appeared.

Ice Age Map with Ice and Extra Land

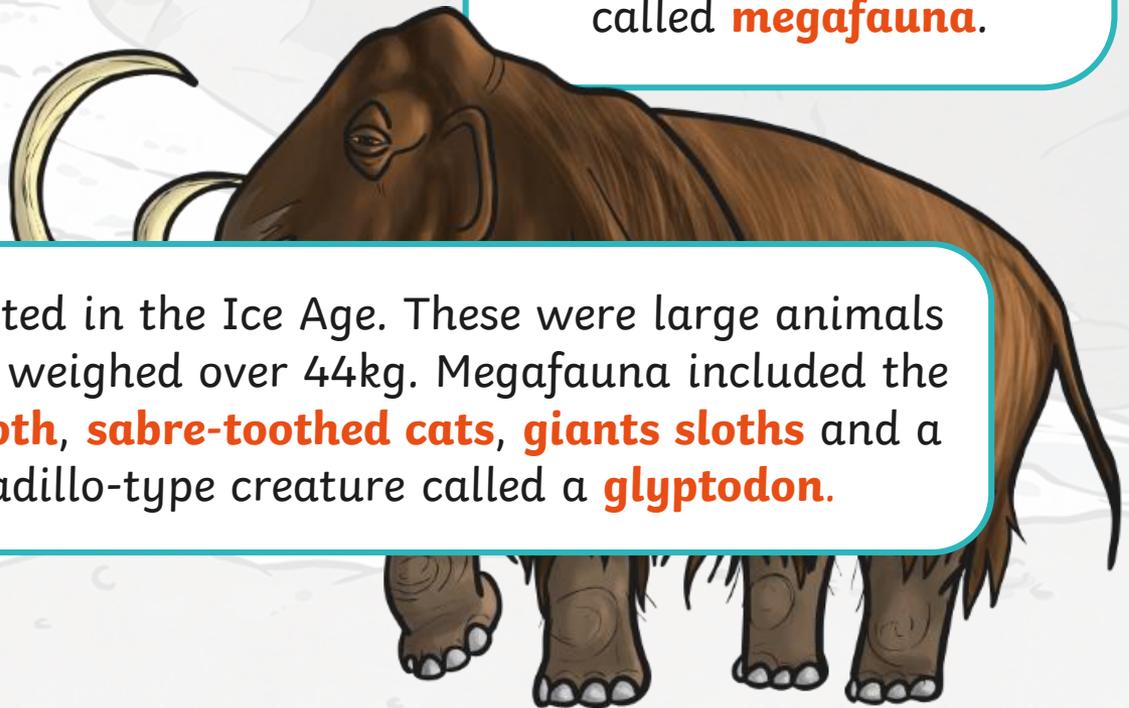


Who or What Were Around?

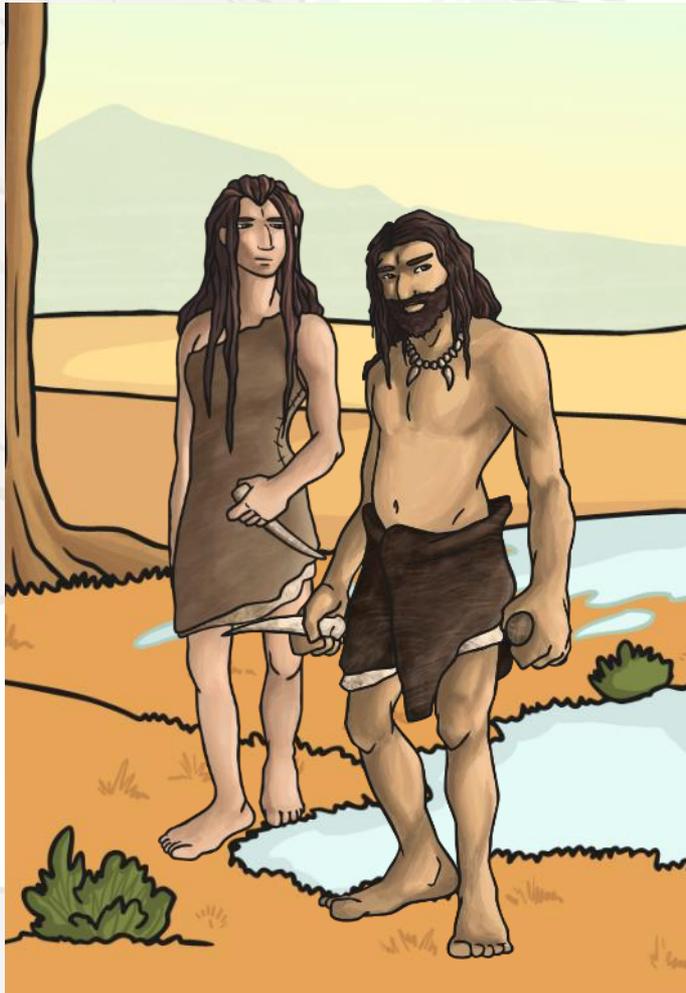
Humans were around in the last ice age and made good use of the extra land that appeared to migrate to different places in the world. These humans, who survived the Ice Age and are our ancestors, were **Homo sapiens**.

Along with Homo sapiens, there were various plants and animals, including many giant animals called **megafauna**.

Megafauna existed in the Ice Age. These were large animals where an adult weighed over 44kg. Megafauna included the **woolly mammoth**, **sabre-toothed cats**, **giants sloths** and a huge armadillo-type creature called a **glyptodon**.



Did Homo Sapiens Survive?



Even though the conditions were extremely harsh, Homo sapiens survived. Those early humans were able to hunt animals for food and also use tools for survival. These included tools made from stone.

They were also able to make tools from bones which included early needles that they used to sew furs together to make warm clothes.

Due to the low ocean levels, the land bridges that appeared made it possible for Homo sapiens to migrate to other countries without boats or transport and follow better conditions.

What about the Megafauna?

Many of the megafauna became extinct during the Ice Age due to the extremely harsh conditions and some hunting by Homo sapiens.

Smaller plants and animals were able to survive in warmer places, such as near volcanoes. Here are some of the large animals you may have seen roaming earth during the Ice Age that aren't around anymore.



Mastodon



Glyptodon



Woolly Mammoth

Megatherium



Sabre-Toothed Cat

Evidence of the Ice Age

In the UK, we can still see evidence of the Ice Age all around us. We know that a **U-shaped valley** was made a long time ago by a glacier (V-shaped valleys have been made by rivers).

Scientists have also drilled down into ice and the earth to find evidence of the Ice Age. They have uncovered animals and plants that no longer exist in the ice and as fossils. Just drilling deep down into ice can reveal the amount of greenhouse gases around at a particular time!



Ice Age Facts

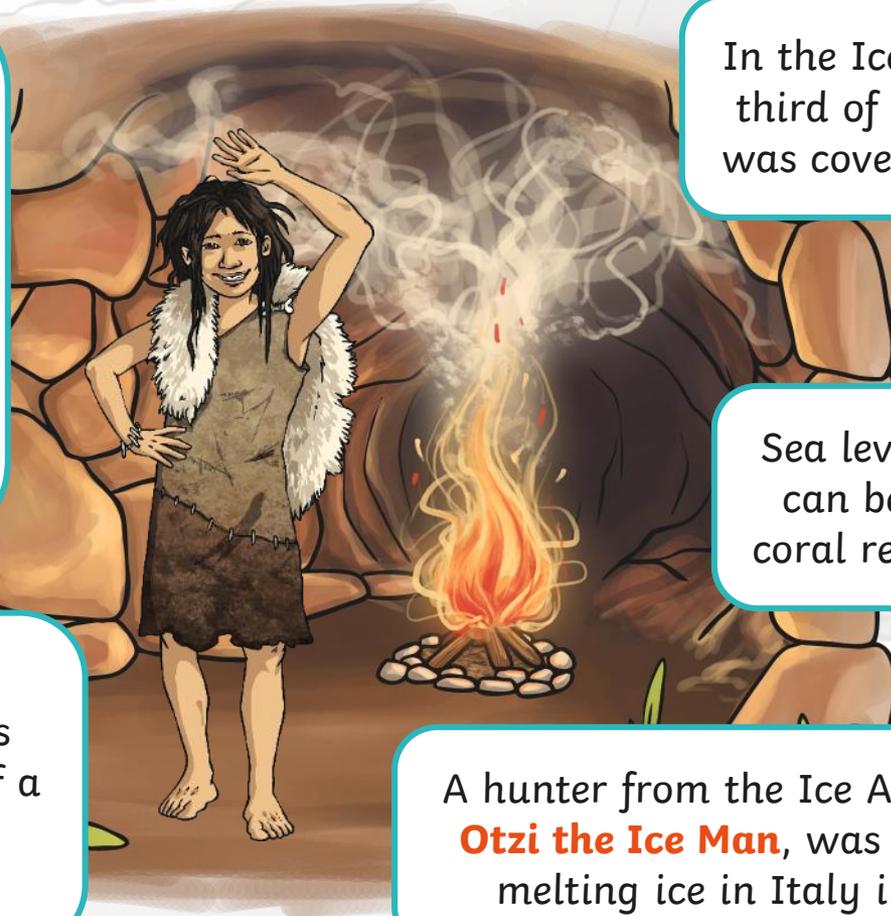
There has been a more recent cold time called the **Little Ice Age**, between 1300 and 1870, where people could actually skate on the ice on the River Thames!

In the Ice Age, one third of the earth was covered in ice.

Sea level history can be seen in coral reefs today.

The beginning of farming by humans was the beginning of a significant rise in greenhouse gases.

A hunter from the Ice Age, called **Otzi the Ice Man**, was found in melting ice in Italy in 1991.





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