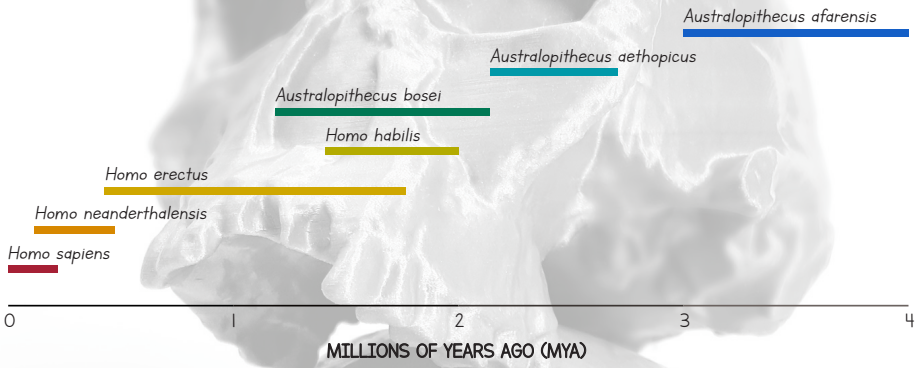
Hominid Skull Guide

Evolution Discovery Kit



Every species is unique. A *genus* is the name given to a group of closely related species (domestic lions, tigers and panthers all belong to the genus '*Panthera*'). Beyond that, we can group similar genera (the plural of genus) into Families (a domestic cat belongs to the same Family as the lions and tigers, 'Felidae').

Humans are no different. However, all of the species that once belonged in our Genus '*Homo*' are now extinct. You may be surprised to realise that members of our wider Family, Hominidae' or Hominids, still exist - the oragutan, gorilla, chimpanzee and the bonobo.

Over the past 4 million years, different *Homo* species have existed, sometimes alongside one another (see image above). New species usually occur over millions of years due to changes in the environment (including migration) or social conditions. It is thought that the *Homo* genus evolved from the *Australopithecus* genus over 2 million years ago.

Australopithecus afarensis

Lived in Eastern Africa - living between 3 and 4 mya

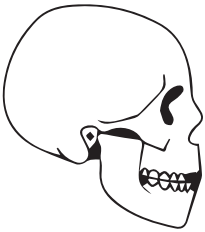
A. afarensis one of the longest surviving species and palentologists have found lots of remains to study that have given us a good understanding of what this species may have looked like and behaved. An almost-complete skeleton was found in 1974 and named 'Lucy' after a Beatles song.

As you can see from the reconstruction on the right page, *A. afarensis* had quite an ape-like face, with a flat nose and low forward-facing jaw, as well as the characteristic long arms. Despite having larger teeth than modern humans, their teeth were smaller than great apes. Compared to humans, they had a relatively small brain size.

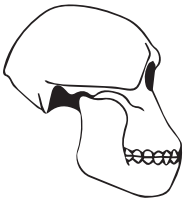
Scientists are unsure whether *A. afarensis* walked upright or climbed trees. It is likely that they did both. Great apes can spread out their big toe to grip onto branches and their mothers fur, but *A. afarensis* has toes more like humans. However, the finger and shoulder joints of *A. afarensis* are similar to apes, allowing them to grip swing from trees.

The name Australopithecus means 'southern ape', rather than having anything to do with Australia!

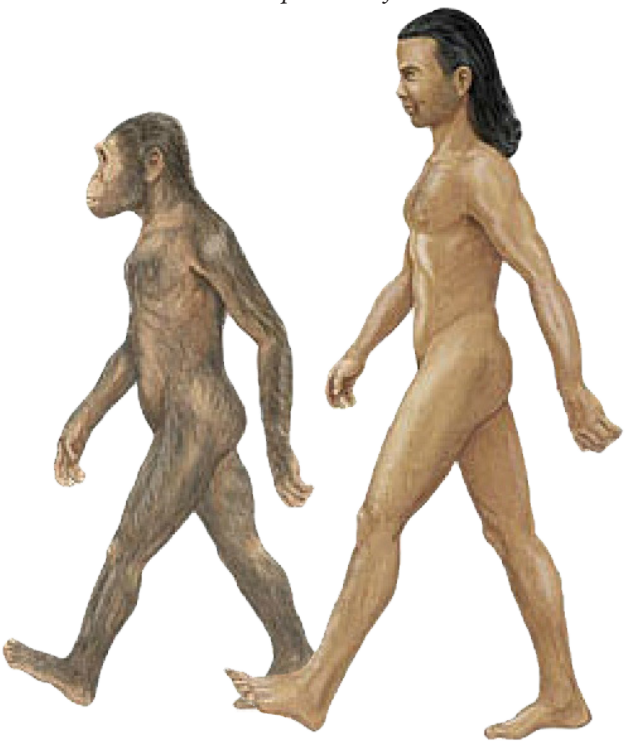
Above: Forensic facial reconstruction of *Australopithecus afarensis*



Homo sapiens



Australopithecus afarensis



Australopithecus afarensis *Homo sapiens*

Homo habilis

Lived in Eastern and Southern Africa - living between 1.4 and 2.1 mya

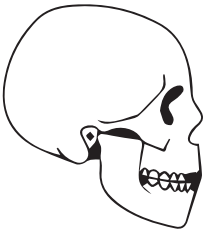
Homo habilis, known as the 'handyman', was the first hominid to be discovered alongside stone tools. This discovery led researchers to classify this species within the *Homo* genus.

They were very short, standing on average at 1.3m tall, with long dragging arms. It's cranial capacity (and therefore its brain) was less than half the size of humans.

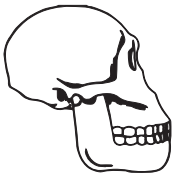
Homo habilis is arguably the least similar species to modern humans within the *Homo* genus, and scientists are now debating whether it truly belongs in the genus at all. Some scientists believe that *Homo habilis* should be reclassified as an Australopithecine, as Australopithecines have also been found to have used stone tools, and have very similar physical attributes to *Homo habilis*.

This debate highlights the importance of research and discovery in our understanding of the world. One new discovery can change our whole understanding of where we came from.

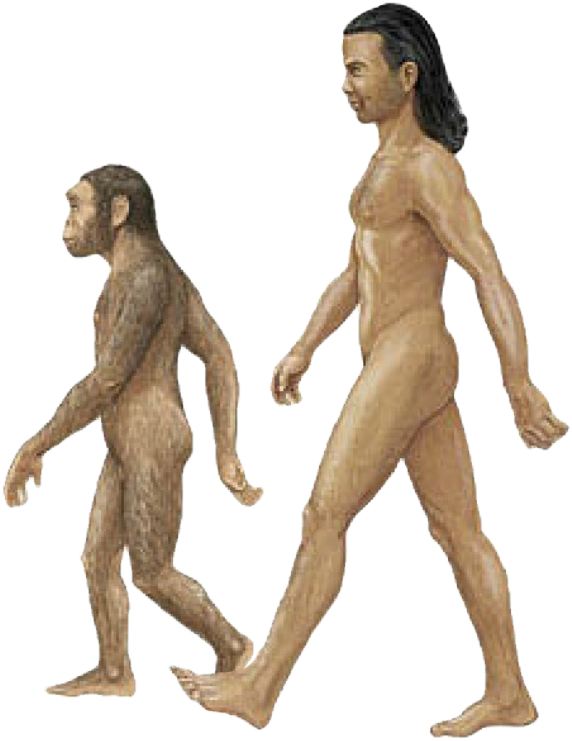
Above: Forensic facial reconstruction of *Homo habilis*



Homo sapiens



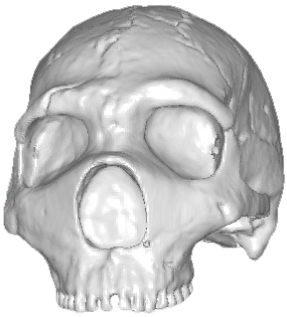
Homo habilis



Homo habilis *Homo sapiens*

Homo neanderthalensis

Lived in Eurasia - living between 40,000 years ago and 1.8 mya



Homo neanderthalensis, or neanderthals, are a hot topic for palentologists and there is a lot of debate about them. There are a few things we know for sure, thanks to excavation of their bones:

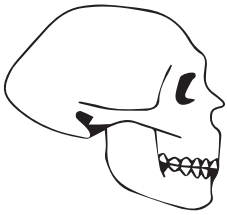
They had a long, flat, low braincase, with a large cranial capacity (so their brains were bigger than modern humans!). Their forehead receeded much quicker and they had heavier, thicker brows. The nasal cavity was large, and well adapted to both hot and cold weather (necessary in Eurasia). They had little or no chin, and their eye sockets were more circular and larger than ours, supporting the idea that they could see better than us.

It is thought that they would have been about the same size as humans, maybe stronger, and probably a lot furrier! They made tools out of stone, used fire and were both hunters and gatherers.

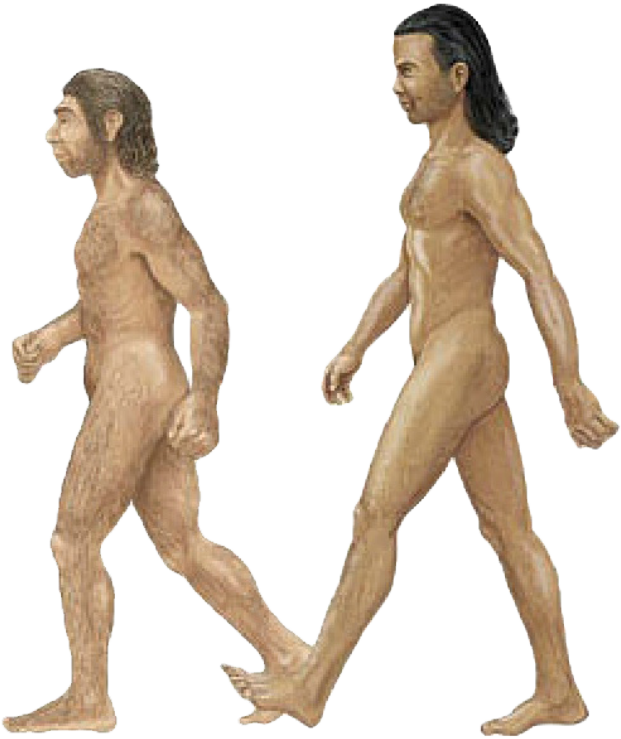
There's no agreement on how they died out. It could have been a volcanic eruption, or modern humans could have brought an African disease with them when they moved into Europe. Some people think that neanderthals may have interbred with modern humans instead.

Above: Forensic facial reconstruction of *Homo neanderthalensis*

Homo sapiens



Homo neanderthalensis



Homo neanderthalensis *Homo sapiens*

Homo sapiens

Emerged 200,000 years ago, spread worldwide from Africa

Modern humans have had a huge impact on the planet, despite only being around for a relatively short time, compared to other hominids.

The name, *Homo sapiens*, means 'wise man' and was coined by Carl Linnaeus (below) in 1758. When he classified humans, he put us in the same category as Primates. This was extremely contraversial at the time as people didn't consider humans to be part of the animal kingdom.

Some people consider Linnaeus to be the type specimen for *Homo sapiens*, but there can't truly be a type specimen for humans. This is because type specimens need to be dead, preserved and also be named by the person who identified them. Unfortunately you can't identify yourself once you're dead!

Modern humans have a slender, light skeleton compared to earlier hominids. We have very large brains, which is likely because social and survival situations have become more complex and a more sophisticated brain would be an advantage.

Male *Homo sapiens* still have a slight brow ridge, but this is much less prevalent than in earlier species. Our jaws are less developed, are not pushed forward, and we have smaller teeth.

It's anyone's guess how long *Homo sapiens* will remain on Earth!