



There are a few key developments that allowed the Homo genus, including modern humans, to be so successful compared to our ancestors. Some of these changes were morphological, meaning that they were physical transformations over time. Others were behavioural, changing the way hominins thought and acted. Often, these two kinds of changes were connected.

What led to the great success of homo sapiens? Some key developments included:

LARGER BRAINS



Eating plants takes a lot of work, and an extensive digestion system. Anthropologists have theorized that the increased consumption of meat by hominins (and thus, shortening of the energy-consuming digestive tract), allowed this excess energy to be funneled towards the development of a larger brain. This is called the expensive tissue hypothesis. With increased brain capacity, reasoning, and ingenuity, hominins would go on to develop other advantageous traits—such as tool-making, a unifying culture, and control over fire for cooking and protection.

BIPEDALISM



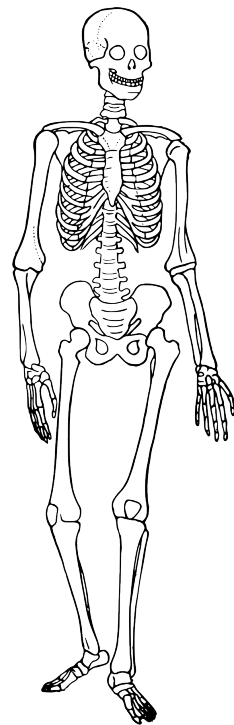
Over time, our skeletons shifted to allow hominins to walk comfortably on two feet, trading a home in the trees for one on the ground. This freed our hands, allowing us to use tools and hunt with our opposable thumbs, and well as increasing our ability to travel long distances. Our hips, spines, legs, and even feet changed to support the upright weight of our body. Consider the arch in your foot. Walk normally across the room, heel to toe. Now, try walking so that your toes hit the ground first. Imagine how apes with flat feet would be disadvantaged by this.

On the next page, look at the 3 skeletons provided. On the left is a chimpanzee, one of our closest living relatives, but diverging from the *homo* genus about 7 million years ago. In the middle is Lucy, the famous *Australopithecus Afarensis*, and likely direct ancestor. On the right, a modern human like you. What differences can you note in the skeletons? What traits do you think these differences are indicators of?

MORPHOLOGY & BEHAVIOUR



The traits that led to the success of the *homo* genus were particularly advantageous for those living on the ground. However, they would be disadvantageous elsewhere. Can you think of scenarios where our body shape and posture doesn't come in handy, or may in fact hinder us? How are other primates like chimpanzees adapted well to their own environment?



What differences can you note in the skeletons (circle them)? What traits do you think these differences are indicators of?