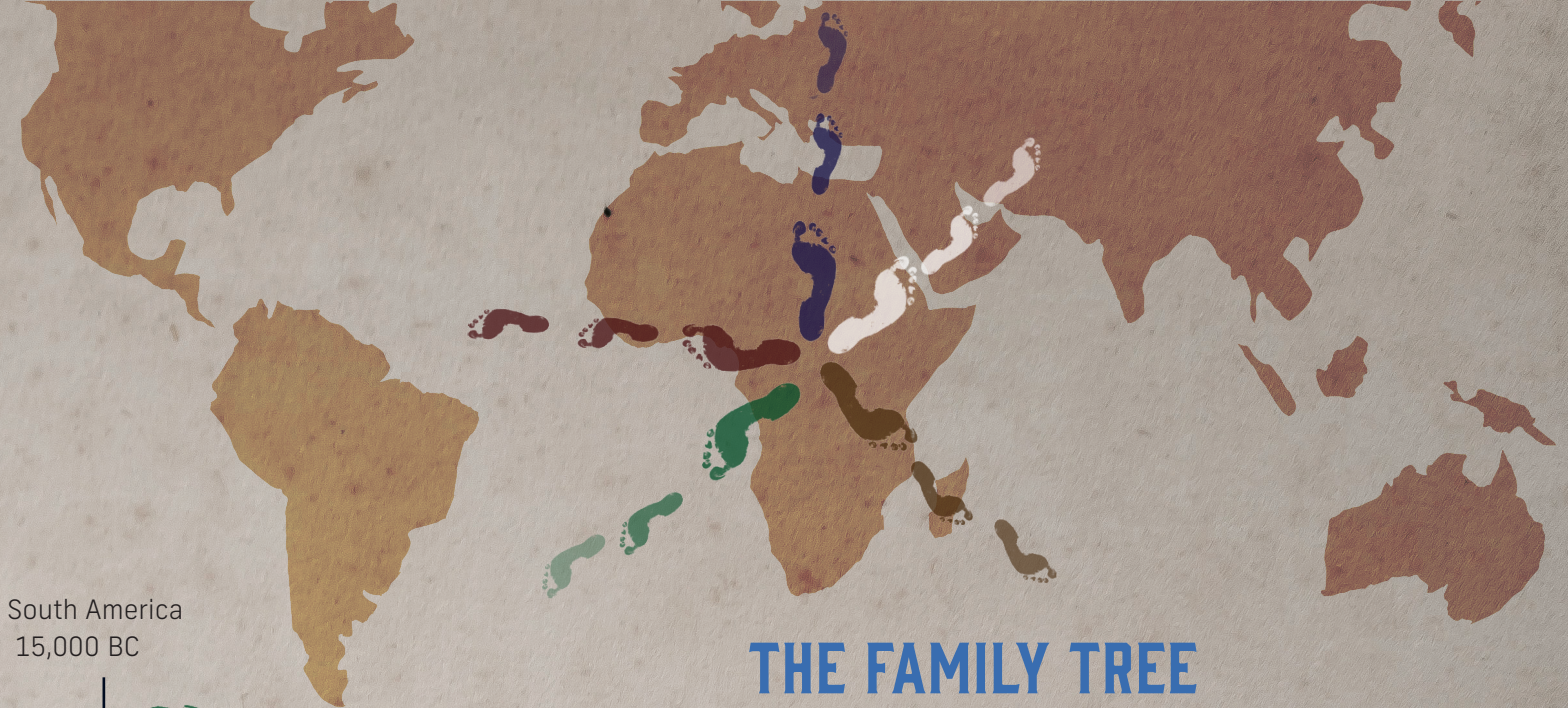


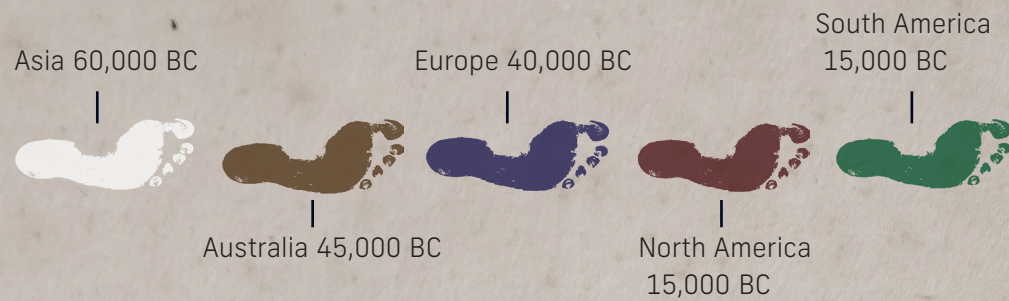
HUMAN MIGRATION

Human migration is the movement by people from one place to another, particularly different countries, with the intention of settling temporarily or permanently in the new location. It typically involves movements over long distances and from one country or region to another.



THE FIRST MOVE

When humans first ventured out of Africa 60,000 years ago, they left genetic footprints still visible today. We can't be sure of the reasons humans migrated off of the African continent, but it was likely correlated with a depletion of resources (like food) in their regions.



By comparing DNA between fossils and today's populations, scientists can walk the genetic code backward through generations finding when early humans migrated.

THE FAMILY TREE

DNA data from fossils taught us that, from the expansion out of Africa, Homo Sapiens, Neanderthals, and Denisovans lived and interbred with each other.

THE DNA SCIENCE

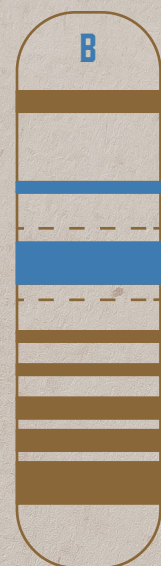
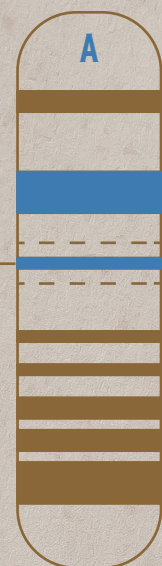
1. When living things die, their DNA doesn't disappear immediately. This means that the DNA of long dead people can still be found in fossils and skeletons.
2. In genetic analysis it involves comparing DNA from different people. The human genome is 3 billion letters long, but as people differ at one letter in every thousand. We can compare people where we know there are these differences, known as genetic markers.
3. By mapping the appearance of genetic markers from fossils and in modern people, we create a picture of when and where ancient humans moved around the world.

The DNA from a Homo Sapien fossil (B) and modern human bone (A) are compared based on the difference in the genetic marker. There are many types of markers such as SNP's.



SNP's are the most common type of genetic variation among people. Each SNP represents a difference in a single DNA.

DNA A and B are from the same species. The blue genes is what makes them different, and what essentially the SNP is.



Genetic Marker is a gene or DNA sequence that can be used to identify individuals or species.

DENISOVAN

Denisovans existed in 200,000 BC

The interbreeding into Homosapiens is estimated to have happened 44,000–54,000 years ago with Denisovans.

NEANDERTHAL

Neanderthals existed in 300,000 BC

The interbreeding into Homosapiens is estimated to have happened 47,000–65,000 years ago with Neanderthals.

HOMO SAPIEN

Homo Sapiens existed in 200,000 BC

From the amount of interbreeding Homo Sapiens have done today modern humans have at least 2% of Neanderthal DNA.

