

DNA: BACK TO BASICS...



Each cell in our body has a complete set of our own unique genetic code – this is called the **genome**. It is a blueprint controlling what we look like and how we behave.

Within most human cells, this genetic material is separated out into 46 **chromosomes** – we inherit half from our mother and half from our father.



These chromosomes are made of tightly coiled sections of **DNA** – Deoxyribo Nucleic Acid. The spiral ladder structure is known as a double helix.

Each step in this ladder is a **base pair** – Adenine matches Thymine and Guanine matches Cytosine.

Sections of this code are called our **genes** – they code for specific proteins, which help to build our different cells or help us to function normally.

...INTRODUCING GENETIC FINGERPRINTING!

There are 3.5 billion base pairs in the human body – not all gene segments will code for proteins though. A lot of DNA is known as “junk” DNA – non-coding regions, sometimes with lots of repeat base pair sections.

Scientists look for particular regions of the genome (called loci) that contain repeated sections of DNA – like AAG AAG AAG AAG. These repeated segments are called **microsatellites**.

We all have different numbers of these repeated sections due to insertion or deletion **mutations** – so we can use these differences to tell individual animals apart! It's our very own **genetic fingerprint**.

