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GCSE Biology – Chromosomes & DNA - Transcript

There are around 37 trillion cells in the human body and inside the nucleus of almost every cell is the chemical DNA.

Arranged into structures called chromosomes, DNA is a long polymer made up of two strands forming a double helix that carries your genetic information. A gene is a short section of DNA, and each gene codes for a particular sequence of amino acids that make a specific protein. Different proteins mean different characteristics, like eye colour or hair type.

Most of the time chromosomes are made of long, thin threads of DNA, inside the nucleus. However, when a cell is about to divide, to produce new copies of itself for growth and repair, they appear as this familiar cross shape.

Different species have different numbers of chromosomes. Dogs have 78 and lettuces have 18, Human body cells have a total of 46 chromosomes arranged into 23 pairs.

For each pair, one chromosome comes from the biological mother and the biological father. Twenty-two of these pairs control characteristics, while one also decides the sex. Typically, females have two X chromosomes and males have one X and one Y.

Some genetic conditions occur when there is a variation in the number of chromosomes. For example, in humans, people with Down's Syndrome have 47 chromosomes in their body cells rather than 46. Now you know why families often share characteristics. Their Chromosomes and DNA.