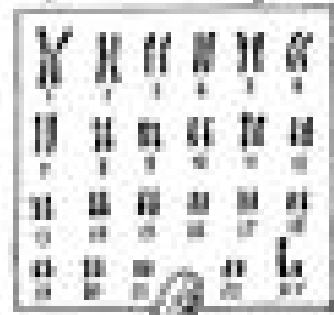


All of you—your bones, muscles, nerves, skin, and blood—is made up of cells. There are more than 10 trillion cells in your body.

In the nucleus of almost every single cell are the complete instructions for making you. These instructions are found in 23 pairs of chromosomes. The set of instructions is called your genome.



This DNA takes the form of a double helix that looks like a long, twisting ladder.



Each set of chromosomes—half of which comes from your mother and half from your father—contains one tightly packed strand of DNA.

The ladder is made up of a series of letters—A, T, C, G—that represent the chemicals adenine, thymine, cytosine, and guanine. One pair of letters is called a base pair; a base pair is formed by the bonding of two nucleotides. A always pairs with T, and C always pairs with G. A series of nucleotides, then, forms a gene that codes for a protein. Your genes produce thousands of different proteins.

Each strand of DNA may contain several thousand genes. Some genes are thousands of bases long; others are millions of bases long.



A nucleotide contains a base molecule (A, T, C, or G), a sugar molecule, and a phosphate molecule.

The goal of the human genome project is to determine the complete sequence of the human genome—to put 3 billion As, Ts, Cs, and Gs in correct order—and to locate its estimated 25,000 to 30,000 genes.