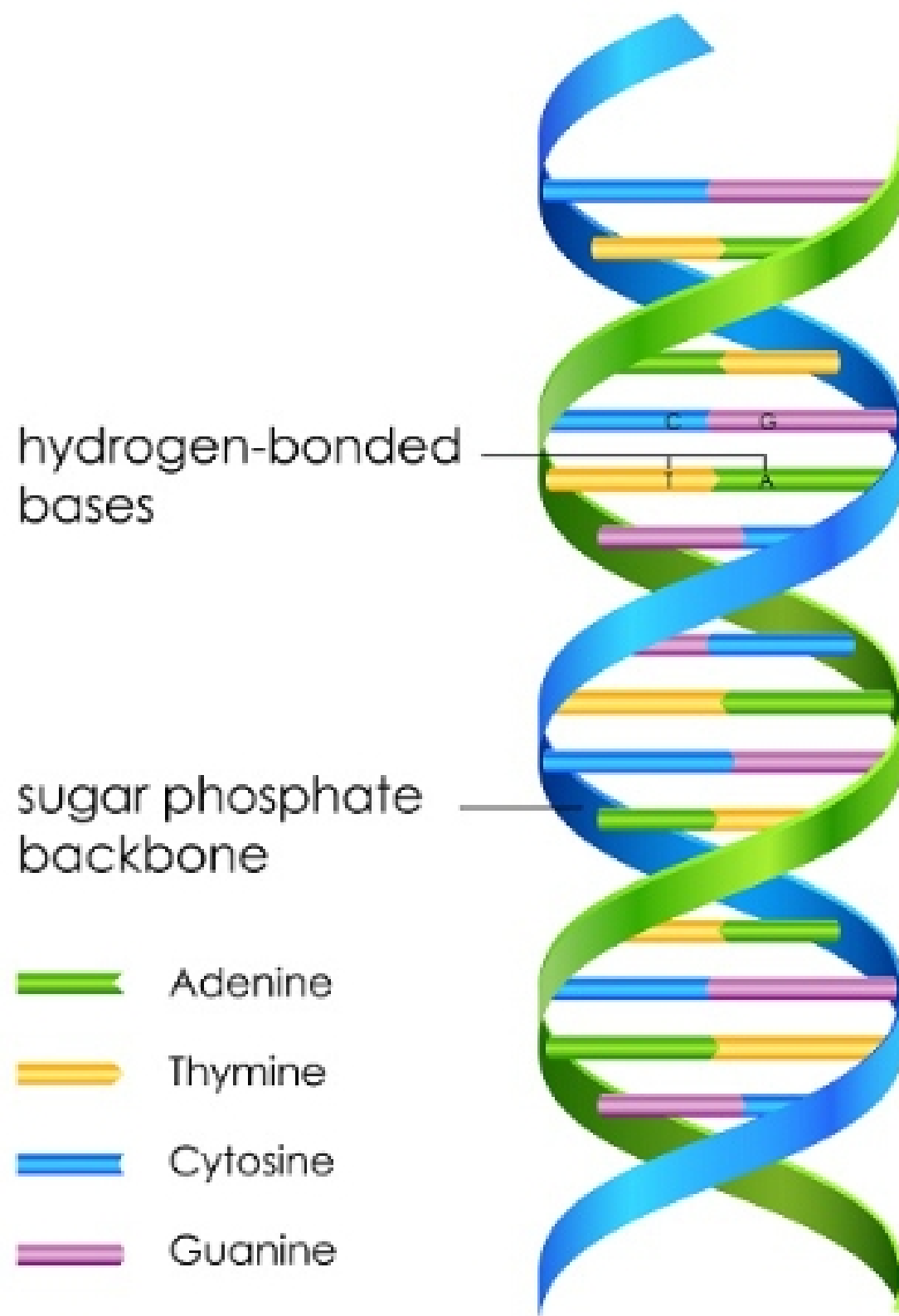


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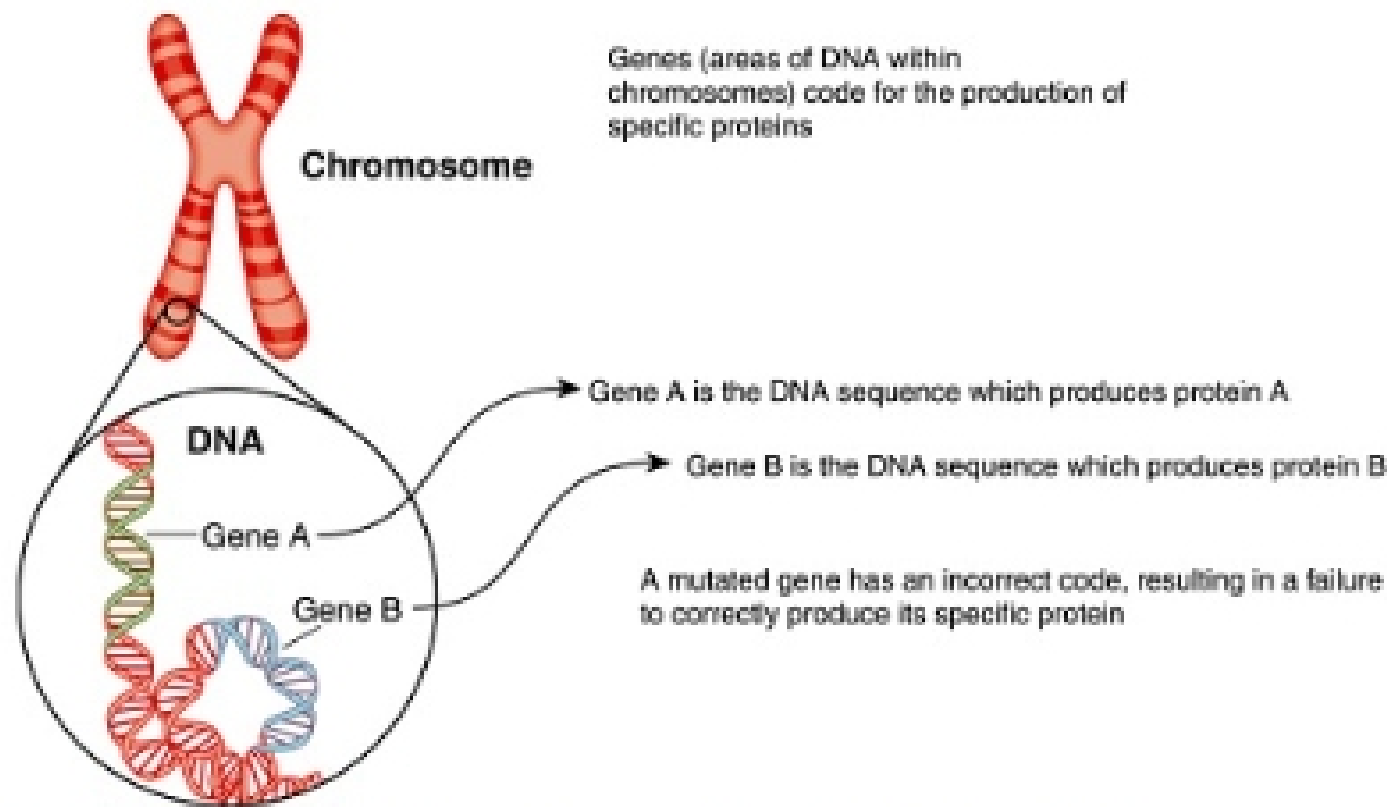
What is DNA?

DNA is a large molecule that encodes hereditary information. It is the structure that encodes all the information for "building" a living organism. For this reason it is often called the "blueprint" of life. Every

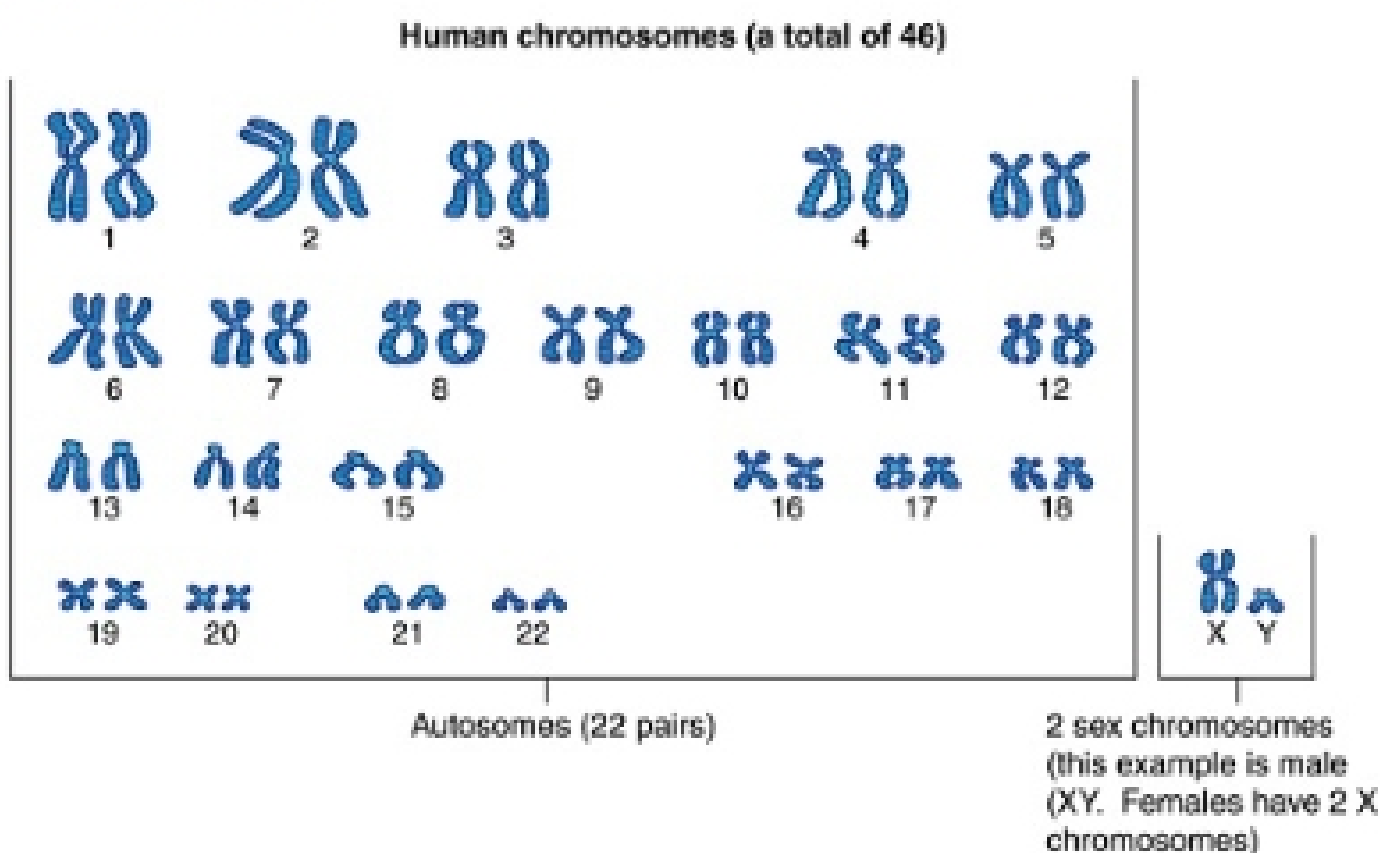
living cell, from bacterial cells to human cells have DNA. The structure of DNA is a double helix with 2 antiparallel strands composed of 4 different types of nucleotides. A (adenine), T (thymine), C (cytosine) and G (guanine). A always pairs with T (pairing with 2 hydrogen bonds) and C always pairs with G (pairing with 3 hydrogen bonds).



DNA is arranged into structures called chromosomes and the chromosomes within a single cell are collectively called the genome.



For single celled organisms like bacteria, this genome usually consists of only one chromosome. In more complex organisms, like humans, the genome consists of 46 chromosomes (2 copies of the 22 autosomal chromosomes plus either 2 X chromosomes or 1 X and 1 Y chromosome).



Chromosome can basically be thought of as long stretches of DNA. The genome is typically divided up into several of these structures called chromosomes. It is important to note that the complete genome is present in every cell. Not every cell is the same however (heart cells, lung cells, skin cells, etc.) since a different set of genes is expressed in different cell types. In humans chromosomes are