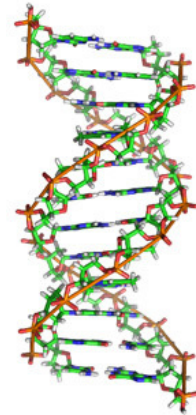


Vocabulary: Building DNA

Vocabulary

- Double helix – the shape of DNA, resembling a twisted ladder.
- DNA – material in the cell that contains genetic information.
 - DNA stands for *deoxyribonucleic acid*.
 - The DNA molecule has the shape of a double helix, or twisted ladder. The sides are composed of a sugar (deoxyribose) and phosphate groups. The “rungs” of the ladder are composed of pairs of nitrogenous bases.
 - The two sides of a replicating DNA molecule are called the *leading strand* and the *lagging strand*.
- Enzyme – a protein that facilitates a specific chemical reaction in the body.
 - *DNA helicase* and *DNA polymerase* are enzymes that assist in DNA replication.
- Lagging strand – DNA strand that forms as a series of short segments, called *Okazaki fragments*, which are then connected together.
- Leading strand – DNA strand that forms as a continuous strand during DNA replication.
- Mutation – an error that occurs during DNA replication.
 - Mutations can be harmful, helpful, or neutral. Most mutations are neutral.
 - Examples of mutations include point mutations, insertions, and deletions.
- Nitrogenous base – a component of DNA that forms the “rungs” in the DNA structure.
 - There are four nitrogenous bases in DNA: adenine, thymine, cytosine, and guanine.
 - Each “rung” of DNA is composed of a bonded pair of nitrogenous bases. Adenine bonds to thymine while cytosine bonds to guanine.
- Nucleoside – a subunit of a nucleic acid molecule that consists of a sugar and a nitrogenous base.
- Nucleotide – a subunit of a nucleic acid molecule that consists of a sugar, a phosphate, and a nitrogenous base.
- Replication – the process of duplication.
 - During *DNA replication*, a double-stranded DNA molecule divides into two single strands. New nucleotides bond to each single strand. The end result is two identical strands of DNA.



DNA