

DNA Replication

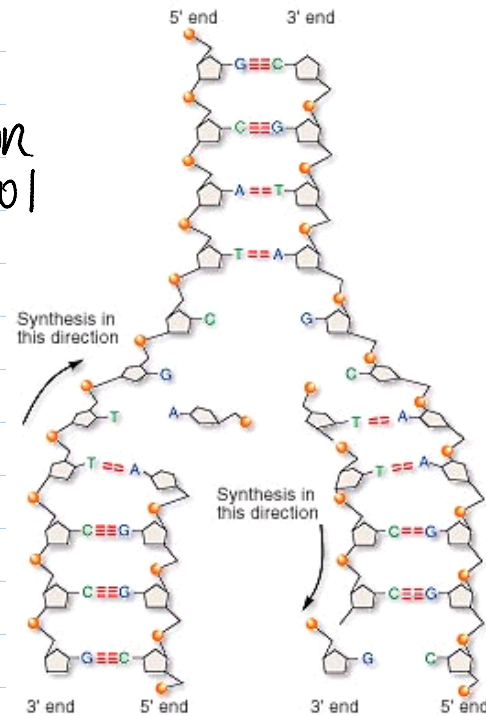
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DNA controls cellular activities, including reproduction
↳ **genes** are the units of inheritance that control specific characteristics of an organism.

- located on chromosomes
- segments of DNA molecule
- always occur in pairs

DNA make exact copies of itself to pass onto other cells. → **DNA replication**

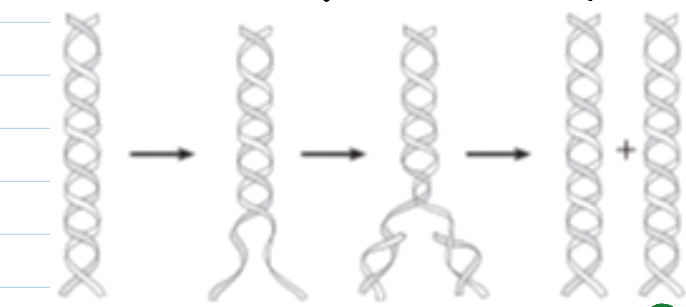
Before a cell divides, it must make an exact copy of its DNA



① The hydrogen bonds between the base pairs break (unzip)
↳ **helicase enzyme** breaks hydrogen bonds

② Free floating nucleotides line up with their exposed complementary bases → **complementary base pairing**.
↳ new hydrogen bonds form between them.

③ **DNA polymerase enzyme** catalyzes the synthesis of DNA
↳ sugar + **(P)** join together → "sugar-phosphate" backbone



Parent DNA

① unzipping

② complementary base-pairing

③ sugar-phosphate backbone formed connecting nucleotides in the 2 new strands.