Chapter 2 - Nucleic Acids

Structure of DNA

Nucleotides are the monomers that make up the polymer DNA. A nucleotide is made up of **a deoxyribose sugar**, a **base** and a **phosphate group**.



The nucleotides join by a **condensation reaction** and a **phosphodiester bond** forms between the nucleotides. The new structure is a **dinucleotide**.

DNA is a **double helix** and contains chromosomes, which contain get (). It contains the bases **A**, **T**, **C** and **G**. A always bonds with T and C also bor ds with G. RNA is **single stranded** and T is replaced with **H** to get ().

DNA	TNAO T
Dout Page	Single helix.
Deoxyribose.	Ribose.
Stable.	Not stable.
Uses thymine.	Uses uracil.

DNA replicates by **semi-conservative replication**, which creates two strands of DNA, each containing one old strand of DNA and one newly synthesised DNA. **DNA polymerase** catalyses condensation reactions and joins nucleotides together to form phosphodiester bonds. **DNA helicase** unzips and unwinds the original strand of DNA.

<u>ATP</u>

ATP is a biological molecule which is produced in respiration. When this breaks down into ADP, **lots of energy is released.**