

DNA NOTES:

Deoxyribonucleic Acid

FUNCTIONS:

- 1. Stores information that is essential for almost all the cells' activities
- 2. Houses the genetic code for humans (copies itself to create new cells)

What is DNA?

- It is a nucleic acid made up of repeating subunits (monomers) called nucleotides

Each Nucleotide has 3 parts:

- 1. Five-carbon sugar molecule (DEOXYRIBOSE)
- 2. Phosphate Group
- 3. Nitrogen Base

- Both the sugar molecules and phosphate groups are the same in each nucleotide, where as the nitrogen base may vary.

4 NITROGEN BASES:

- 1. Adenine (A)
- 2. Guanine (G)
- 3. Thymine (T)
- 4. Cytosine (C)

PURINES vs. PYRIMIDINES:

- Purine
- double ring of carbon and nitrogen atoms
- Examples:
 - Adenine
 - Guanine
- Pyrimidine
- single ring of carbon and nitrogen atoms
- Examples:
 - Thymine
 - Cytosine

Watson and Crick's Discovery: Double Helix

- Nucleotides are bound together to form a long strand
- Two strands are bound together by hydrogen bonds between the nitrogen bases, particularly between the purines and pyrimidines
- Adenine bonds to Thymine (A-T)
- Cytosine bonds to Guanine (C-G)

Complimentary Strands:

- DNA strands are said to be complimentary because equal quantities of A + T, and C + G
- The two strands together form a spiral ladder:
 - the sides being formed by alternating phosphate and sugar units
 - the rungs are hydrogen bonded nitrogenous bases