

History and Structure of DNA

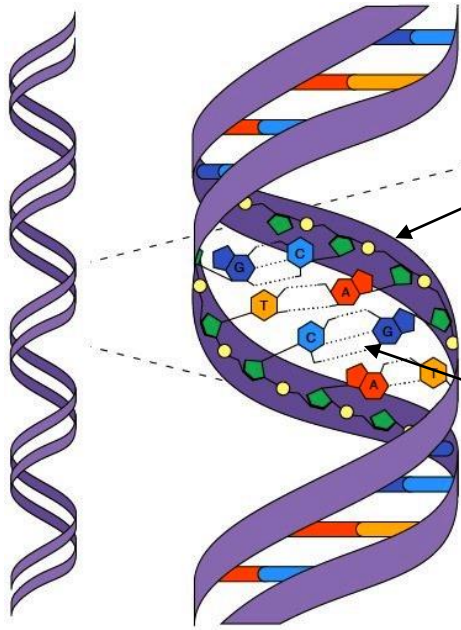
Scientist(s) Name(s)	Role
Chargaff	Realized in all organisms: $\% A = \% T$ $\% G = \% C$
Franklin	Used X-ray crystallography to determine that DNA is a double helix
Watson & Crick	1 st built accurate model of DNA molecule w/ complimentary base pairing btwn 2 strands

~~Nucleotide~~ **Nucleic Acid**

- A ~~nucleic acid~~ **nucleotide** is a monomer of DNA
- Identify the 3 parts of a nucleic acid and label the image below

The diagram shows a nucleotide structure. Label 1 points to a yellow circle representing a phosphate group, which is bonded to the 5' carbon of a red pentagon representing a deoxyribose sugar. Label 2 points to the red pentagon. Label 3 points to a green hexagon representing a nitrogenous base, which is bonded to the 1' carbon of the sugar. The 2' and 3' carbons of the sugar are also labeled.

DNA Structures



1. Double Helix

2. Strong covalent bonds
(sugar-phosphate backbone)

3. weak hydrogen bonds
btwn nitrogenous bases

1. Label the name for the overall structure of DNA
2. Label the type of bonds that makeup the backbone of DNA
3. Label the type of bonds between the base pairs

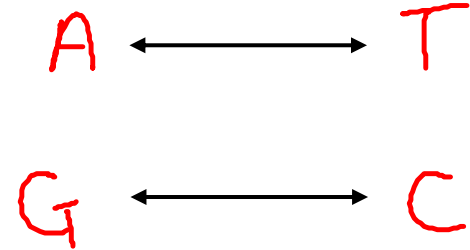
DNA Base Pairs

List the 4 nitrogen base pairs:

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

Identify the complementary base pairs:

ATCGGAT
TAGCCTA



complementary base pairing

DNA Functions

Molecule of heredity
↳ copied & passed on from generation to generation

Molecule of evolutionary change
↳ mutations cause changes in DNA → new traits or even new species to appear

