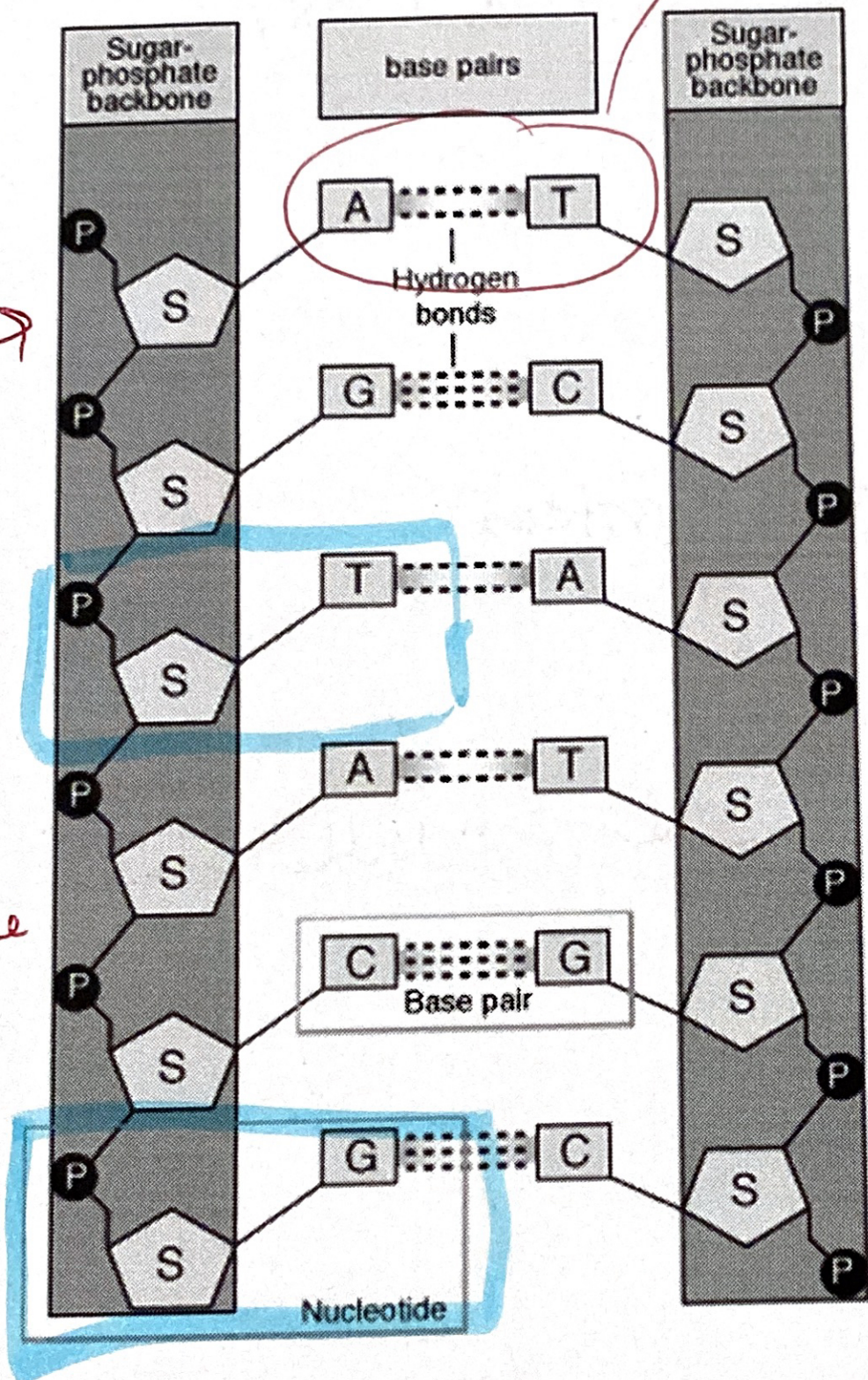


Introduction to DNA [The Code of Life]

What is DNA?

- Deoxyribonucleic acid
- Found in every living thing
- Hereditary / genetic material (passed on from parents to offspring)
- Carries instructions for making various proteins "protein cookbook"

What is the structure of DNA?



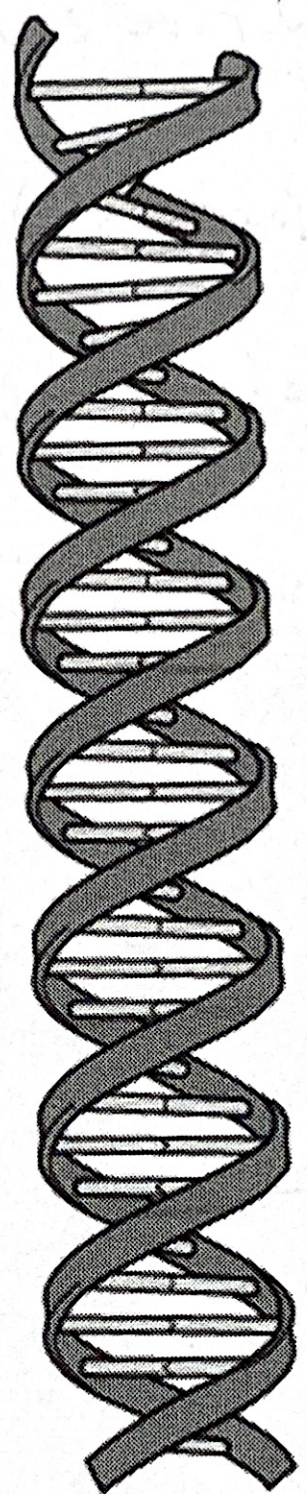
emphasize that bases are attached to the sugars and stick out in the middle

bases on one side held to bases on other side by hydrogen bonds (weak)

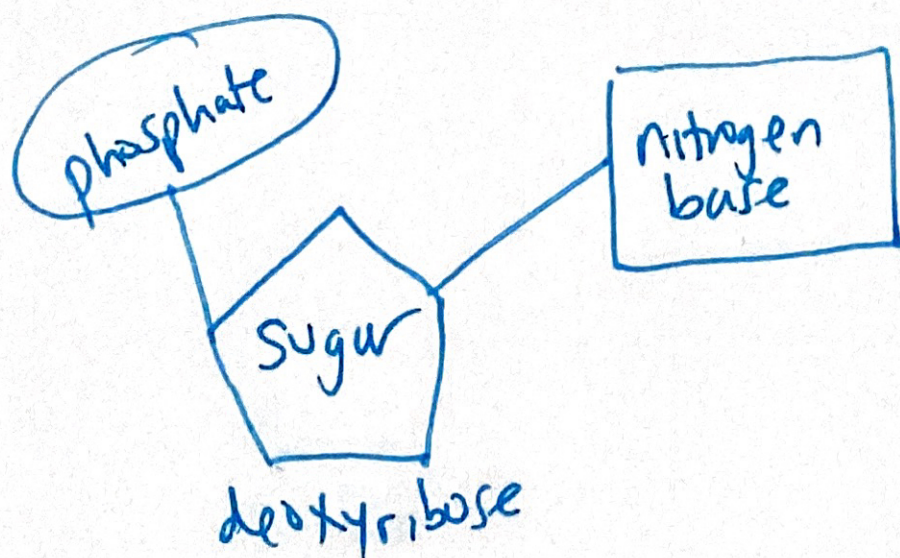
Complementary Base pairing rules

A - T
G - C ONLY!

Remember GCAT



- DNA resembles a twisted ladder ("double helix")
- DNA is a polymer made up of monomers called nucleotides
- Each nucleotide has 3 parts:



could be adenine (A)
thymine (T)
guanine (G)
cytosine (C)

Introduction to DNA [The Code of Life]

Knowledge Check

Remember:

A-T

G-C

1. A scientist determines that a particular DNA molecule has 25% adenine (A). What is the percentage of thymine in that DNA molecule? What is the percentage of cytosine? What is the percentage of guanine?

A bonds with T, so if there is 25% A, there must be **25% T**.
A and T make up 50% of the DNA in this example ($25+25=50$),
so the other 50% must be C and G. Since C always
pairs with G, they must be equal, or **25% C and 25% G**.

2. What are the 3 components of a nucleotide?

sugar (deoxyribose)

phosphate

nitrogenous base (A, T, C, or G)

3. In one sentence, describe what the function of DNA is

carries the instructions for making proteins

4. In one sentence, describe the overall structure of DNA

It resembles a twisted ladder / "double helix"