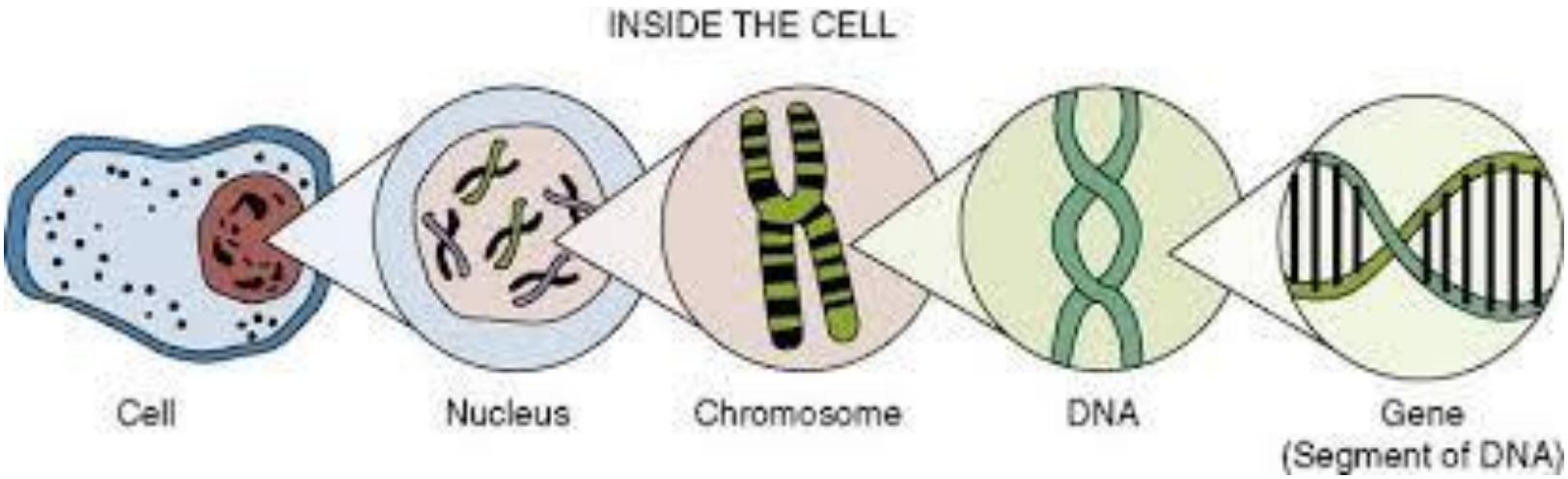
Honors DNA

What is DNA?

- DNA stands for **D**eoxyribo**n**ucleic **A**cid
- It is located in the nucleus, in the form of a chromosome.
- It is our Genetic Code – Way that cells store info (in nucleus) to be passed to the next generation.



What does DNA look like?

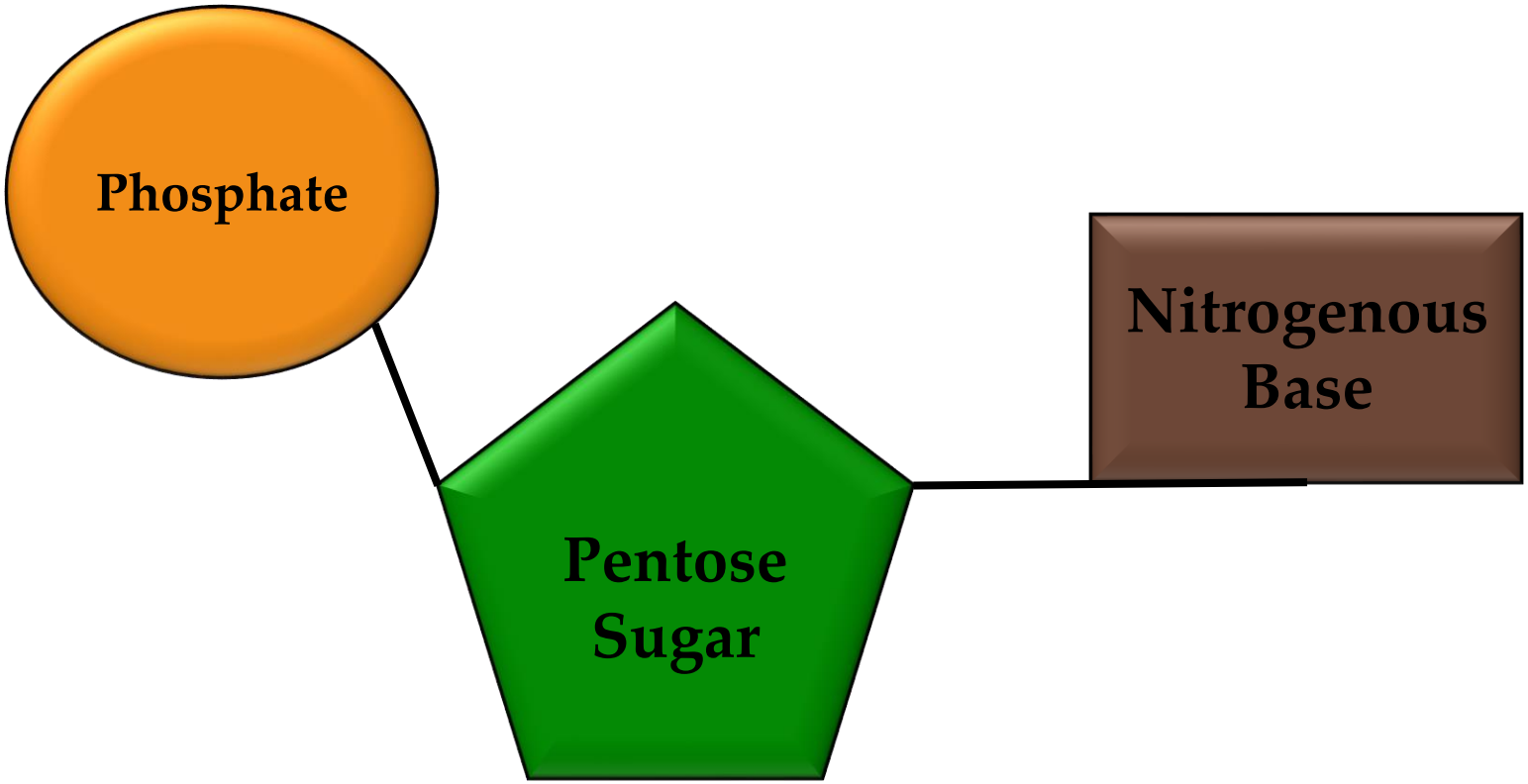
- DNA consists of two molecules that are arranged into a ladder-like structure called a Double Helix.

- A molecule of DNA is made up of millions of tiny subunits called Nucleotides.

- Each nucleotide consists of:
  1. Phosphate group
  2. Pentose sugar
  3. Nitrogenous base

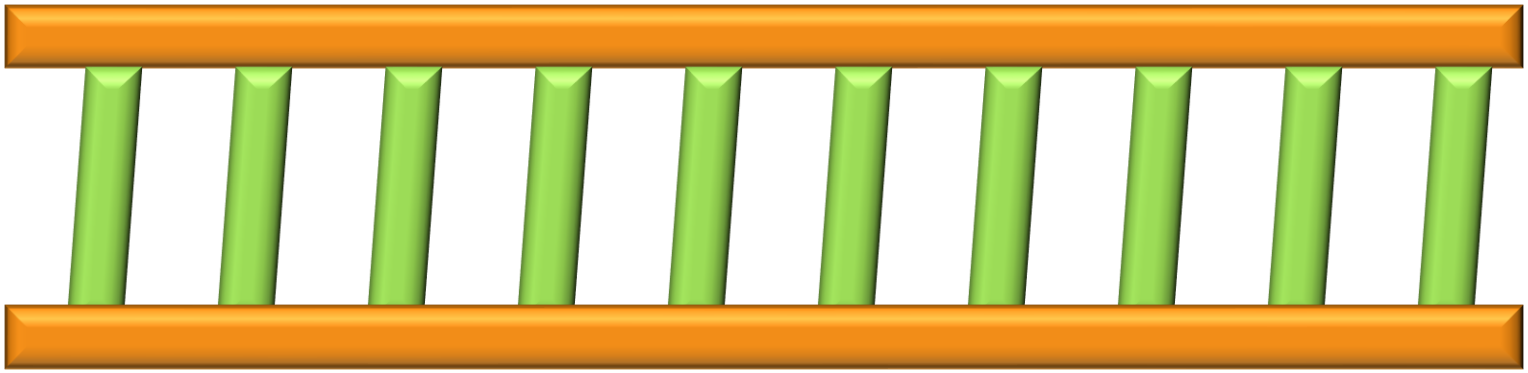
What does a nucleotide look like?

- Draw and label this

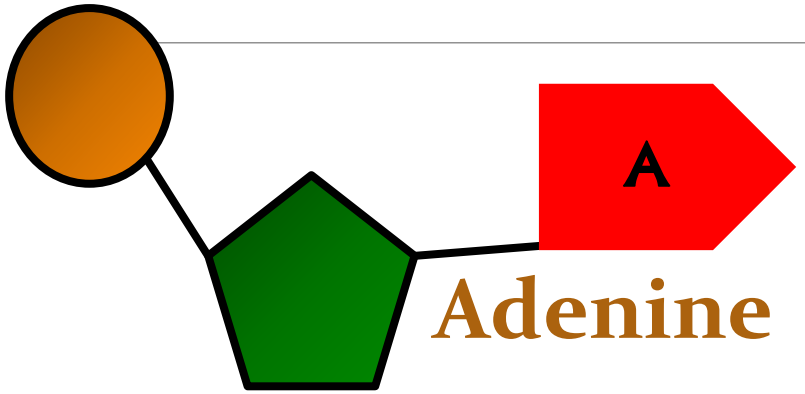


How do nucleotides form DNA?

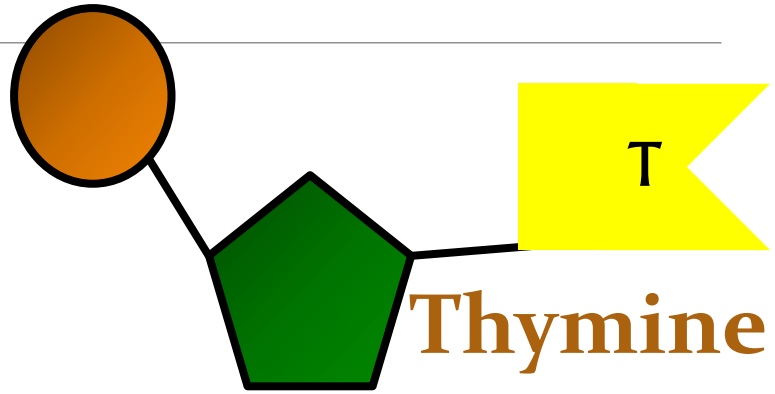
- The phosphate and sugar form the backbone of the DNA molecule, whereas the bases form the "rungs".



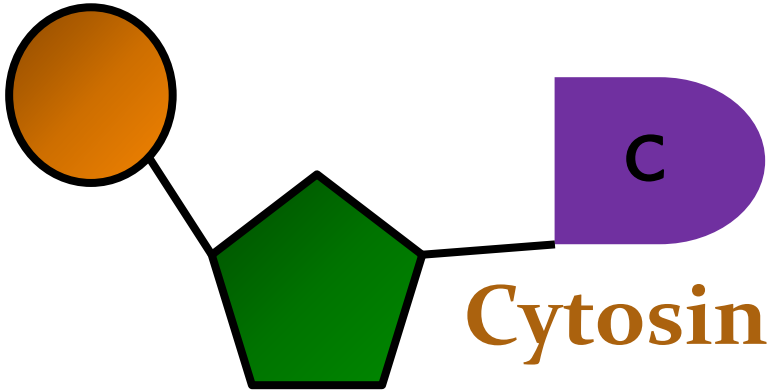
What are the four types of bases?



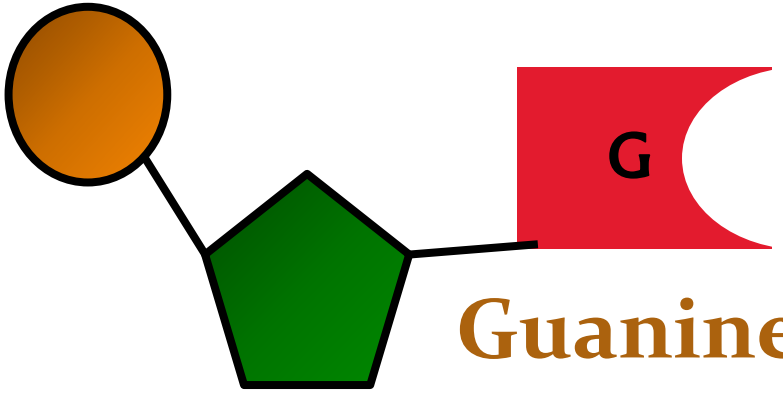
Adenine



Thymine



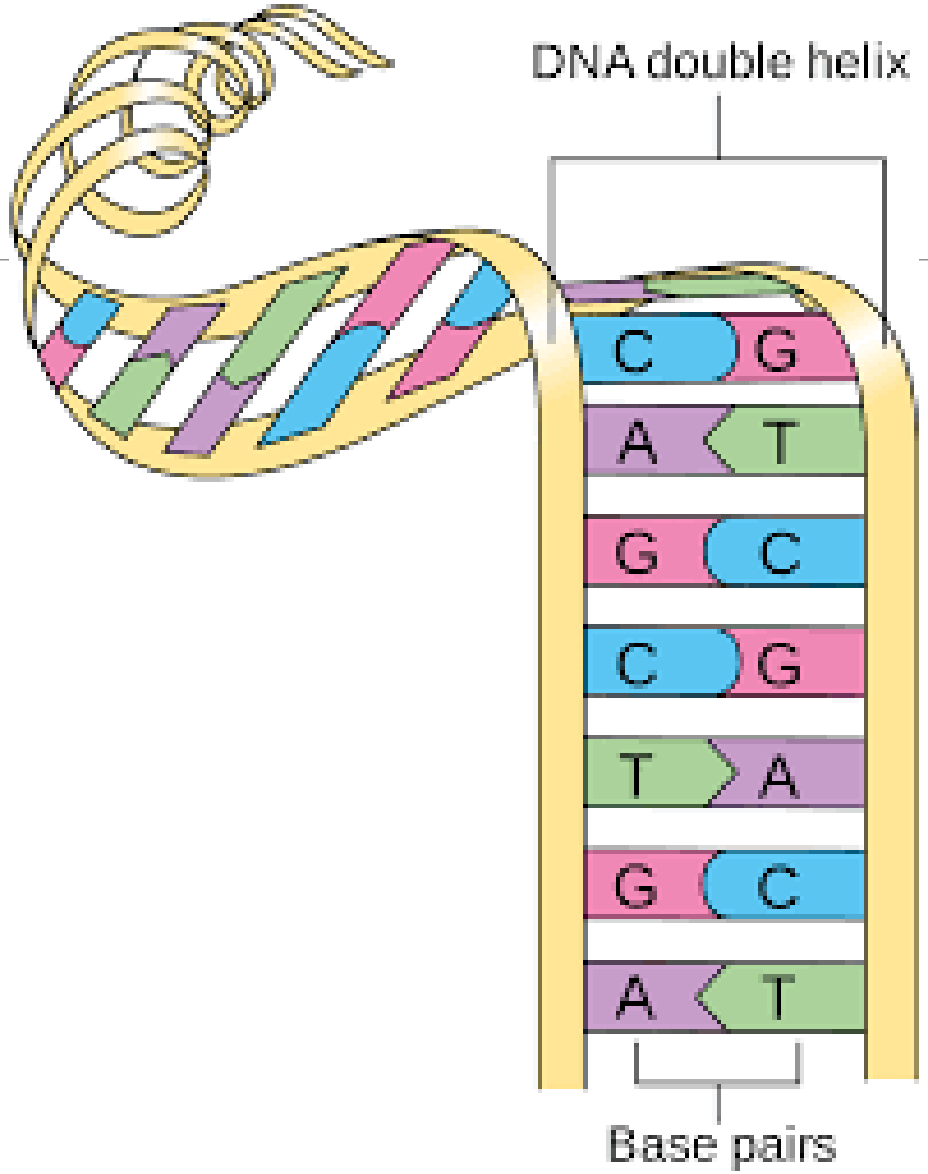
Cytosine



Guanine

How do bases bond?

- Each base will only bond with one other specific base.
  - Adenine (A) and Thymine (T) make a base pair
  - Cytosine (C) and Guanine (G) make a base pair
- Because of this base pairing, the order of the bases in one strand determines the order of the bases in the other strand.


DNA double helix
C
G
A
T
G
C
C
G
T
A
G
C
A
T
Base pairs

What are genes?

- DNA coils tightly to make chromosomes.
- In our chromosomes are all of our genes.
- A gene is a section of DNA that codes for a protein.
- Each unique gene has a unique sequence of bases.
- Our genes are what makes us unique!

What are codons?

- Each strand of DNA can be millions of base pairs long.
- To crack the genetic code found in DNA we need to look at the sequence of bases.
- The bases are arranged in triplets called codons.

A G G - C T C - A A G - T C C - T A G

- Multiple codons tell the body how to make a protein.