Warm Up (11/13-11/14)

** Take out your 10.2 Section Assessment to be stamped**

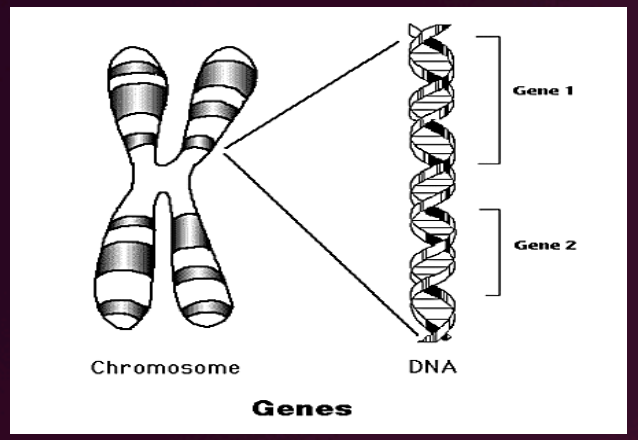
1) In your own words, describe the difference between mitosis and meiosis.

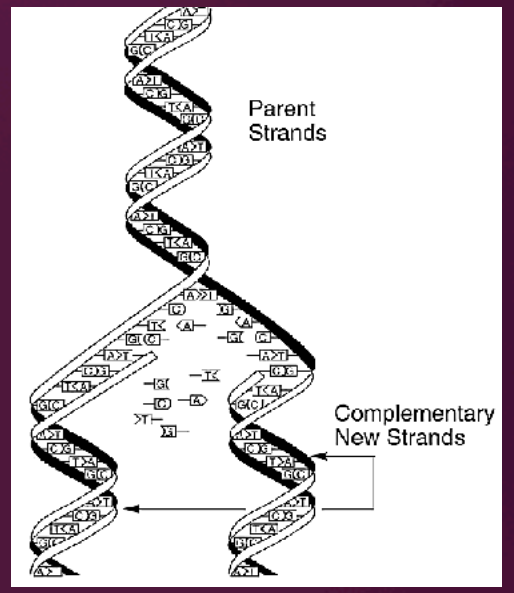
2) What is DNA and why must DNA be replicated before a cell divides?

Agenda

- Warm up
- Review Ch 10 Quiz
- Pre- Assessment: DNA Kahoot
- 11.1 Notes: DNA- The Molecule of Heredity
- DNA replication cut & paste activity

Homework: 11.1 WKST (Due Thurs/Fri)

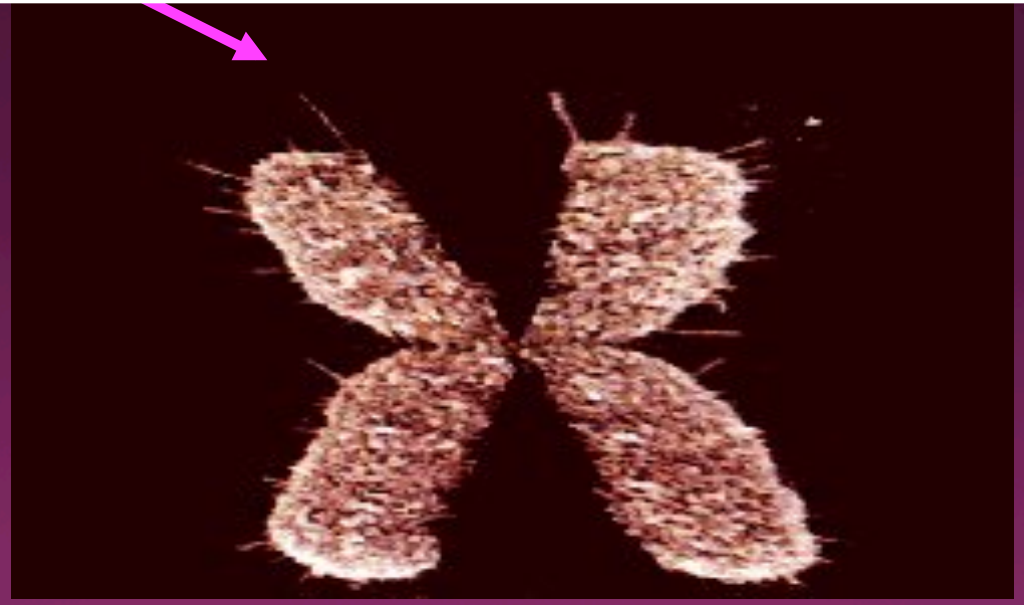




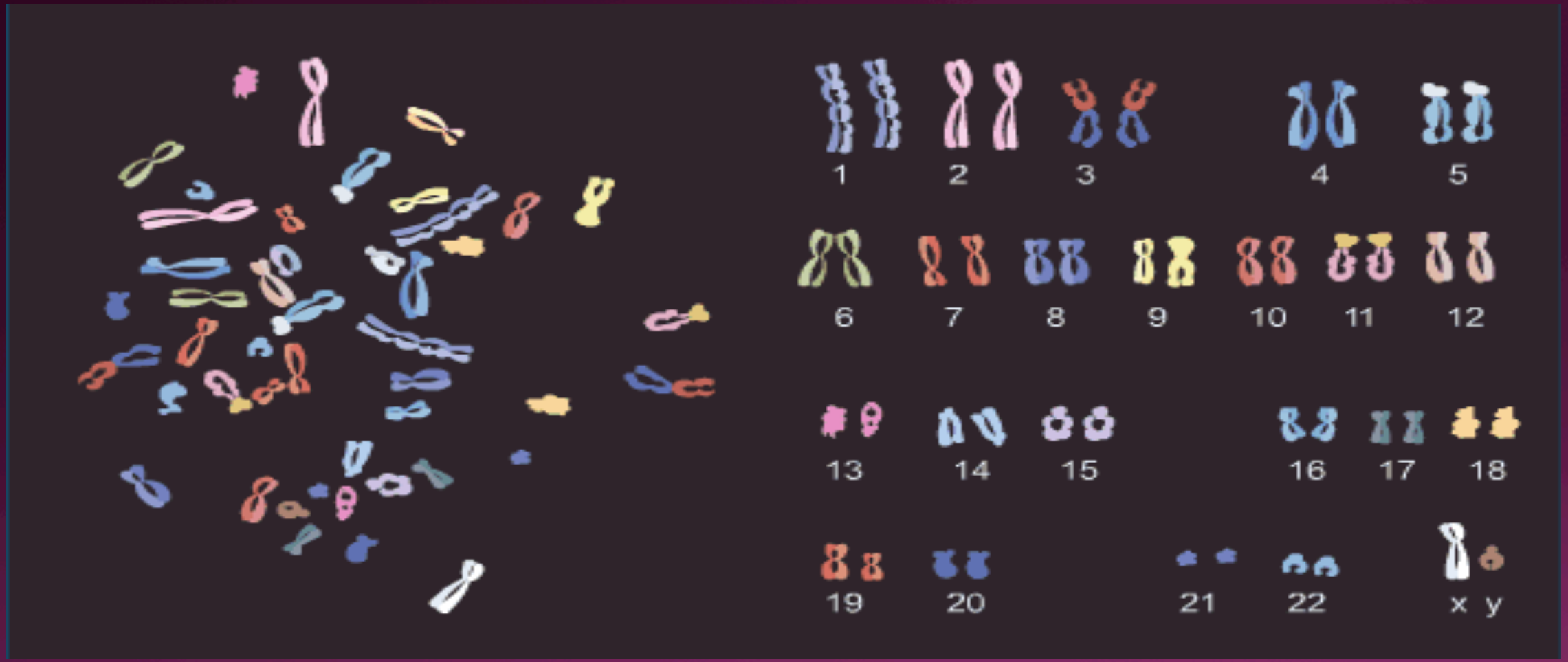
11.1: DNA- The Molecule of Heredity

DNA

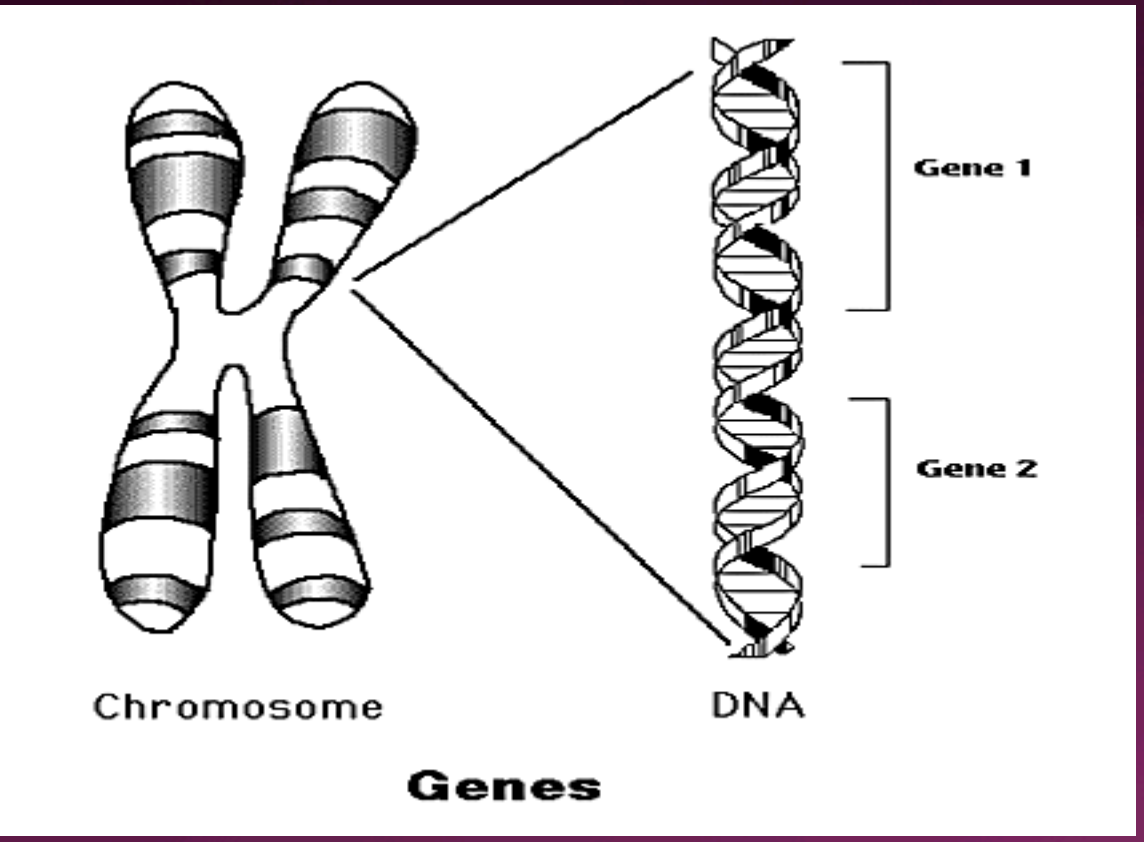
A DNA molecule coils up
to form a chromosome

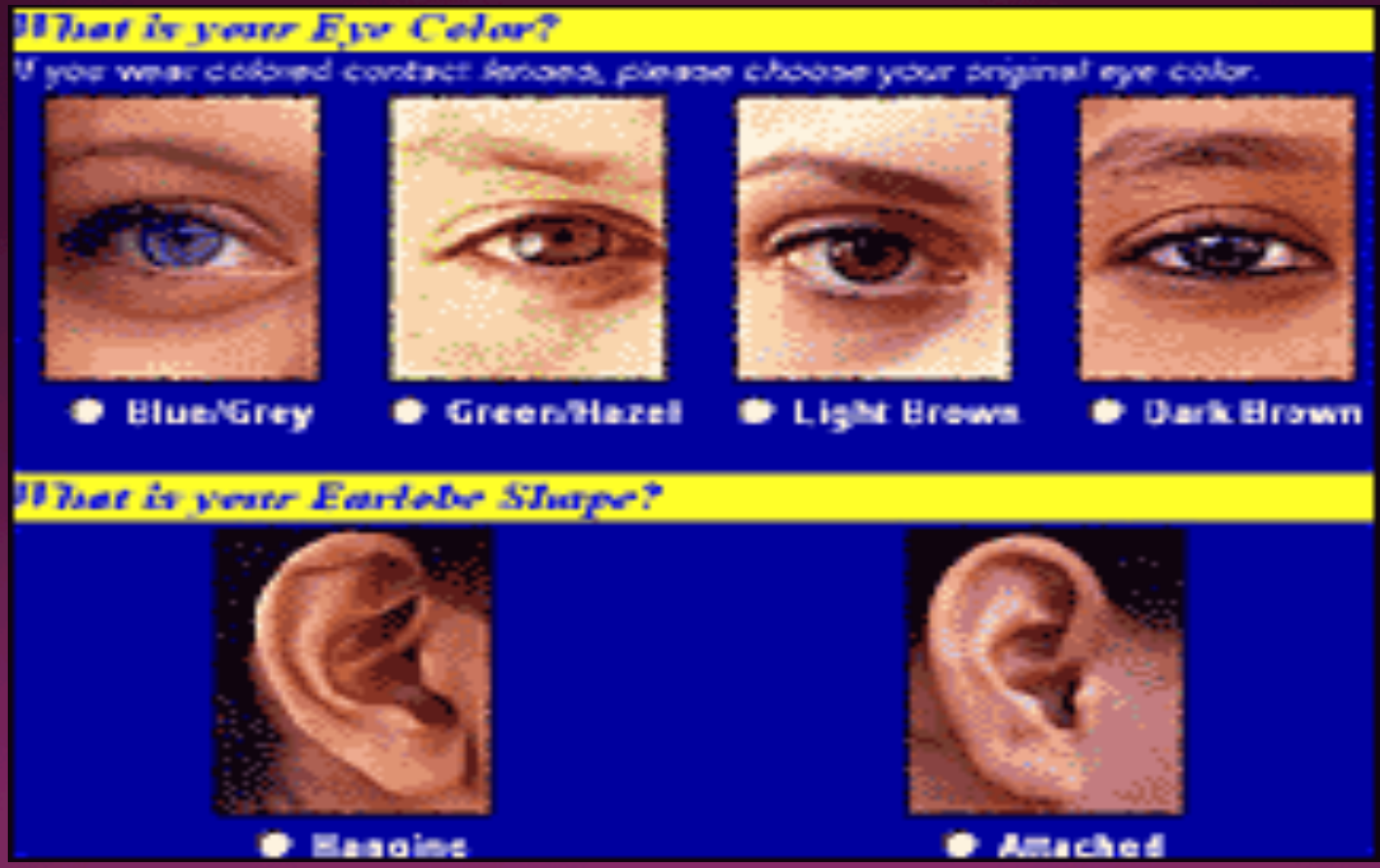


How many chromosomes are found in a human cell?



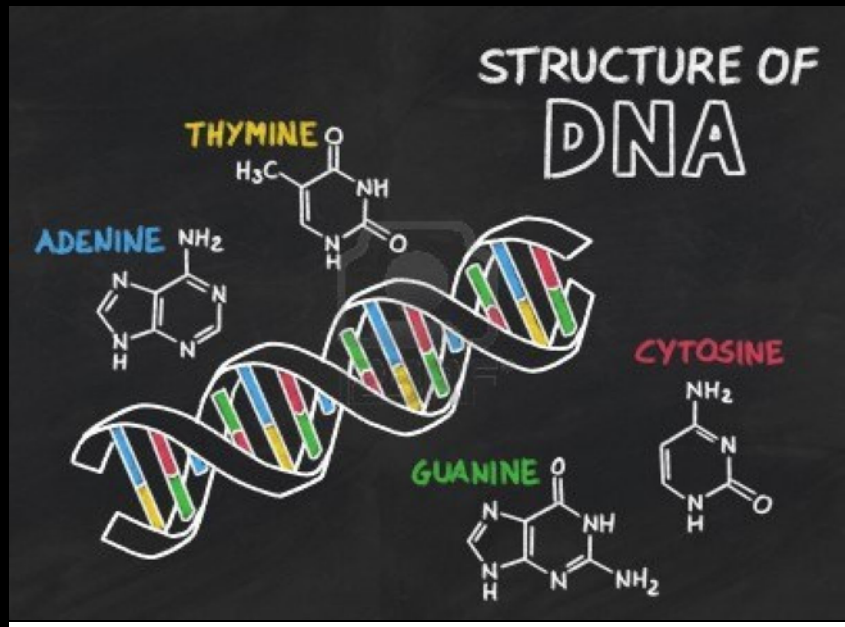
Chromosomes/DNA contain your genes, and genes are what make your traits, like eye color

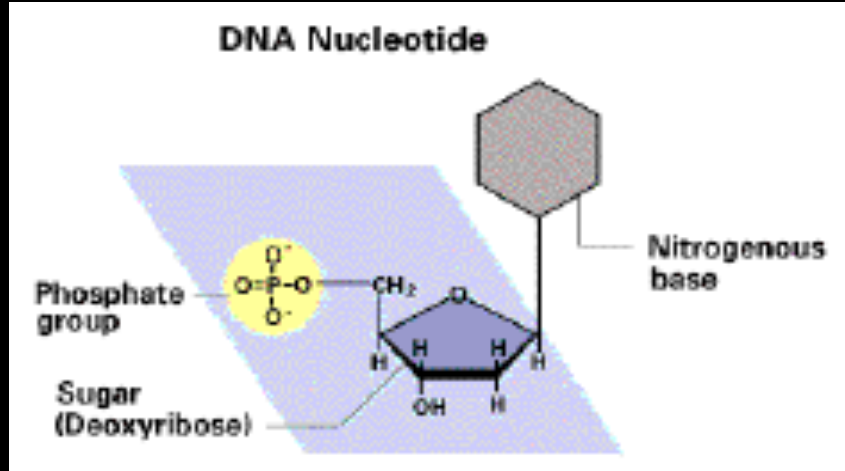




11.1 DNA: The Molecule of Heredity

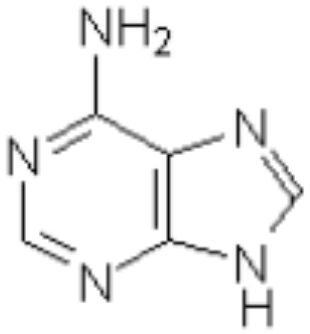
- DNA- Deoxyribonucleic acid
- Polymer= DNA; Monomer= nucleotides
- The Structure of DNA:
  - Double Helix (like a twisted ladder)
  - Made up of many nucleotides
  - Nucleotide= Phosphate group + Sugar + Nitrogenous base
    - Nitrogenous bases include Purines & Pyrimidines
    - Purine= Adenine (A), Guanine (G)- 2 ringed
    - Pyrimidine= Cytosine (C), Uracil (U) (for RNA only), Thymine (T) – 1 ringed



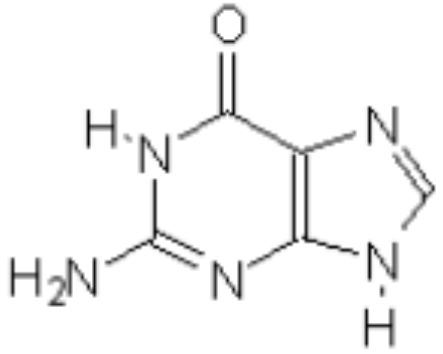


The Purines

Adenine

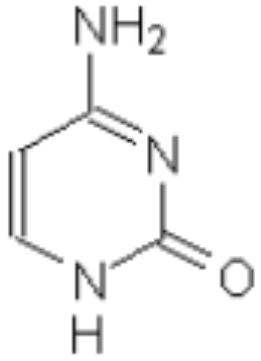


Guanine

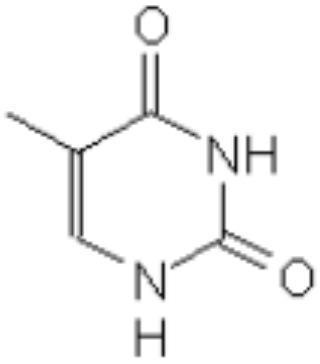


The Pyrimidines

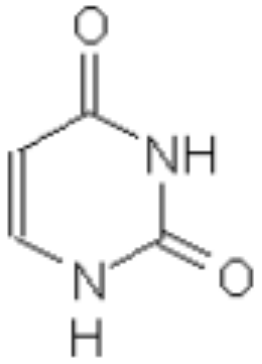
Cytosine

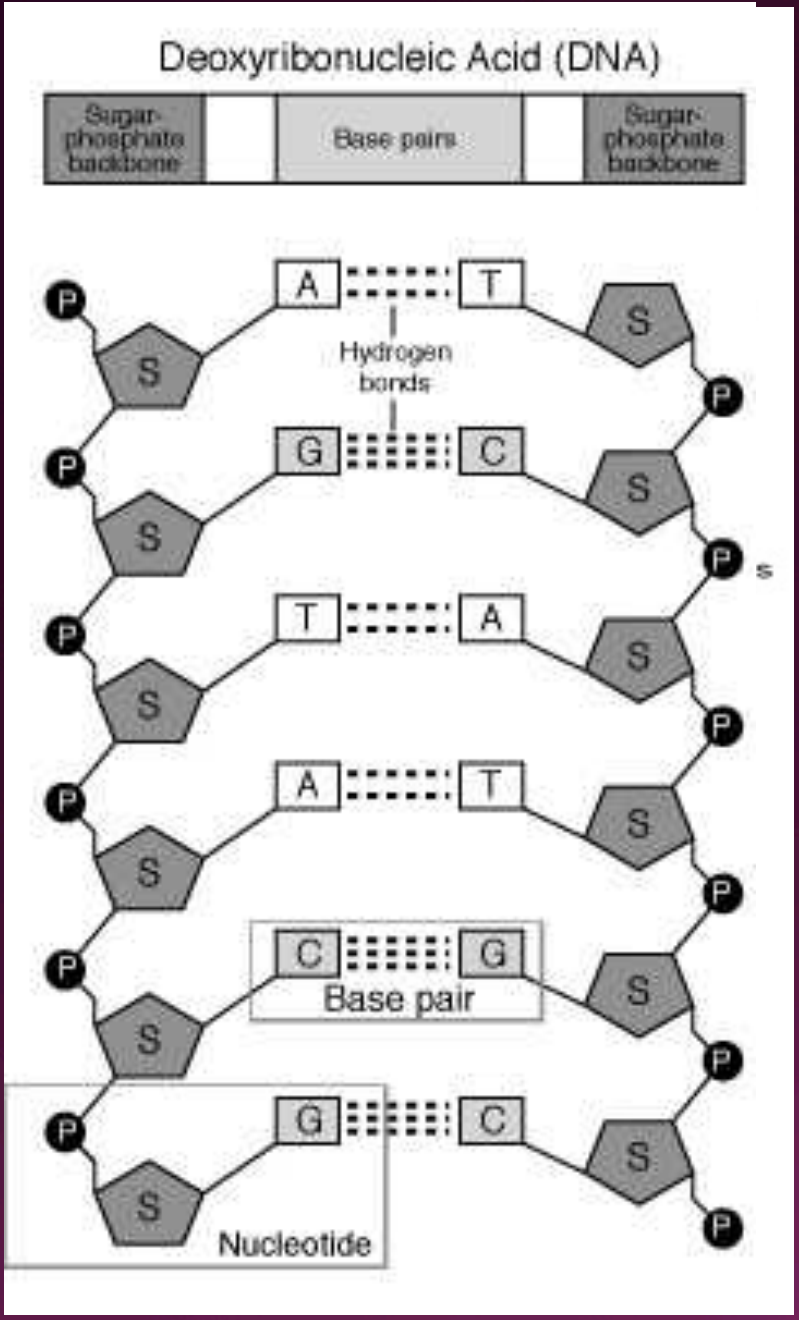


Thymine



Uracil





DNA is like a twisted ladder (Double Helix)

- Sides are phosphates and sugar
- Steps are the bases

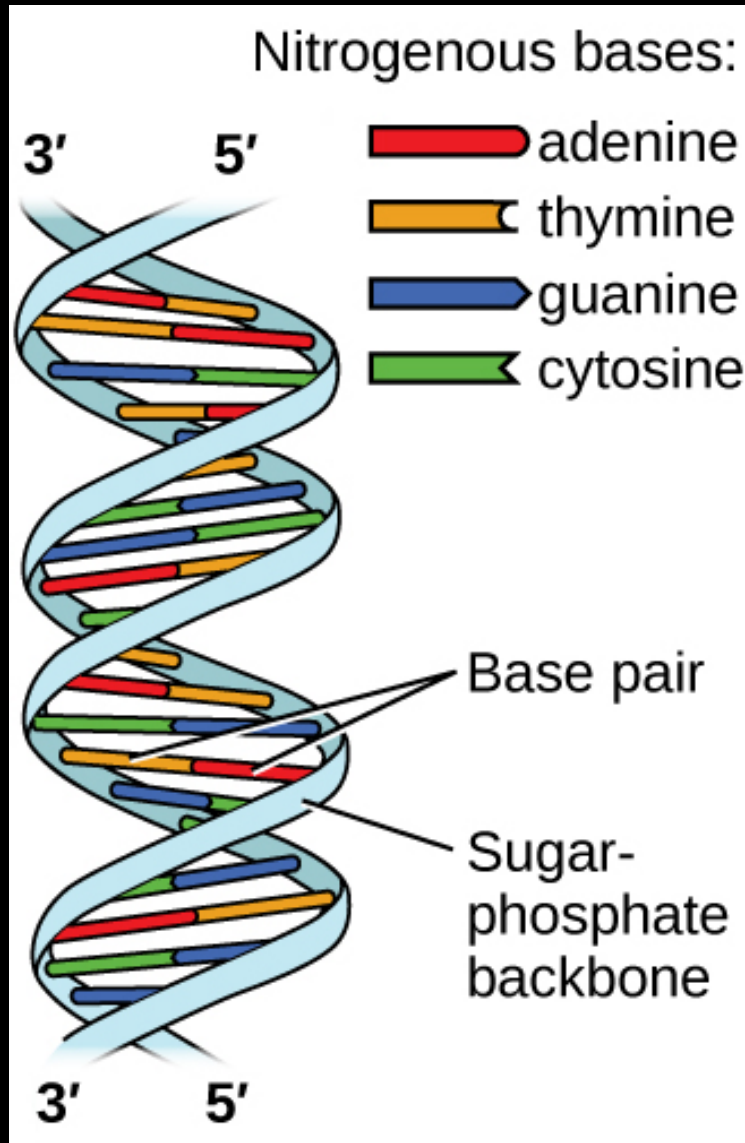
DNA Structure

- Nitrogenous bases match up and bond (by Hydrogen bonds)
  - Think of DNA like a zipper
- A bonds with T
- C bonds with G
- Sides of DNA are arranged "anti- parallel"- numbering of carbons

https://www.youtube.com/watch?v=L156Sbjs7zU

- James Watson & Francis Crick are known for the contribution they made to the discovery of DNA's structure

https://youtu.be/BIPolYrdirI

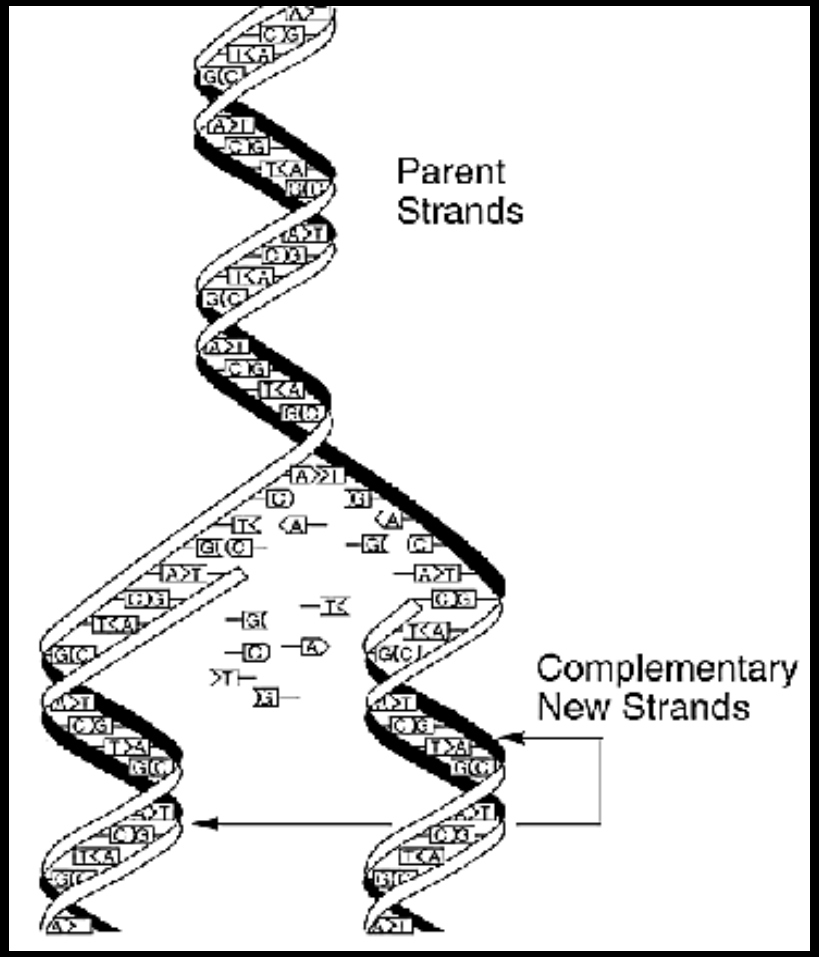


Practice

Write the complimentary DNA strand for the following:

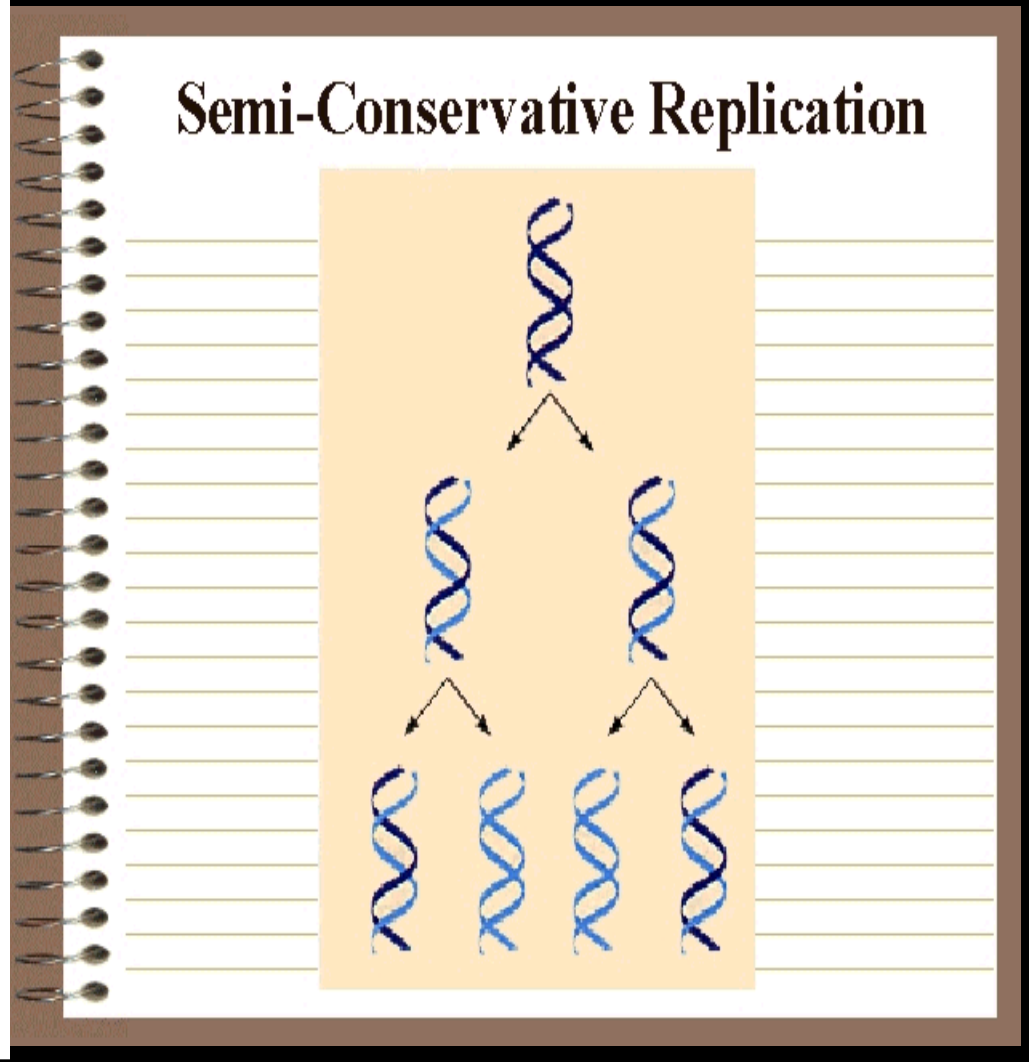
- CGTAAGCGCTAATTA

DNA Replication



- DNA must be copied so cells can divide (mitosis/ meiosis) and each copy receive a FULL set of DNA.
  - 1) Separation of strands (DNA unzips)
  - 2) Base pairing (ex: if free strand has Cytosine (C), Guanine (G) will pair with it)
  - 3) Bonding of bases (bases bond together as if glue were holding it together)

Each new DNA molecule

- Has one nucleotide strand from the original DNA molecule and one strand from free nucleotides in the cell.
- One strand is “old” and one is “new” = “Semi- conservative”

https://www.youtube.com/watch?v=4jtmOZaIvSo