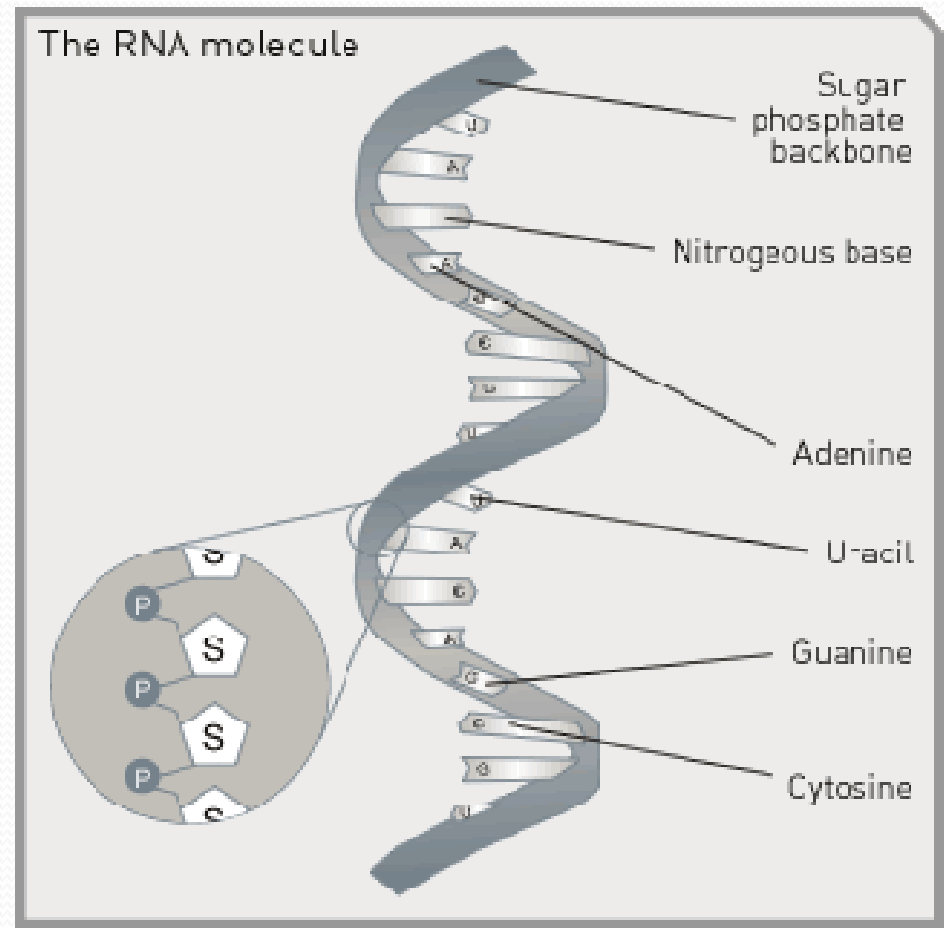


NUCLEIC ACIDS

RNA, DNA, & ATP

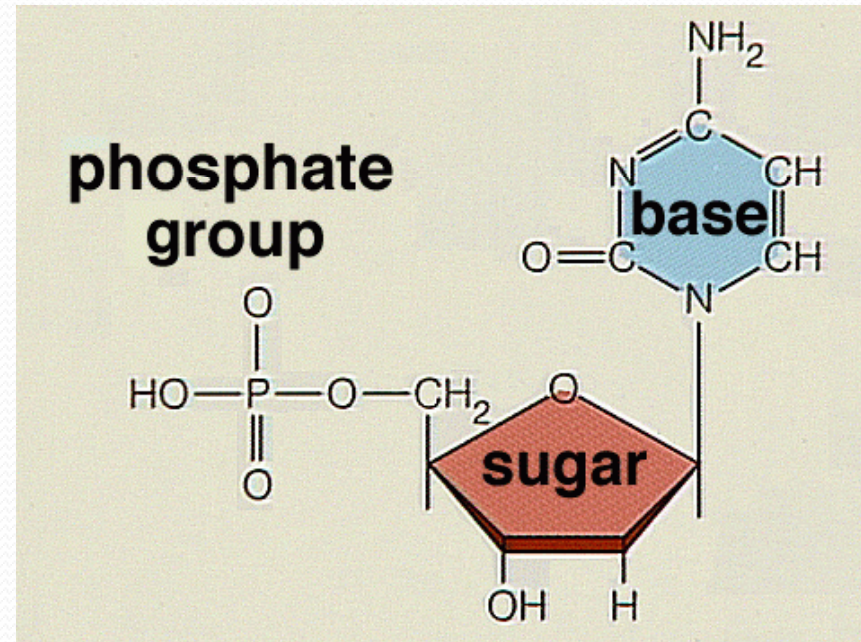
RNA

- RNA functions in protein synthesis (the manufacture of proteins)
- RNA is found in both the nucleus and the cytoplasm
- RNA is a linear single stranded molecule with a sugar-phosphate backbone



RNA

- The monomers of RNA are nucleotides (composed of ribose sugar + phosphate group + nitrogenous base)
- RNA has 4 nucleotide bases: adenine (A), uracil (U), cytosine (C), & guanine (G)



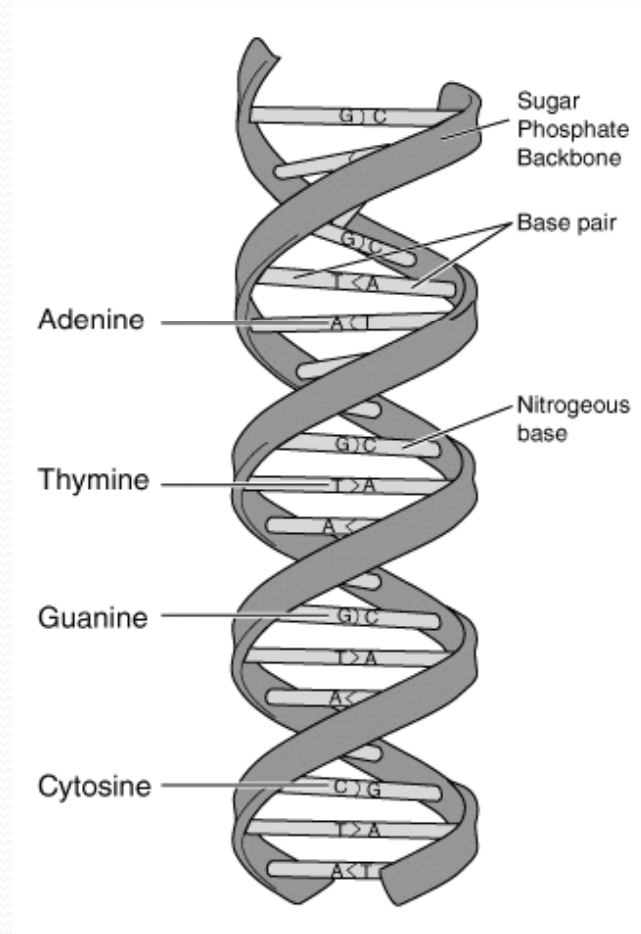
DNA

- Found in the nucleus
- Contains the genetic information of the cell
- Makes up the chromosomes & duplicates during mitosis (cell division)
- Controls cellular activities by coding for all cellular proteins



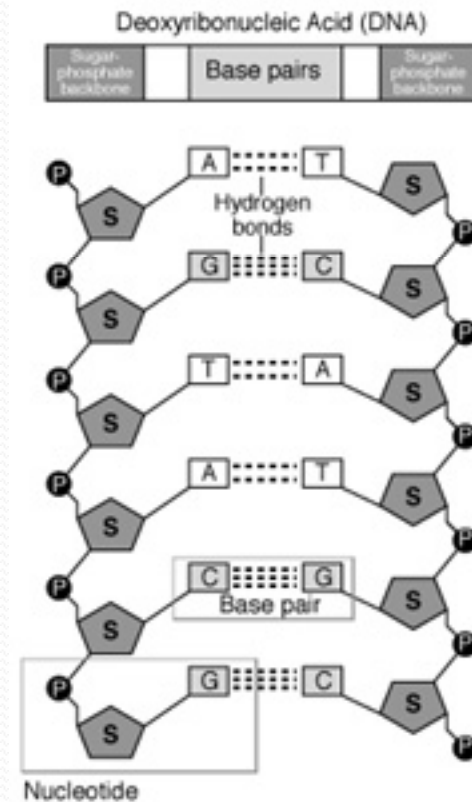
DNA

- The monomers of DNA are nucleotides (deoxyribose sugar + phosphate group + nitrogenous base)
- The 4 nucleotide bases are adenine (A), thymine (T), cytosine (C), & guanine (G)



DNA

- Double helix molecule = double stranded with a twisted ladder shape
- Sugar-phosphate backbone
- Complementary base pairing (A pairs with T & C pairs with G)
- Bases joined with hydrogen bonding



CONTRAST DNA & RNA

DNA

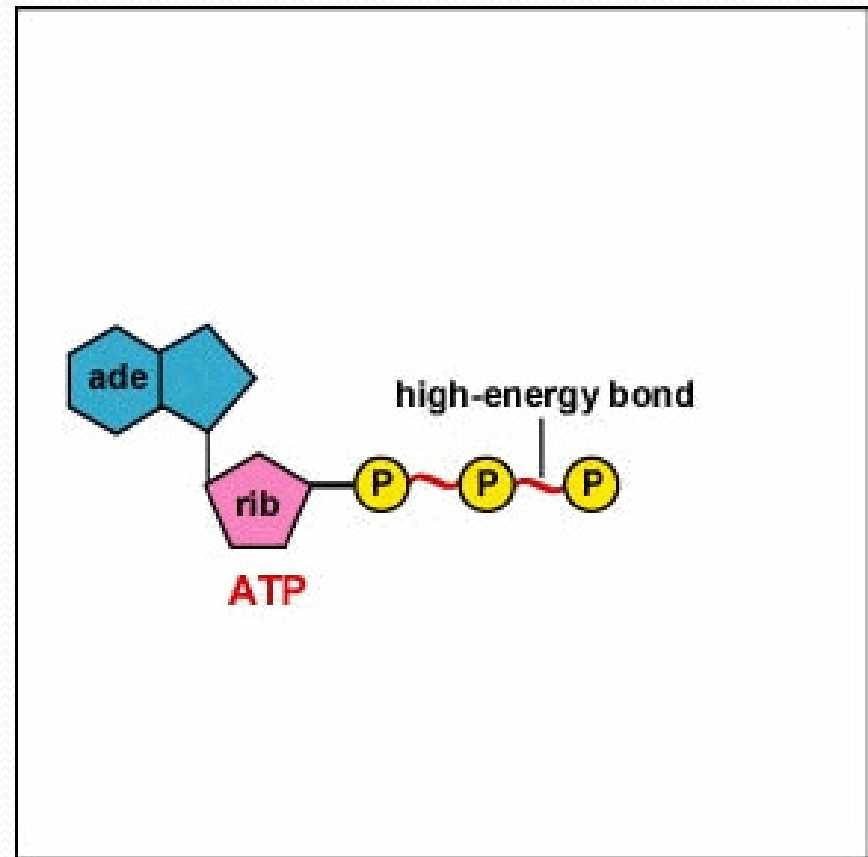
- Deoxyribose sugar
- Located in the nucleus
- Two strands
- Bases are A, T, C, G

RNA

- Ribose sugar
- Located in the nucleus & the cytoplasm
- One strand
- Bases are A, U, C, G

ATP

- Adenosine triphosphate (ATP) is a modified RNA nucleotide
- ATP is the energy currency of the cell
- Produced in the mitochondria during cellular respiration
- Energy stored between the 2nd & 3rd phosphate



ATP to ADP

- Energy is stored in a high energy bond between the 2nd & 3rd phosphate
- When the bond is broken, energy is released and the ATP becomes ADP
- ADP is then reconverted to ATP in the mitochondria

