

Nucleic Acids

- polymers made of monomers called nucleotides

(1) DNA

(2) RNA

CENTRAL "DOGMA" of MOL BIOLOGY

DNA $\rightarrow$ RNA $\rightarrow$ protein

Ribosomes - site of protein synthesis

Nucleotide

(1) Nitrogenous Base

(2) 5 carbon sugar (pentose)

(3) phosphate group(s)

Nucleoside -

portion of a nucleotide without the phosphate group.

Nitrogenous Bases

- one or two rings

- act as bases (take up H^+)

(1) Pyrimidine

- one ring

- Cytosine and Thymine

(2) Purines

- 2 rings
- Adenine and Guanine

Thymine in DNA but replaced by
Uracil in RNA



DNA - deoxyribose

RNA - ribose

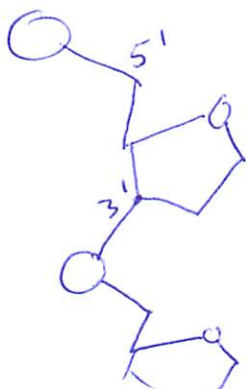
Prime

- put a (') after the
number of the sugar carbons

Phosphate Group - attached to 5' carbon

Phosphodiester Linkage

- phosphate group that links the two
sugars in a chain



5' end

- phosphate attached to 5' carbon

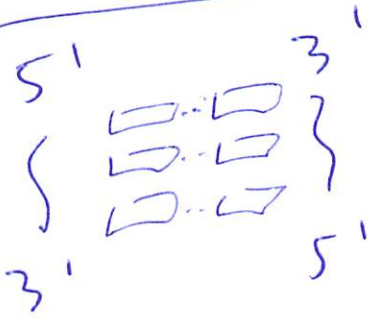
3' end

- hydroxyl (OH) attached to 3' carbon

Directionality

- the 2 sugar-phosphate backbones are running in opposite directions

↓
Anti-parallel



A-T	T-A
C-G	G-C
complementary base-pairing	

- * - bases held together by Hydrogen Bonds
- other bonds are covalent
- use Uracil (U) in place of T for RNA