

Carbohydrates

Lipids

PROTEINS

NUCLEIC ACIDS

Makeup: Carbon, hydrogen, oxygen in a 1:2:1 ratio

Uses: Quick energy

Forms Rings



EXAMPLES:

① Simple sugars

- Monosaccharide (monomer)
- glucose, galactose, fructose



- Disaccharide (2 simple sugars bonded)
- Sucrose (glucose + fructose)

② Complex carbohydrates

- Monosaccharides bonded together
- Cellulose: plant structure
- Starch: plant storage
- Glycogen: mammal storage (liver)

MAKEUP: CARBON, HYDROGEN, oxygen, nitrogen, S (+ sulfur)

Monomer: Amino acids linked by peptide bonds

FORMS 3-D STRUCTURE WHICH IS FORMED BY PROTEIN FOLDING → linked to protein function

20 amino acids - infinite # of proteins  
R-group gives each AA different properties

USES: TISSUE building, cell components, + ENZYMES\*

EXAMPLES: Hemoglobin (Red blood cells),  
INSULIN (controls blood sugar)

Makeup: Mostly carbon and hydrogen - few oxygen

USES: long term energy storage, insulation, protection, chemical messengers (steroids + hormones)

FORMS LONG CHAINS:

FATTY ACID TAILS + GLYCEROL

EXAMPLES: FATS, OILS, WAXES

(NON POLAR - NOT SOLUBLE IN WATER)

TYPES: Phospholipids (cell membrane)

- SATURATED - SOLID @ ROOM TEMP - Hydrogen saturates all carbons

- UNSATURATED - LIQUID @ ROOM TEMP - ONE DOUBLE BOND - Vegetable oil

- POLYUNSATURATED - LIQUID @ ROOM TEMP - MORE THAN ONE DOUBLE BOND - OLIVE OIL

Makeup: Hydrogen, oxygen, carbon, nitrogen, phosphorus

Monomer \* Nucleotides \*

3 parts: ① sugar ② phosphate ③ Nitrogen base



USES: STORES genetic information

- Order of nitrogen bases in DNA codes for specific amino acids which link to form proteins

NITROGEN BASES: A-T, G-C

A-U, G-C

TYPES: DNA or RNA