

Biomolecules = Macromolecules

4

Carbon (C) - Makes all Biomolecules/macromolecules **ORGANIC**

4 Different Biomolecules: Carbohydrates, Lipids, Proteins, Nucleic Acids

ALL Biomolecules/macromolecules have Carbon, Hydrogen, & oxygen.

Monomer - 1 structure of a molecule

"CHO"

Elements

Polymer → many monomers put together

Only Carbohydrates have **Dimer** (Disacchride) → 2 molecules → Two monomers put together

When monomers come together to make a polymer it is called "Polymerization"

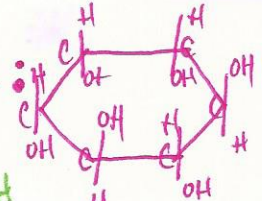
Carbohydrate: Biomolecule/macromolecule Looks like a

• Central/Main Energy Source.

Carbs = sugar: **Sacchride**

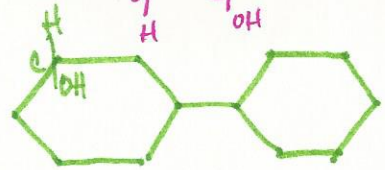


Monomer: **Mono**sacchride
1 molecule 1 sugar



1 sugar molecule Ex: Candy, Honey, Sugar

Dimer: **Di**sacchride
2 molecule 2 sugar



2 sugar molecule Ex: Fruit, Fruit Juice

Polymer: **Poly**sacchride
many molecules many sugar



Many sugar molecules Ex: Bread, Pasta, Potatoe

Lipids: Biomolecules/Macromolecule • Function of a Lipid: Stored Energy

Monomer of Lipid: Fatty Acid

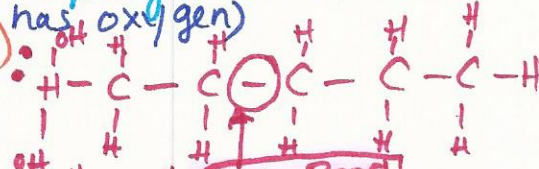
Polymer of Lipid: Lipid

2 Types of Structures:

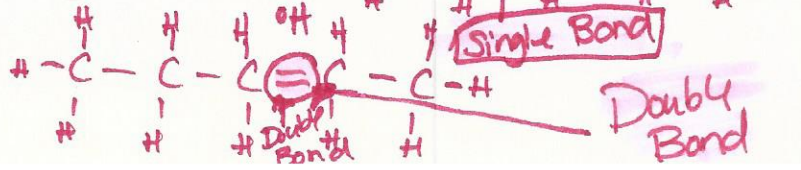
- physical: Ladder / bridge
- chemical: Looks like a **chain** of Carbon + Hydrogen (sometimes it has oxygen)

2 Types of Chemical structures

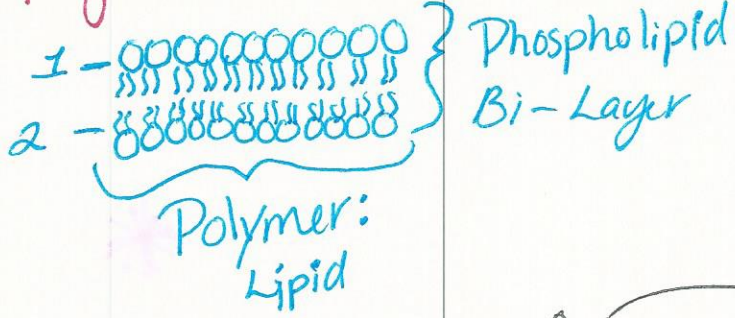
Saturated fat: **Solids**: Butter, Crisco, Lard (manteca)
Bad fats



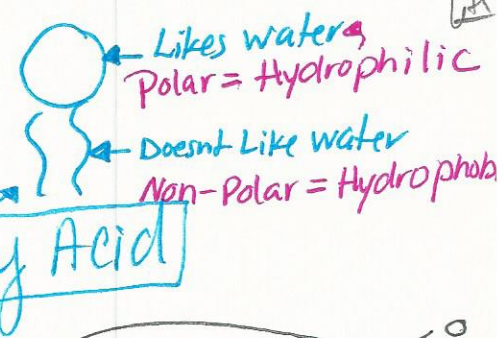
Unsaturated fat: **Liquid**: Pam, olive oil, Canola
Good fats



Physical Structure of Lipid: Ladder/Bridge



Monomer of a Lipid



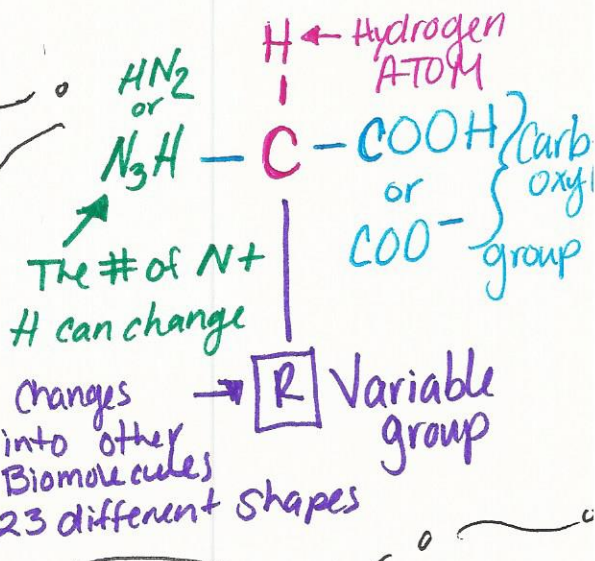
Protein: Biomolecule / Macromolecule

- Helps fight diseases
- Carry out chemical reactions
- Repairs muscle & Tissue
- Transports molecules in and out of the cell.

• Because it makes up **90%** of our **body's functions**, this is the **Most important Biomolecule / macromolecule.**

Monomer of Protein: Amino Acid
 Polymer of Protein: Protein: **4 structures**

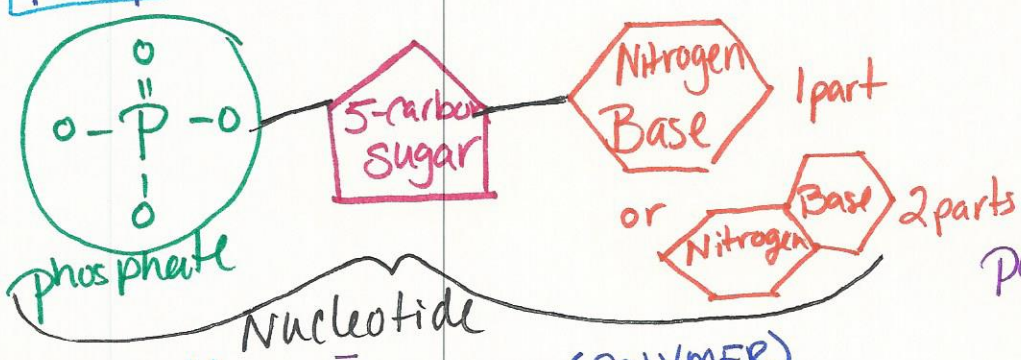
Structure of Amino Acid:



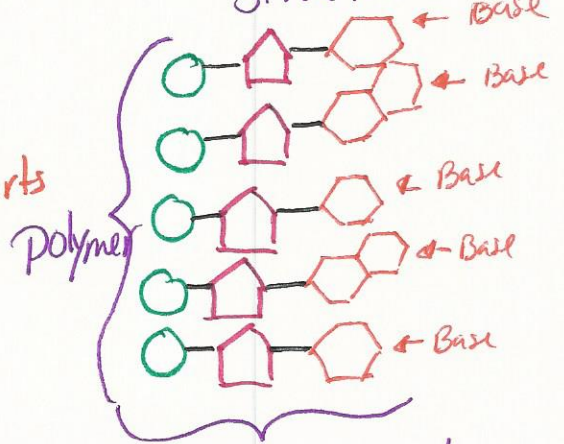
Nucleic Acid: Biomolecule / macromolecule / Polymer

- Monomer of Nucleic Acid - Nucleotide
- Polymer of Nucleic Acid - Nucleic Acid
- Function: transmits/stores Genetic Info. (DNA)
- Function: To make protein for the body. (RNA)
- Composed of 3 Parts: **Nucleotide** ← "Song"

Phosphate, 5-carbon sugar, Nitrogen Base



RNA: Single Stranded structure



RNA strand 1-stranded structure

