

UNIT A TOPICS:

- A. Scientific Method
- B. Water Properties
- C. Carbon-Based Molecules
- D. Enzymes



What are the 5 parts to the **Scientific Method**?

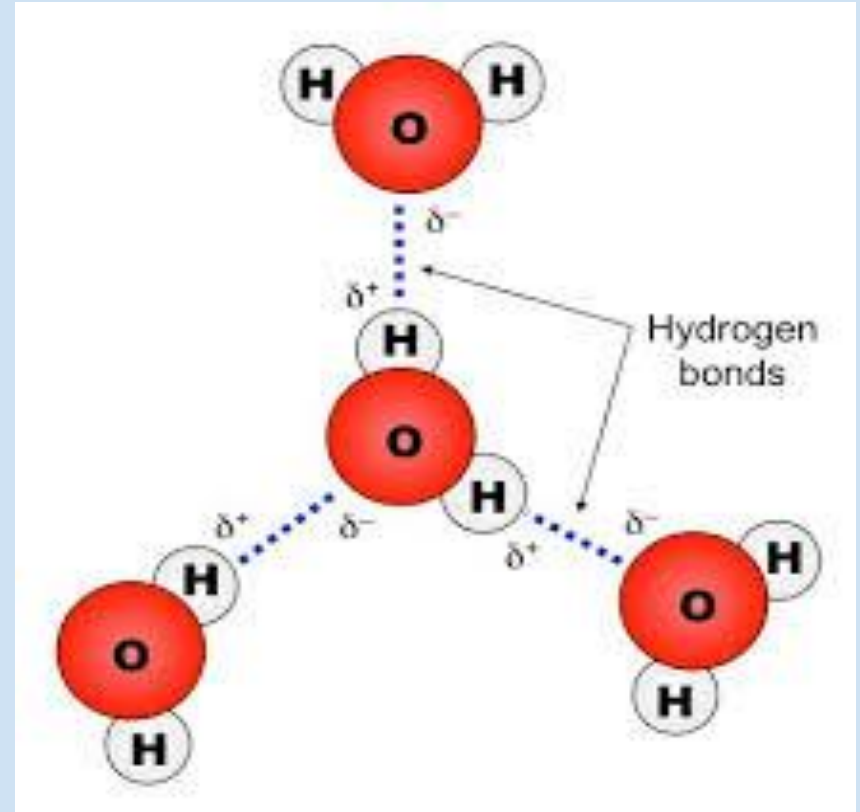
1. **O**bserve
2. **H**ypothesize
3. **T**esting hypothesis
4. **A**nalyze
5. **E**valuate

Think of a 5 word silly sentence using the first letter in Ascending or Descending Order:

- a. O,H,T,A,E
- b. E,A,T,H,O

What makes up a Water Molecule?

- ★ 1 oxygen (-)
- ★ 2 hydrogen (+)
- ★ Hydrogen bond
 - between water molecules
 - $H \rightarrow O$



Mickey **LOVES** Minnie



- Minnie's ear (+) touches Mickey's chin (-)
- She  's to HEAR his Compliments (+)
- He **INSULTS** Goofey (-)

Water has SUPER HERO POWERS!

★ **Adhesion**

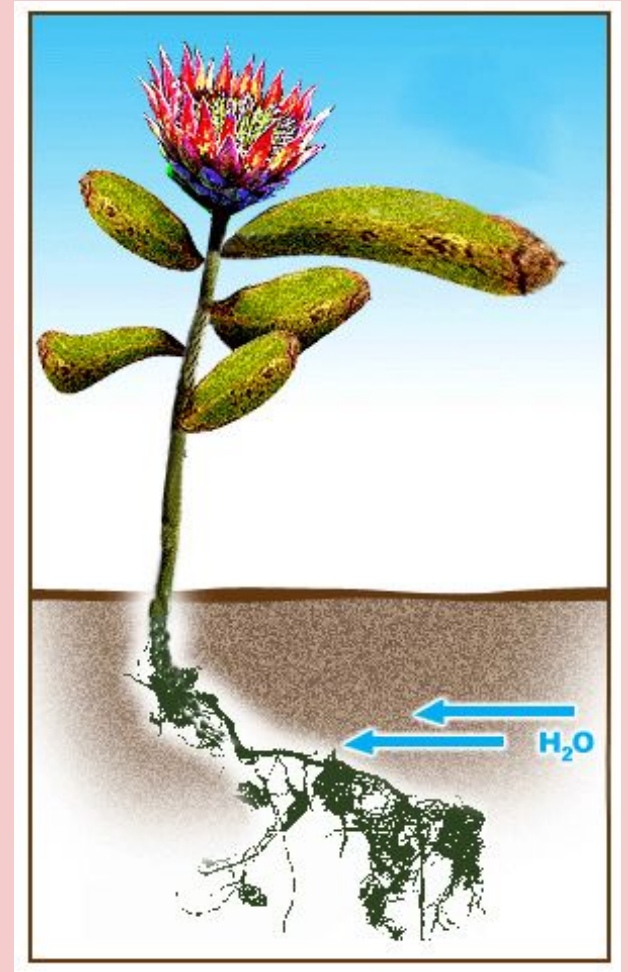
★ **Cohesion**

★ **High Specific Heat**



ADHESION

- ★ Water molecules are attracted to NON-water molecules
- ★ EX: Capillary Action
 - UPward motion against gravity
 - Water CLIMBS UP the stem from the roots



COHESION

- ★ Water molecules attract to other water molecules
- ★ EX: Surface Tension- cluster of water that make a droplet



High Specific Heat

- ★ The temperature of water changes very slowly



Why is water an amazing **SOLVENT**?

★ **Solution = solute + solvent**



Water is considered the 'universal solvent' because of **POLARITY**

Why are **Enzymes** important in chemical reactions?

★ **Enzymes make the chemical reaction more efficient**

★ **How enzymes work:**

- **They speed up the activation energy**
- **The results are accelerated**

4 Types of Carbon-Based Molecules aka POLYMER

1. CARBOHYDRATE

2. LIPID

3. PROTEIN

4. NUCLEIC ACID

Why are they called Carbon-based molecules? All 4 molecules have **CARBON** in its structure



Carbohydrate

★ A source of immediate energy

★ $C_6H_{12}O_6$

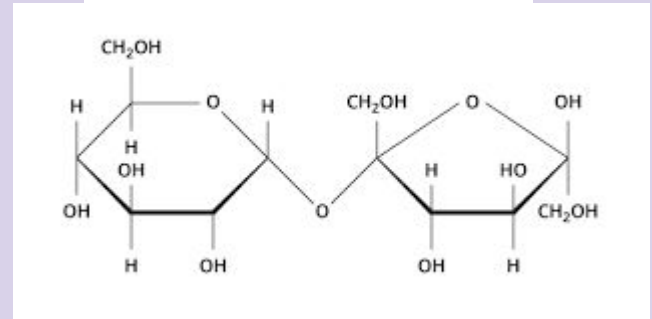
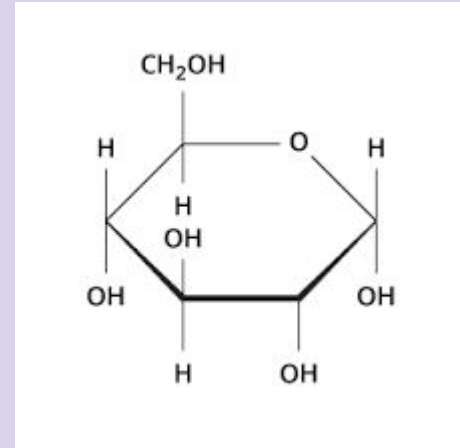
★ Monomer: glucose

★ EXAMPLES:

○ Mono SACCHARIDE

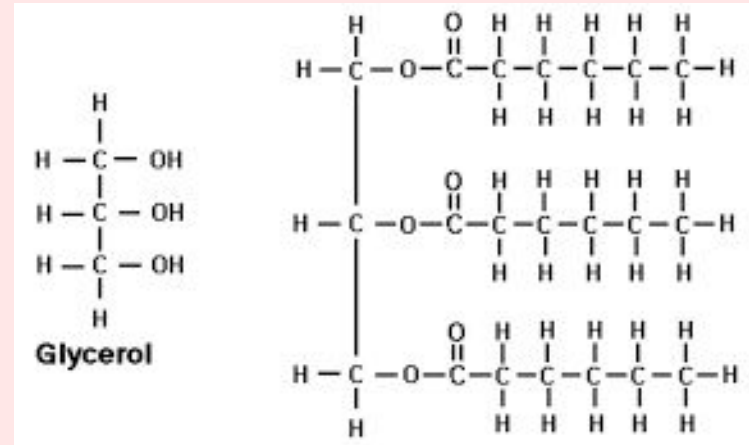
○ Di SACCHARIDE

○ Poly SACCHARIDE



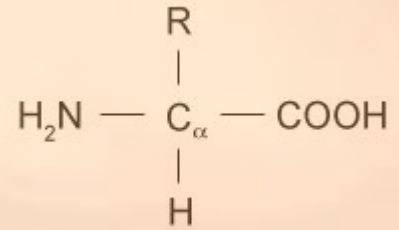
LIPID

- ★ Stores energy
- ★ Monomer: Tri-glyceride
- ★ EXAMPLES:
 - butter
 - Oil
 - animal/plant fat



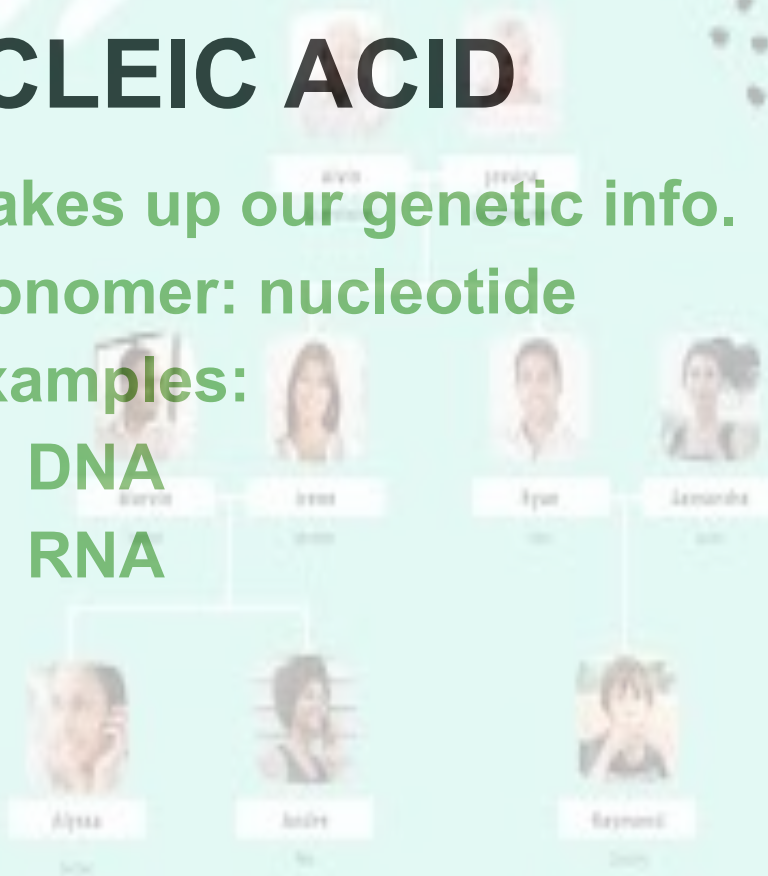
PROTEIN

- ★ Builds muscle, makes up parts of the cell
- ★ Monomer: amino acid w/ peptide bonds
- ★ Examples:
 - Enzymes
 - Muscles

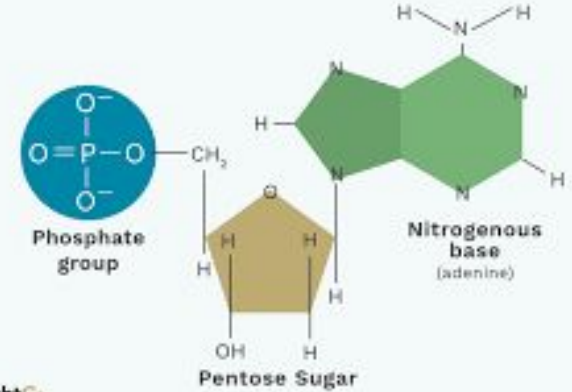


NUCLEIC ACID

- ★ Makes up our genetic info.
- ★ Monomer: nucleotide
- ★ Examples:
 - DNA
 - RNA



3 Parts of a Nucleotide



ThoughtCo.