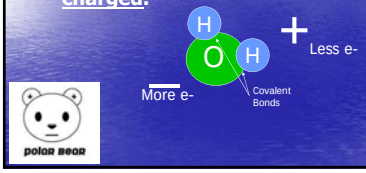
WATER AND pH

Special Features

- Polar: covalent bond not shared equally - regions are charged.



- Cohesion: attractive force between like particles
- Adhesion: attractive forces between unlike substances
- Both forces allow water to move against gravity → Capillary Action

Great Solvent

Water dissolves other polar substances

Ex. salt, sugar, proteins

Solvent = what does the dissolving

Solute = what is dissolved

Great Solvent

Solute determines the pH of the solution (sol'n)

Base has more OH- floating around;
Acid has more H_30+ floating around

Ex. HCl ⟷ H+ + Cl-

↓

H_3O+

pH scale

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Acid neutral Base

Density Anomaly

Solid water is LESS dense than liquid :. Ice floats!

High Specific Heat Capacity

- H_2O resists Δ in temp.
  - Takes a lot of energy to heat up or cool down
- H_2O moderates temps on Earth

Water Builds/Breaks Down Macromolecules

- Large organic compounds are built from smaller ones called monomers

↓

- Many monomers together will form polymers

↓

- Many polymers together are called macromolecules

Building Macromolecules

Dehydration synthesis : build up of molecules

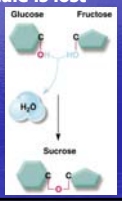
- H_2O is released during this process

Hydrolysis: break down molecules

- H_2O is needed to break bonds

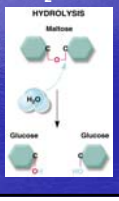
Dehydration Synthesis

- When 2 monomers are joined, a H_2O molecule is lost



Hydrolysis

- Breaking up polymers by the addition of an H_2O molecule



QUESTIONS? COMMENTS?