

Chapter 3:

Water and Life

Properties of Water

- Cohesive/Adhesive
 - High surface tension
- Moderates Temperature
 - High heat capacity
 - High heat of vaporization
- Expands Upon Freezing
 - Ice floats in liquid water

Cohesion - water molecules are attracted to other water molecules

Adhesion - water is attracted to other surfaces

Surface Tension - how difficult it is to break the surface of a liquid

Moderates Temperature - absorbs heat from warm air and releases heat to cool air

Specific Heat - amount of heat needed to increase temperature

Evaporative Cooling - as liquid evaporates, the remaining surface cools

Expands Upon Freezing - hydrogen bonds in water are more ordered, allowing them to take up less space

Ice Floats - the larger volume of ice reduces its density, allowing it to float in water

Solute - substance that gets dissolved in another substance

Solvent - substance that dissolves another substance

Water is the solvent of life.

Solution - homogeneous mixture of substances

Polar molecules dissolve well in water.

Molecules dissolve well in **similar molecules**.

Hydrophilic - affinity for water

Hydrophobic - no affinity for water

Aqueous Solutions - solutions in which the solvent is water

Most chemical reactions occur in water.