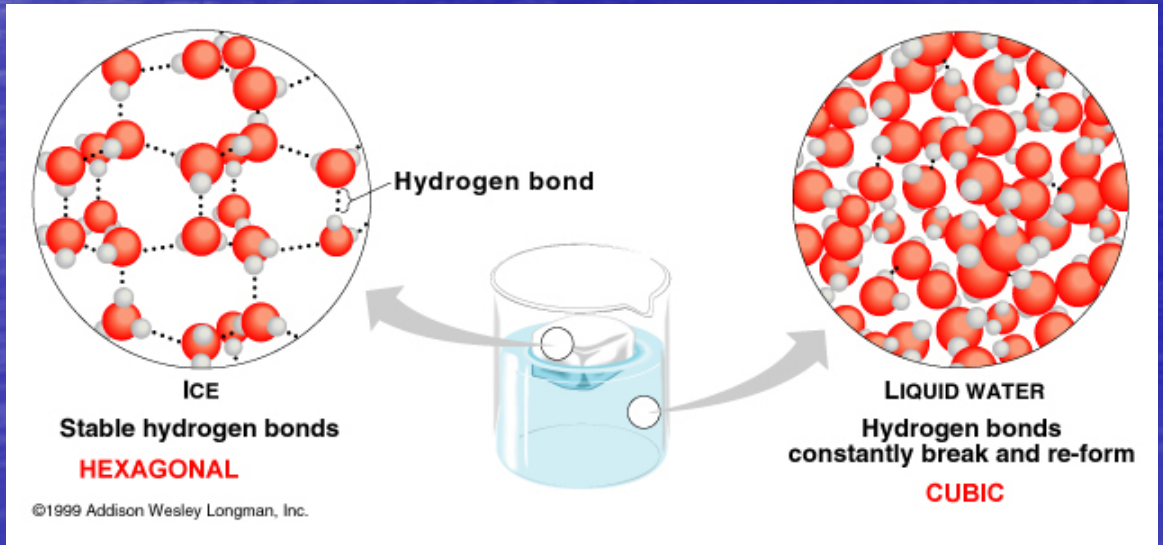
Properties of Water

Chapter 2-2

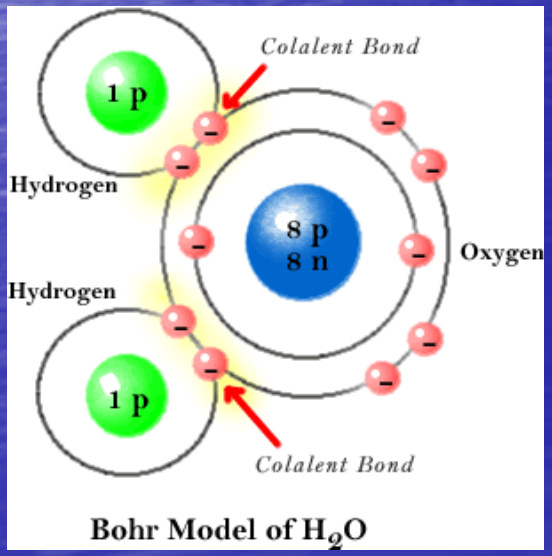
Vital for Life

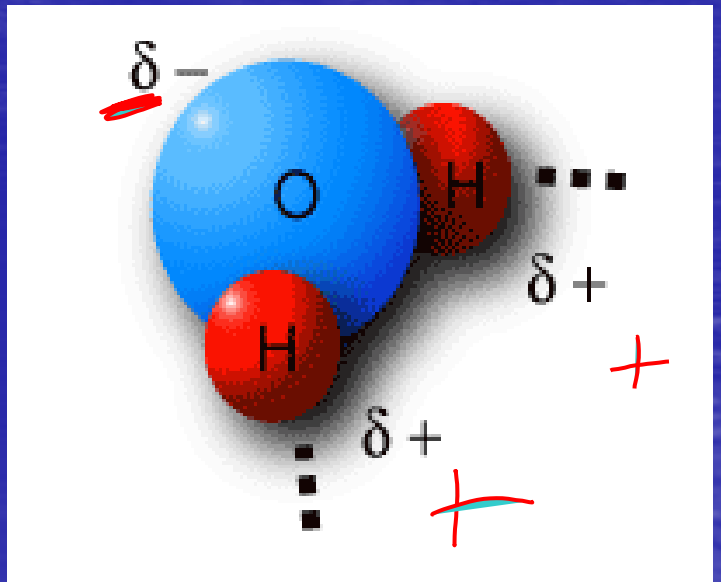
- ¾ of Earth's surface
- Most abundant compound in living things
- liquid over a wide range of temperatures
- Only substance that expands as it freezes



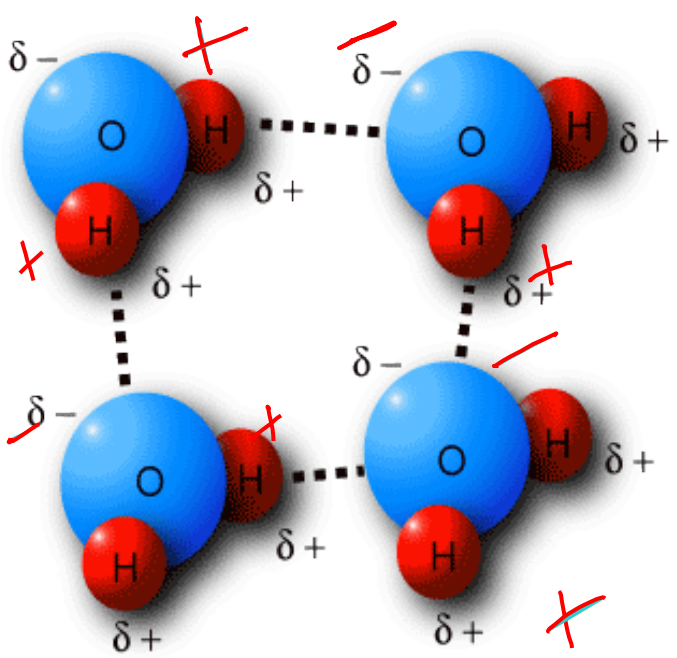
Water molecules are polar

- Polar Covalent bond
- Oxygen hogs electron
- Oxygen end is slightly negative
- Hydrogen end is slightly positive





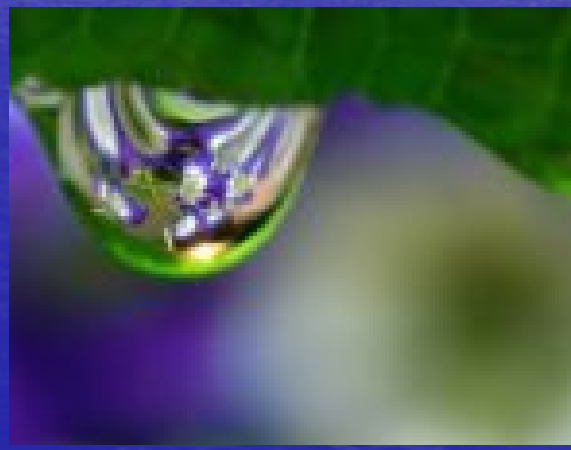
Hydrogen Bonds



- Polar molecules can attract each other
- Negative region is attracted to positive region of nearby molecule
- Type of Van der Waals force

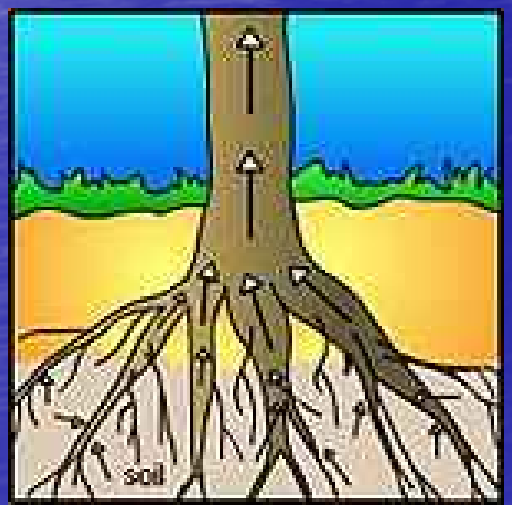
Cohesion

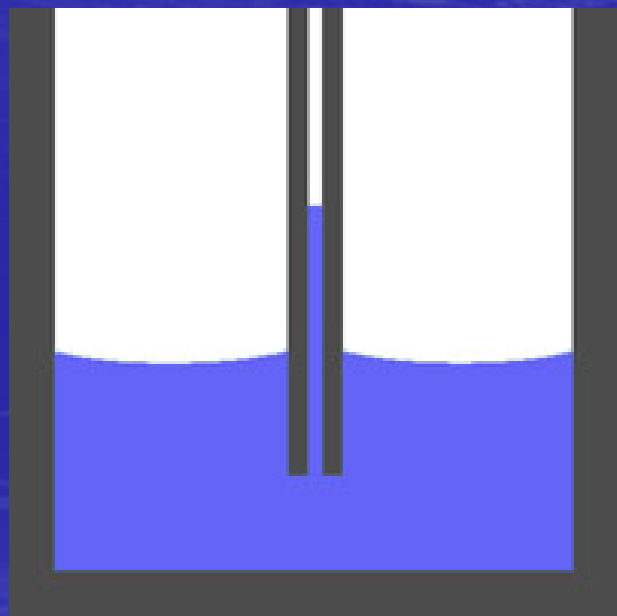
- Attraction between molecules of the same substance
- Water is extremely cohesive
- Surface tension



Adhesion

- Attraction between molecules of a different substance
- Water will adhere to the sides of glass
- Capillary action
- Enables water to rise up through roots to stems and leaves





Mixture

- 2 or more elements or compounds
- mixed together but not chemically combined

Solutions

- Mixture where everything is dissolved
- All components are evenly distributed
- Solute – substance that is dissolved
- Solvent – the substance that does the dissolving

Suspension

- Mixture
- Parts do not dissolve
- Blood, milk

pH Scale

- Water can for H+ and OH- ions
- pH scale measures concentration of H+ ions
- Acids produce H+ ions: pH < 7
  - Sour taste
- Neutral :pH = 7
- Bases produce OH- ions: pH > 7
  - Slippery
- Buffer
  - weak acid/base
  - Maintains homeostasis