

# Station 1 – “The Penny Lab”

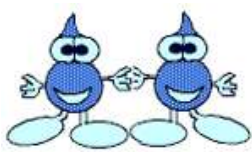


**Cohesion** – Water “sticks” to water, forming round droplets

**Adhesion** – Water “sticks” to other surfaces

## Surface Tension

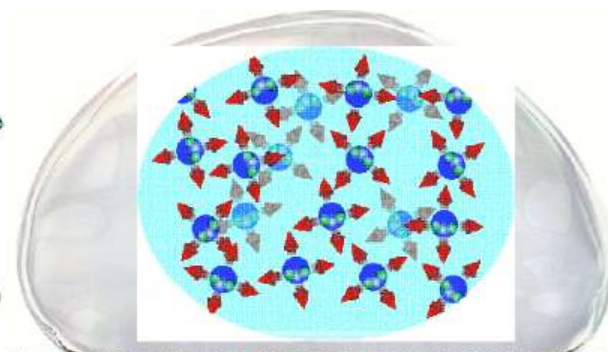
- Water appears to form a “skin” on its surface because it “sticks” to itself so well
- Allows small things like bugs to literally walk on water’s surface



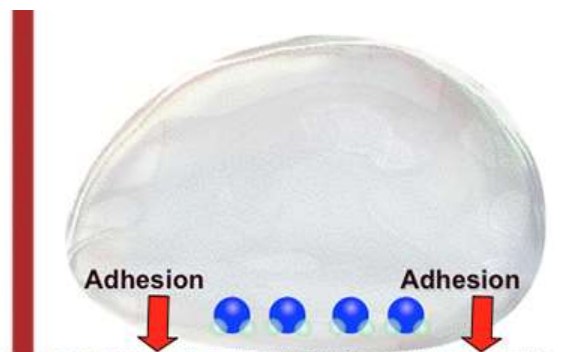
Cohesion



Adhesion



Cohesion



Adhesion

Adhesion

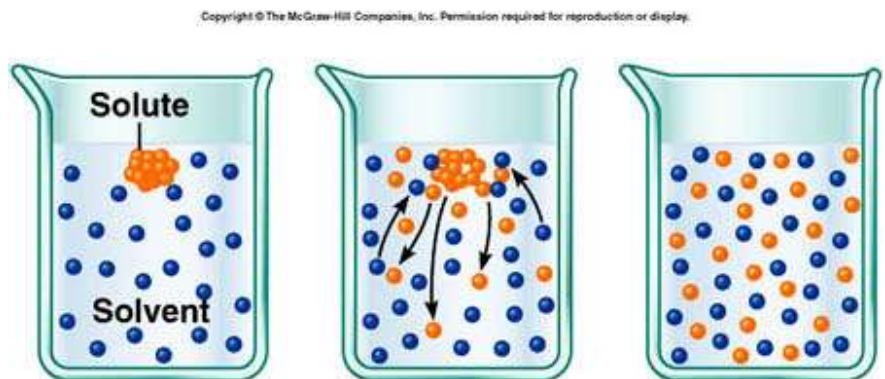
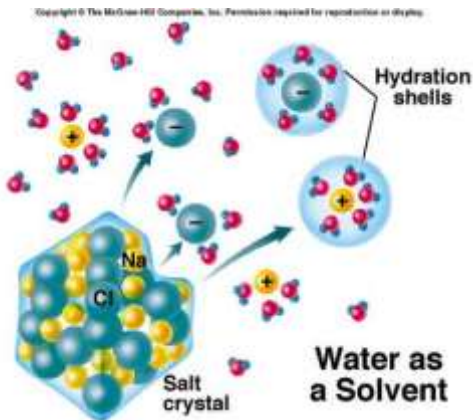
Adhesion

# Station 2 – Bubble and Fizz



**Universal Solvent** – Water is able to dissolve most substances

- Includes most macromolecules in cells
- Makes chemical reactions must easier and faster

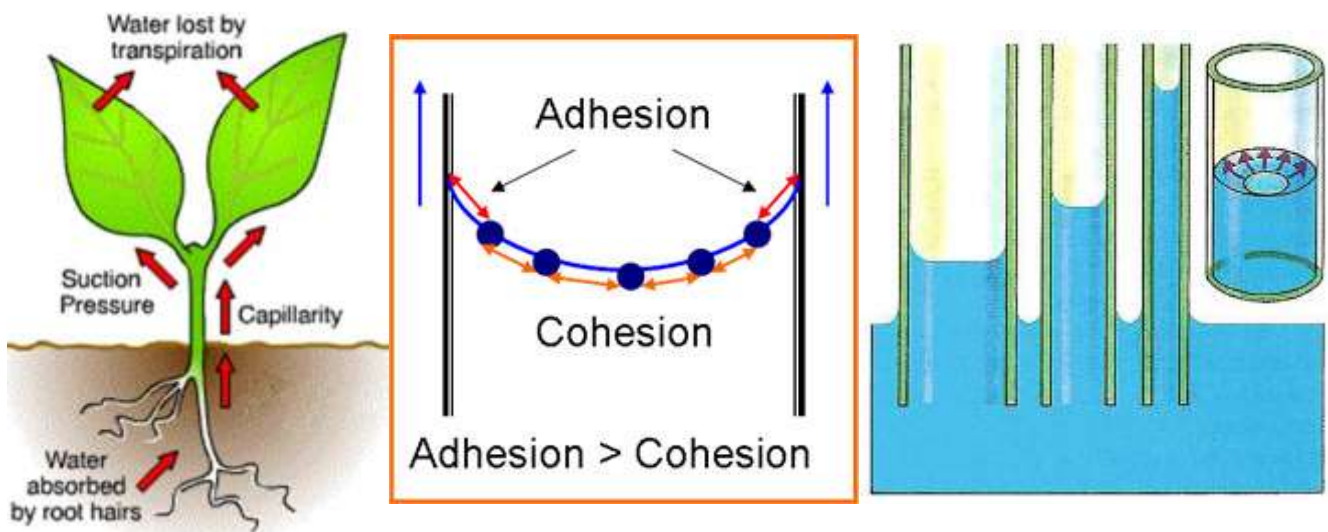


# Station 4 – Capillary Action vs. Gravity



**Capillary Action** – Water can flow in narrow spaces without the assistance of outside forces.

- This process can be seen in plants where water travels up from the roots to the rest of the plant



# Station 5 – Hot Plate Race

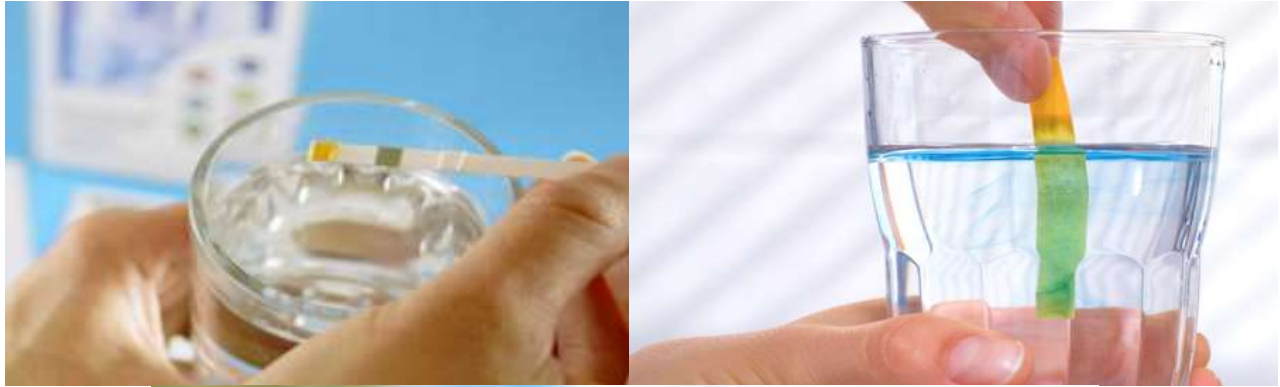


**Heat Capacity** – Water requires a large amount of heat to increase its temperature (and doesn't cool off easily either)

- Helps keep body temperature constant
- Evaporation requires a lot of heat → perspiration (sweat) evaporates from our skin to cool us down
- Ponds and lakes don't heat up much on a sunny day → protects aquatic organisms

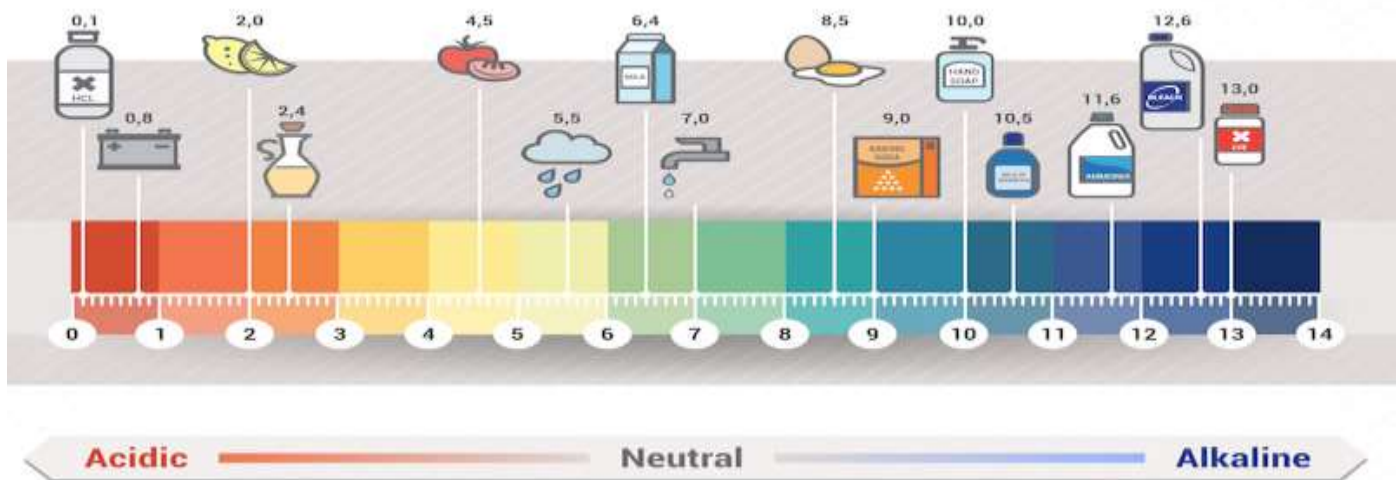


# Station 6 & 7 – pH, Acids, and Bases



**pH** – A measure of how acidic or basic liquid is. The range goes from 0-14

- pH of water is 7 (neutral).
- pH levels below 7 are acidic.
- pH levels above 7 are basic.



# Station 3 – Frozen Density



**Density** – When water goes from a liquid to a solid (freezes), it expands and has a lower density

- Ice floats in liquid water.
  - Prevents lakes and ponds from freezing solid
  - Protects aquatic organisms in freezing temperature
- The molecules in ice expand, which can break pipes, concrete, and even rocks (weathering)

