

Cohesion

Water “sticks” to itself.

Water can form droplets.

Adhesion

Water “sticks” to other substances.

Water can “stick” to plants and soil.

Neutral pH

Pure water has a pH of 7

Cells are filled with a chemically stable, non-reactive substance

Surface Tension

Water forms a “skin” on its surface due to cohesion.

Small animals can “walk” across water’s surface

High Heat Capacity

Water can absorb a lot of heat without changing temperature.

Organisms, which are filled with water, and their aquatic environments can stay at a constant temperature if the air heats up or cools down.

Low Density of Solid Form

When water freezes, it expands and becomes less dense.

Ice floats, so lakes and ponds do not freeze solid in winter.

Capillary Action

Water can “climb” thin tubes and small spaces, due to cohesion as well as adhesion with the sides of the tube.

Plants can transport water from their roots up through their stems to their leaves.

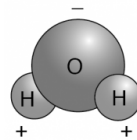
Universal Solvent

Water can dissolve all polar substances (called solutes).

Chemical reactions inside cells can take place faster because they are in solution.

Polarity

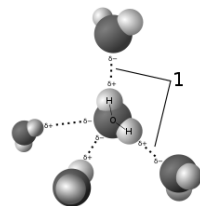
Individual water molecules have a positively-charged side, near the hydrogens, and a negatively-charged side, near the oxygen.



This property is the ultimate cause of all water’s abilities.

Hydrogen Bonding

The negative pole of one water molecule is attracted to the positive pole of another water molecule, forming a weak chemical bond.



This type of bonding between water molecules creates a strong collective force that results in most of the behaviors water displays.

