

PROPERTIES OF WATER

by Cherie Schadler

You have a unique personality. Everything about you makes you special. In a similar way, water has unique abilities. Water **molecules** can stick to themselves (**cohesion**) or to other substances (**adhesion**), pull themselves (cohesion) and other substances (adhesion) along, **dissolve** or break down substances, and carry substances on its surface (**surface tension**). These properties of water help us every day.

Did you know that one glass of water contains millions of molecules that are sticking together? We call this "sticky" property of water cohesion. It is what makes great bodies of water such as creeks, rivers, gulfs, or oceans. All of those water molecules are sticking and flowing together. Without cohesion, you wouldn't be able to take a bath, swim, or drink fluids.

Because water molecules like to "stick" together, (cohesion), they form a high degree of surface tension on top of the water almost like a skin. Unless the surface film is broken, heavier objects than water can float on the surface of the water. Can you imagine what would happen if boats couldn't float? You may have witnessed surface tension on a rainy day when you saw a bug or maybe a leaf float on the surface of water. Surface tension was holding up each item.

Water not only likes to "stick" to itself, but through its ability called adhesion it is attracted to solid objects as well. You experience adhesion every time you take a bath, wash your hands, or wash a dish. When you wash, water droplets "stick" to you or to the dish. This is why you use a towel to remove the droplets through **absorption**, or let your dishes dry through **evaporation**. Adhesion keeps water molecules from falling off your hands to the ground.

Every time you mix water with a drink powder, you are experiencing water's ability to dissolve. When water is mixed with certain substances, such as hot cocoa powder, water breaks the powder down or dissolves it into much smaller particles. The particles become so small that it is difficult to see them. When you take a sip of the drink, you probably don't realize that water is working all of its abilities to quench your thirst. First, it is cohering to itself to form the body of liquid. Second, it has created a surface tension or "skin" over the top of the liquid. Third, the liquid molecules adhere to the inside of the cup. After you stir in the drink powder, the tiny particles dissolve. When you take a sip, all of the properties of water work together to help you to be healthy and grow.

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