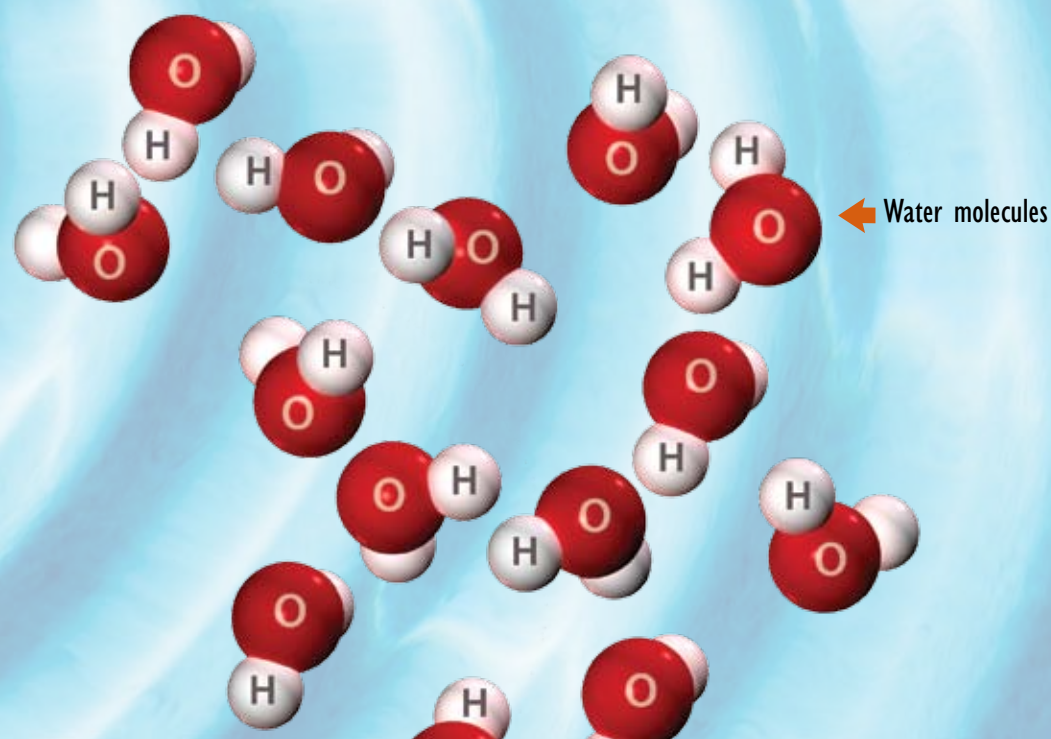


Compounds

A **compound** is made when the atoms of different elements join together. They become a new substance. The compound has different properties than the elements that make it.

For example, water is made from hydrogen and oxygen. But it isn't like either of them. Water is a compound. Each water molecule has two kinds of atoms. There are two hydrogen and one oxygen atom. This is written as H_2O . The number two means that there are two hydrogen atoms in the molecule. No number after the O means there is just one atom of oxygen.

Compounds are made by reactive (ree-AK-tiv) elements. Reactive elements join easily with others. Some elements are very reactive and some are not. The more reactive an element, the more likely it will form compounds.



Amazing!

There are about 1,000,000,000,000,000,000,000,000,000 (one septillion) water molecules in one medium-size glass of water.



Too Hot to Handle

A very unreactive element is argon gas. It is used in light bulbs because it won't catch fire when hot. A very reactive element is sodium metal. It needs to be kept in oil because if it touches air, it can catch fire!



States of Matter

Matter can exist as a solid, liquid, or gas. These are the **states of matter**. When water is solid, you can skate on it. You can put it in your drinks to make them cold. We call this ice. When water is a liquid, you can swim in it. You can drink it or take a shower. You can water plants with it. You can fill your dog's water bowl with it. When water is a gas, it is called water vapor or steam. Water vapor would never stay in your dog's water bowl. It is what clouds are made of. You see it as steam from a kettle or rising off a bowl of hot soup.



▲ Icebergs are like ice cubes floating in a glass of water. They float in the ocean. Just like ice cubes, they rise to the surface.

Why Does Water Appear Outside My Glass?

On a hot humid day, the air contains many water molecules. These molecules have a lot of energy and move around a great deal. If they hit the sides of a cold glass of water, then they lose some of their energy and slow down. Some of the molecules slow down so much that they don't have enough energy to be in a gas any more. They turn into liquid on the outside of the glass.

