The Amazing ***Water Molecule***

The **water** molecule, one of the most important and beneficial compounds known to man and to all living things for that matter. Although water doesn't have any specific major groups, it does have different forms that are all around us including: fresh water found in lakes and rivers, saltwater found in oceans and seas, and precipitation which is rain and hail (frozen water pellets). Since we are on the topic of water, you may be asking yourself, what is water even made up of? Good question, water is formed when two hydrogen atoms react with one oxygen atom using a substantial amount of energy so that the atoms rearrange to fit in alignment. Water molecules are held together by covalent bonds, a chemical bond in which atoms share electrons. Water is commonly known around the science world and the real world as well as H2O (2 hydrogen atoms & 1 oxygen atom) so, the water's formula tells you the chemical structure of the molecule. Yes, it's that easy. Well, we know what water is made out of now but, what the heck does it do? What do living things use water for? All living things, every one of them, need water for the chemical reactions that are going on in the body or structure 24/7. More specifically, in plants, water is necessary for growth and for photosynthesis which is how plants obtain their foods and get their nutrients. Water is very important to plants during photosynthesis because, water makes up a big chunk of the process, just look at the chemical formula. 6CO2(carbon dioxide) + 6H2O(water) -----> C6H12O6(glucose)+ 6O2(oxygen) = Photosynthesis. As you can see, without water, the photosynthesis process would not work meaning that the plants would not give off oxygen gas, the thing that us humans need to survive. Like plants, humans also need water to carry out the basic everyday functions and processes that go on inside of us everyday. In humans, water carries the necessary nutrients to cells, flushes waste and harmful toxins out of the body, and regulates body temperature for example, water makes sweat to keep a person cool in warm conditions A.K.A homeostasis. About 60% of the human body (on average) is made up of water because your brain is of 80% water and blood is about 90% water based. The liver most importantly consists of 97% water, which is why serious alcoholics sometimes are diagnosed with liver failure because alcohol is dehydrating and sucks up the liver's water leaving it damaged and not capable of performing its required functions. Like the cars out on the road need oil to run, the human body needs water to work properly. If the body doesn't receive enough water, it will become dehydrated causing fatigue, nausea, severe headache, and bloating. On the contrary, if the body gets too much water, like a common overdose on drugs, you can have a water overdose knows as hyponatremia, a case in which the amount of sodium in the blood is lower than normal which is what happens when the blood gets too diluted by water. This condition causes the kidneys to become “drowned” in the mass consumption of water in which the kidneys cannot flush the water quick enough. Symptoms include: nausea, vomiting, mental cloudiness, and frequent urination. Every once in a while, on the news you hear about stupid people out there who like to test their limits and drink insane amounts of water either for competitions or just “the fun of it”. What's the fun in dying? These people are later taken to the hospital and often die because their bodies cannot handle **THAT** much water. Water is like the “sweet tooth” molecule, you have to have it but, you can't have too much because it can harm your health, and you can't have to little because you need it in your life. With water, you have to find just the right amount and your body will thank you later.