



## Being **UNIQUE** is cool!

You have probably been told that you're unique and special -- as is every human being! This might be because of your parents...the genes you've inherited...all the characteristics that combine to make you *you*! We know that no two human beings are exactly alike -- and what a wonderful thing it is to understand and treasure the differences!

Water is also unique...do you know how? It's uniqueness doesn't come from its parents -- maybe ancient raindrops. Even when it becomes a rain drop with a slightly different shape and weight from another rain drop falling with it from the sky, **molecularly** it is the same as every other molecule of water. So why is water unique?

This month's experiment will demonstrate very clearly one of the properties of water that makes it unique. Think back to what you've learned in the classroom about matter -- and the different forms it may take. Remember something about a solid, a gas, and a liquid? Ah ha!

### Now let's do the experiment...

Take three clear plastic zipper bags, 6 inches by 10 inches, and pour 1/8 cup of **cold water** into one of them....and pour 1/8 cup of **room temperature water** into the other two. Then blow air into each bag; quickly zip them closed; and place two in a sunny spot inside or outside, after marking the bag that started out with the cold water. Place the other bag in the freezer.

Make a note of the time when you put the



bags into the sun, and watch what happens! Write down the time it takes for the cold water to become a gas. Note the time it takes for the room temperature water to become a gas.

***Did the original temperature of the water make a difference in how much time it took the water to convert to a gas?***

What you've seen is liquid water turning into gas. As you probably know, water molecules are constantly moving -- this is the **water cycle**. Heat from the sun causes the water to convert from its liquid state -- to **evaporate** -- and become a gas (water vapor). As the vapor cools it **condenses** (turns back into its liquid state) and tiny droplets form that, in mass, turn into clouds. As the droplets get larger, they become heavy and fall to the ground as **precipitation** (rain, snow, sleet). When the droplets fall they recharge the aquifers (ground water) or join streams, lakes, and oceans.

**WATER IS UNIQUE -- IT IS THE ONLY KNOWN MOLECULE TO EXIST IN ALL THREE STATES OF MATTER!** By observing the 'outside' bags, you've just seen two of the states -- liquid and gas. After an hour or so, check the bag in the freezer, and you'll see water in the third state of matter! ***How unique!***

