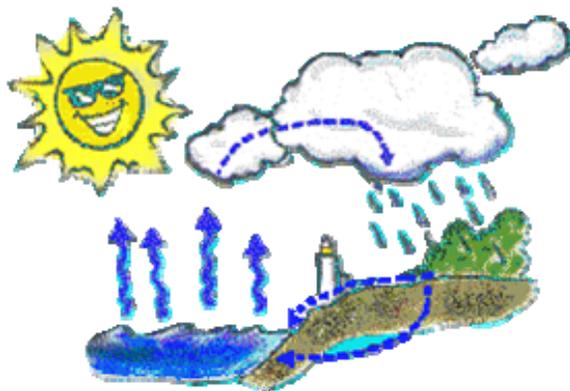


## Super Snowflakes



### The Aim:

To demonstrate what the smallest particle of water looks like and to use this to show how snowflakes are made.

### What you will need:

- different coloured gum drops (or coloured marshmallows)
- toothpicks

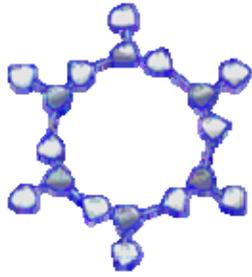
The smallest piece of water that is still water is called a water molecule. A water molecule is made up of one oxygen atom and two hydrogen atoms. In a glass of water there are about 10,000,000,000,000,000,000,000 water molecules. You would need a very special type of microscope to see an individual water molecule.

### What to do:

1. Designate one colour to be a hydrogen atom and another colour to be an oxygen atom.
2. Encourage the children to use the gum drops and toothpicks to make model water molecules, with one oxygen atom attached to two hydrogen atoms. A picture of a model water molecule is shown here.



Snowflakes are made up of water molecules that arrange themselves in a very special way. Each snowflake has six points because the molecules hold hands in this six-sided pattern to give six identical branches.



3. To make snowflakes you will need the same materials listed above. It would be best to let the children make six water molecules and then arrange them in the pattern shown there. Toothpicks can be used to hold the molecules together.

Water is always changing from the liquid form and back again. Most evaporation takes place from large bodies of water around us like rivers, lakes and oceans. When water changes back from the gas form into the liquid form the process is called condensation. You can see condensation when you breathe on a mirror, or on the outside of a glass of ice water. Water vapour in the air can condense and fall as rain or snow. This is nature's water cycle.

To make a six-pointed snowflake model out of paper see *How to Make Six-Sided Snowflakes*.

Water molecules in snow and ice will not pack together as tightly as they do in liquid water. To show this, take a number of model snowflakes and stack them up. Compare this pile with a pile made of the same number of model liquid water molecules. (For example, use 10 model snowflakes and 60 model liquid water molecules.) For the same number of water molecules, liquid water takes up less space than snow or ice. This is why ice cubes float.