

## S3 Melting & Boiling

### ***Water***

Water is made up of two hydrogen atoms and one oxygen atom. This is why it is commonly referred to as H<sub>2</sub>O. Water can exist in three different forms: liquid water, solid ice, or gas vapour.

### ***Melting***

The process of a solid turning into a liquid is called melting. The temperature at which this happens is 0°C (32°F) and is called the melting point. The rise in temperature causes the energy in the molecules to increase. The molecules start to move faster until they have enough energy to break free from their structure and move around more easily. The solid then becomes a liquid. You will see this if you leave an ice cube out of the freezer.

### ***Boiling***

Similarly, there is a temperature at which a liquid turns into a gas. The boiling point for water is 100°C (212°F), when the molecules in the water gain enough energy to become free and turn into a gas. This is known as boiling or vaporization. You will see this when you heat water for tea or coffee.

### ***Evaporation***

Evaporation takes place when a liquid becomes a gas on the surface of a liquid. Evaporation does not need high temperatures to occur. Even though the overall

temperature and energy of a liquid may be low, the molecules on the surface are in contact with the air and gases around them and these molecules will slowly become a gas through evaporation. You will see this when a puddle on the ground disappears after some time.