

Summary – Matter

Differences Between Solids Liquids and Gases

	Change Volume?	Change shape?	Flow?
Solid	No	No	No
Liquid	No	Yes	Yes
Gas	Yes	Yes	Yes

Small Particles and Big Particles

When **small particles** and **big particles** are **mixed** together, the **small particles fill in the gaps between the big particles** to give a smaller volume. *e.g.* Peas and sand or sugar and water.

Diffusion

Particles can **move** through a **liquid or a gas** (and sometimes even a solid!) by themselves. This is called **diffusion** and is the reason you can smell perfume from the other side of the room!

Brownian Motion

Particles such as smoke will move around by themselves due to the movement of air particles around them.

Changes of State

You can make a solid into a liquid by **melting** it.

You can make a liquid into a solid by **freezing** it.

You can make a liquid into a gas by **evaporating** it

If you want a liquid to become a gas quickly, you can **boil** it.

You can make a gas into a liquid by **condensing** it.

The Water Cycle

Liquid water **evaporates** from lakes, rivers, seas and oceans to become **water vapour**.

The water vapour then **condenses** back to **liquid water** and falls as rain and the whole process starts again!

Separating Two Solids Mixed Together

If you have a **mixture of two solids** and one is magnetic, you can **separate them** with a magnet.

Separating a Solid from a Liquid

You can separate a **solid** from a **liquid** by **filtration**.

Separating a Dissolved Solid from a Liquid

You can separate a **solid** which has been **dissolved in a liquid** by **evaporation**. The **solid/gas** dissolved is called the **solute**. The **liquid** is called the **solution**.