



Knowledge Bank: Year 4 Science - Solids, Liquids and Gases

Materials can be one of three states: solid, liquid or gas. Some materials can change from one state to another and back again.

Key Vocabulary:

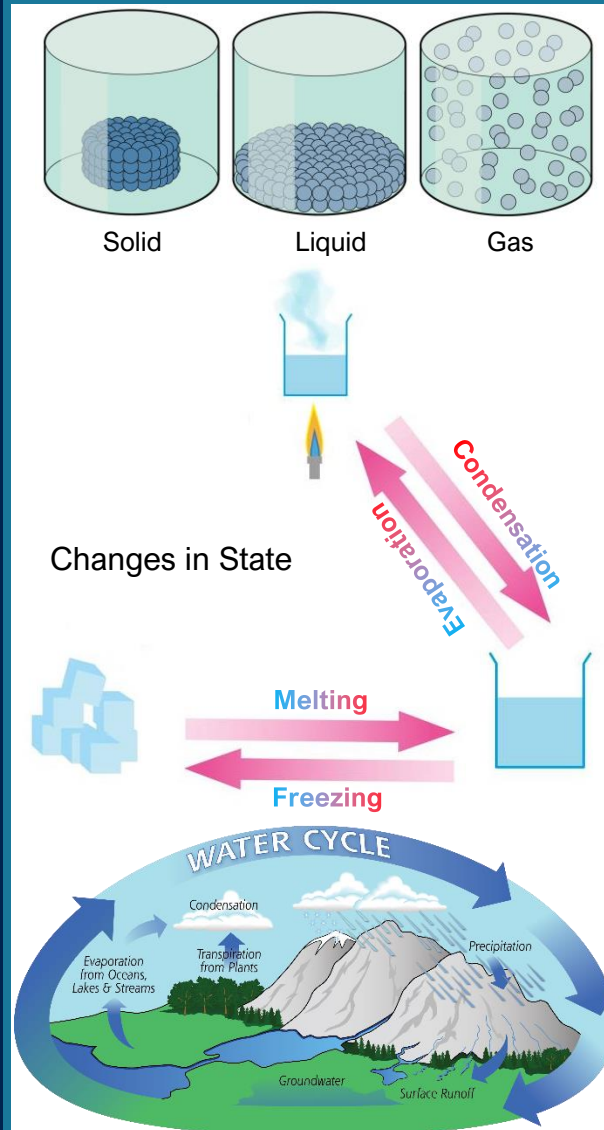
solid	These are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy.
liquid	Take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured.
gas	Can spread out to completely fill the container or room they are in. They do not have any fixed shape, but they do have a mass.
particles	<i>Particles</i> are tiny bits of matter that make up everything in the universe. A particle is something that is so tiny we can't see it.
temperature	Temperature is a degree of hotness or coldness, it can be measured using a thermometer.
material	Our world is made up of many different materials. Each material has different properties such as strength or flexibility, which makes it useful for particular products.
Water Cycle	A 'Water Cycle' is the journey water takes, from land to the sky and back again. The cycle consists of evaporation, condensation, precipitation and collection.

What I should already know (KS1):

How the shapes of solid objects made from some *materials* can be changed

Compare and group together *materials* based on their simple physical properties.

Diagrams/Images:



Key Facts:

Properties of solids, liquids and gases:

Solids:

Particles in a **solid** are close together, they can only vibrate

- Solids stay in one place and can be held.
- Solids keep their shape. They do not flow like liquids.
- Solids always take up the same amount of space. They do not spread out like gases.
- Solids can be cut or shaped.

Liquids:

Particles in a **liquid** are close together but can move around and over each other easily.

- Liquids can flow or be poured easily & not easy to hold.
- Liquids change their shape depending on the container they are in.
- Even when liquids change their shape, they always take up the same amount of space - volume stays the same.

Gases:

Particles in a **gas** are spread out and can move around very quickly in all directions.

- Gases do not have a fixed shape - they spread out and change their shape and volume to fill up whatever container they are in.
- Gases can be squashed.
- Gases are often invisible.

Melt – when a *solid* changes state to a *liquid*.

Freeze – when a *liquid* changes state to a *solid*.

Evaporate – when a *liquid* changes state to a *gas*.

Condense – when a *gas* changes state to a *liquid*.

Precipitation – *Liquid* or *solid* particles that fall from a cloud as rain, sleet, hail or snow.