States of Matter

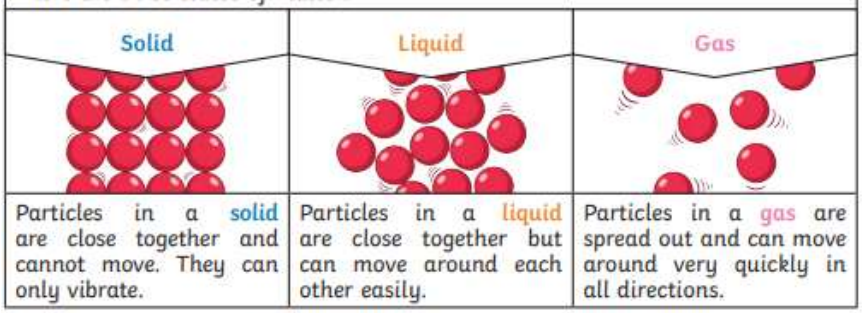
Unit Vocabulary – Join them up with the correct definition once you have learned it,

Solid
Liquid
Gas
particles
melt
freeze
Water vapour
evaporate
condense

Materials which can spread out to fill the container. Have no fixed shape but do have a mass.
Process whereby a solid changes to a liquid.
Materials which take the shape of their container. They can flow or be poured.
Process whereby a gas changes to a liquid.
Process whereby a liquid changes to a solid.
Materials which keep their shape unless a forcse is applied to them.
Process whereby a liquid changes to a gas.
Components of matter.
Water that takes the form of a gas.

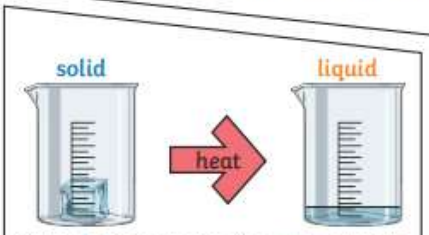
Key Knowledge

There are three states of matter.

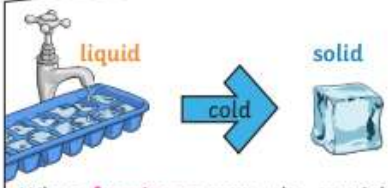


Solid	Liquid	Gas
Particles in a solid are close together and cannot move. They can only vibrate.	Particles in a liquid are close together but can move around each other easily.	Particles in a gas are spread out and can move around very quickly in all directions.

When water and other liquids reach a certain temperature, they change state into a solid or a gas. The temperatures that these changes happen at are called the boiling, melting or freezing point.



If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.



When freezing occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.

Evaporation

Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle evaporating in the warm air.

Condensation

Condensation is when water vapour is cooled down and turns into water. You can see this when droplets of water form on a window. The water vapour in the air cools when it touches the cold surface.

Scientific Enquiries

1. What are solids, liquids and gases?
2. How can we identify solids, liquids and gases based on their properties?
3. What happens when solids, liquids and gases are heated?
4. What happens when solids, liquids and gases are cooled?
5. How does the water cycle link to changes of state?