Science

States of Matter

Year 4

Key Vocabulary

WORD	DEFINITION
solids	A state of matter with a definite shape and volume.
liquid	A state of matter that has a definite volume but no fixed shape. It takes on the shape of its container.
gas	A state of matter that has no fixed shape or volume. It
water vapour	Water in the form of a gas.
melt	To change from a solid to a liquid state by heating.
freeze	To change from a liquid to a solid state by cooling.
evaporate	To change from a liquid to a gas state by heating.
condense	To change from gas to a liquid state by cooling.
precipitation	Any liquid or frozen water that forms in the atmosphere and falls back to the Earth.

Key Knowledge

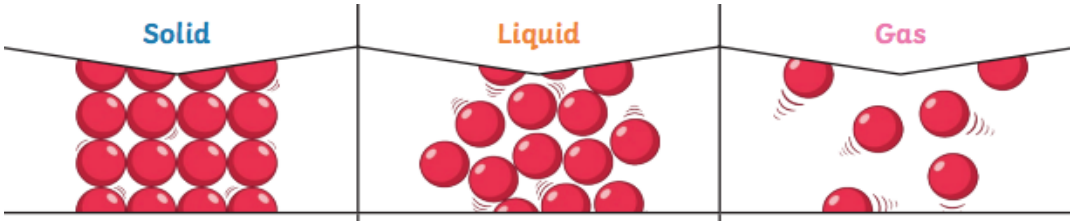
- Things are made up of a material in one of three states of matter: solid, liquid or gas.
- Things are made of particles (tiny building blocks) and that these are organised differently in different states.
- Materials can change state when temperature changes.
- When solids turn into liquids, this is called melting and the reverse process is called freezing.
- When liquids turn into gas, this is called evaporation the reverse process is called condensation.
- The melting point of water is 0ºC and the boiling point is 100ºC
- Water flows around our world in a continuous process called the water cycle.
- Water evaporates within the water cycle when it is heated by the sun. It rises, cools then condenses.

Scientific Influences

Name/Picture	Why significant
 Antoine Lavoisier 1743 - 1794	Most noted for his discovery of the role oxygen plays in combustion. He recognized and named oxygen (1778) and hydrogen (1783).
 Robert Boyle 1627-1691	Boyle discovered that the volume of a gas decreases with increasing pressure and vice versa—the famous Boyle's law
 John Dalton 1766 - 1844	In 1803 he proposed matter is made up of atoms that are indivisible and indestructible.

Water Cycle

States



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.