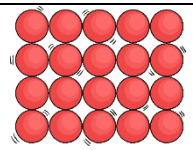
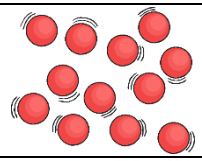
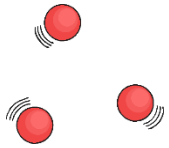
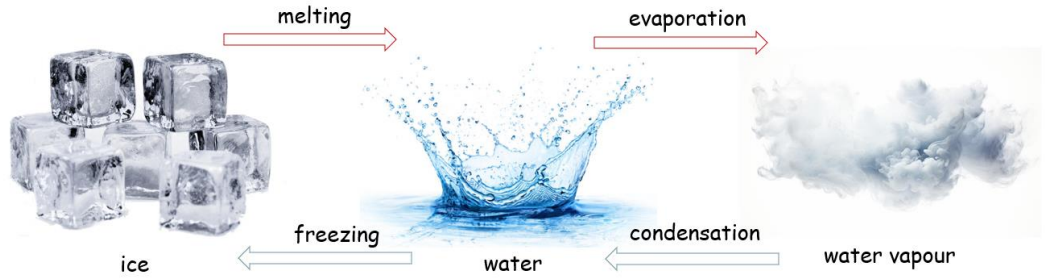
Year 4 Science Knowledge Organiser: States of Matter

The Three States of Matter

State	Particles	Properties	Examples
Solid		Keep their shape unless force is applied to them, e.g. twisting, cutting, stretching Always take up same amount of space	Fabric Sugar Wool Sponge
Liquid		Take the shape of the container they are in, pulled to the bottom by gravity Can flow or be poured	Soup Rain Tea Cream
Gas		Spread out to completely fill a container or room they are in Have weight and can be squashed	Helium Oxygen Carbon dioxide Water vapour

Changing States



Melting	Freezing	Evaporation	Condensation
If a solid material is heated to its melting point, it will start to melt and change state from solid to liquid.	If a liquid material is cooled to its freezing point, it will turn from a liquid to a solid.	When water is heated, it will turn into a gas. This process can be sped up by increasing the temperature.	When water vapour is cooled down by touching a cold surface, it will turn to water droplets.

Key Learning

- Compare and group materials together, according to whether they are solids, liquids or gases.
- Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Other Key Vocabulary

Particles	A tiny amount of matter. All materials are made of particles
State	One of the forms that all inanimate objects will take
Freezing point	The temperature (°C) at which a liquid material freezes.
Melting point	The temperature (°C) at which a solid material melts.

The Water Cycle