Our Learning Keys
States of Matter

Science

Year 4

Autumn 1

Questions

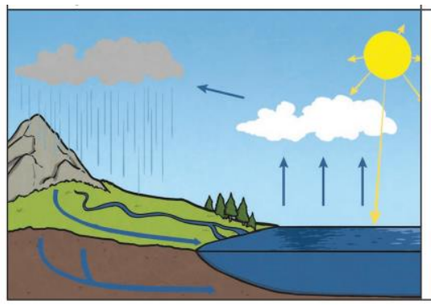
- How do particles behave differently in Solids, Liquids and Gases?
- What happens to particles when the temperature changes?
- How do we know if a material is a solid, liquid or gas?
- At what temperature does water change state into a solid, or a gas?
- What happens in the water cycle?

Vocabulary

heating	raising the temperature of something
cooling	lowering the temperature of something
melting	to change from a solid to a liquid through heating
freezing	to change from a liquid to a solid due to cooling
particles	a tiny amount or small piece
evaporation	to turn from a liquid to a gas (vapour)
condensation	small drops of water which form when water vapour or steam touches a cold surface
precipitation	rain, snow, sleet or dew formed by condensation of water vapour in the atmosphere.

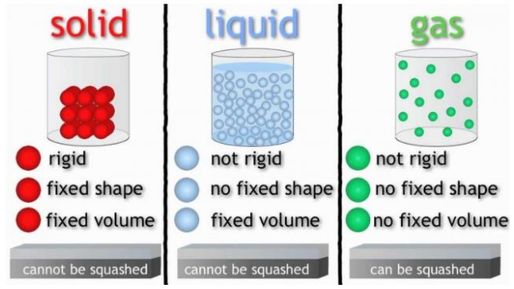
Images

The Water Cycle



1. Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
2. This water vapour rises, then cools down to form water droplets in clouds (condensation).
3. When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (precipitation).

Solids, Liquids and Gases



Facts

- SOLID
  - A solid material always holds its shape and cannot be poured.
  - The particles in a solid are packed closely together in a regular pattern.
  - A solid always takes up the same amount of space.
- LIQUID
  - Liquids hold the shape of the container they are in and can be poured.
  - The particles in a liquid are closely packed in but not in a fixed pattern.
  - Liquid particles can move over each other.
- GAS
  - In the Gas state, particles can escape from open containers.
  - Gases have particles which are spread out and move in all directions.
- Water **freezes** at 0°C and **evaporates** at 100°C.
- The properties of a material depend on what its particles are like. Particles behave differently in a Solid, Liquid or Gas.

Previously...	Now	Next...
In Years 1 and 2, we learnt a little about the common materials and their properties.		In Year 5, we will learn about changes of state (reversible and irreversible) and about separation, filtration. etc.

Links

- Literacy: Writing an explanation text about the water cycle.
- Maths: reading scales.
- Geography: Identifying the effect of the water cycle in different areas.

Doors this will open...

Engineering

Chef

Manufacturing

Chemist

Farming