Pinvin C of E First School Knowledge Organiser

Year 4 - Science

'States of Matter'

Key Knowledge

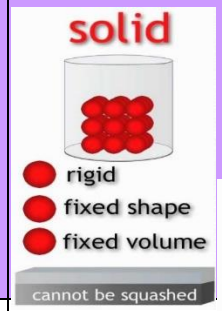
The difference between different **states of matter** is based upon the space and movement of the **particles** within it.
When water and other liquids reach a certain temperature they turn into a solid, liquid or a gas.
The temperature at which this happens is called the **boiling, melting** or **freezing** point.

Key Vocabulary

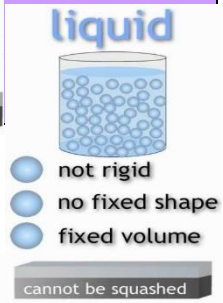
Matter	Any solid, liquid or gas that exists in the universe
Solid	Substance that stays the same shape whether in a container or not
Liquid	Substance that can flow and take on the shape of a container
Gas	Substance that has no fixed shape, like oxygen
Temperature	How hot or cold something is, normally measured in degrees Celsius (°C)
Evaporation	The process of liquid heating and changing into a gas
Condensation	The process of a gas cooling and changing into a liquid
Water Cycle	The process of water being recycled over and over again
Particle	An extremely small unit of matter
Water Vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour

Solids, Liquids and Gases

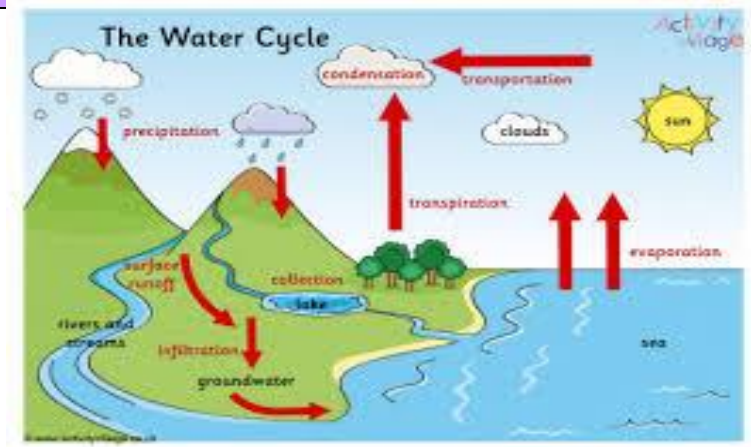
Solids stay in one place and can be held. They do not flow like liquid (some solids like sand or salt can be poured). Solids always take up the same amount of space. They do not spread out like gases.



Liquids can flow or be poured easily. They are not easy to hold. Liquids can their shape depending on the container they are in.



Gases are often invisible. Gases do keep their shape. They spread out and change their shape and volume to fill up whatever container they are in.



Key Objectives

Compare and group materials together, according to whether they are solids, liquids or gases.
Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
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.

What will be our key questions?

- What do the words solid, liquid and gas mean?
- What is the difference between a solid, liquid and a gas?
- Do all liquids behave the same way?
- What is temperature and how do we measure it?
- What is the melting point of chocolate?
- What are the stages of the Water Cycle?
- Do all liquids evaporate?

★★★ States of Matter – Star Steps ★★★

Focus	Small Steps	Comment	
Science: Working Scientifically	I can ask relevant questions.	Self-Assessment : ☺ 😐 ☹	Teacher Assessment: ☺ 😐 ☹
	I can set up simple practical enquiries and carry out a fair test	Self-Assessment : ☺ 😐 ☹	Teacher Assessment: ☺ 😐 ☹
	I can make systematic and careful observations using a range of equipment.	Self-Assessment : ☺ 😐 ☹	Teacher Assessment: ☺ 😐 ☹
	I can take accurate measurements.	Self-Assessment : ☺ 😐 ☹	Teacher Assessment: ☺ 😐 ☹
	I can gather, record, classify and present data in a variety of different ways to help answer questions.	Self-Assessment : ☺ 😐 ☹	Teacher Assessment: ☺ 😐 ☹