Year 4 Science Knowledge Organiser

Golden Thread: Sustainability and Stewardship

Objectives and Sticky Knowledge

Previous Knowledge:

Know how materials can be changed by squashing, bending, twisting and stretching

Land Objectives and Sticky Knowledge:

- Know the temperature at which materials change state.	- Know about and explore how some materials can change state.	- Know the part played by evaporation and condensation in the water cycle.	- Group materials based on their state of matter (solid, liquid, gas).
1. Water turns to ice at 0°C. 2. Water turns to gas at 100°C. 3. Chocolate turns to liquid at 80°C. 4. Aluminium turns to liquid at 659°C.	1. When a solid turns into a liquid it is called melting. The temperature at which a solid material melts is called its melting point. Different materials have different melting points. 2. When a liquid turns into a solid it is called freezing. The temperature at which a liquid material freezes is called its freezing point. Different materials have different freezing points.	1. Condensation: the process of cooling water that turns it from a gas (water vapour) back into a liquid 2. Evaporation: the process of heating water that turns it from a liquid into a gas (this is the water vapour that rises from large bodies of water such as oceans)	1. A solid keeps its shape and can be cut, squashed or torn. 2. A liquid takes the shape of the container it is in and can be poured. 3. A gas spreads out to fill a space and does not have any fixed shape.

Sea:

Links with 'Sustainability and Stewardship' Golden Thread

Links to CST and CTK Values:

Year 4 Science Knowledge Organiser

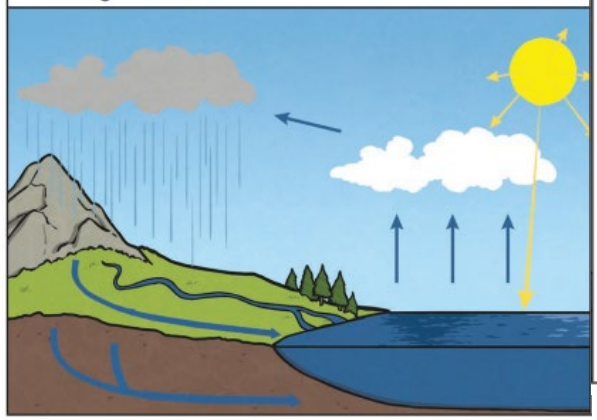
Key Vocabulary

states of matter	Materials can be one of three states: solids, liquids or gases. Some materials can change from one state to another and back again
solids	These are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy. Solids take up the same amount of space no matter what has happened to them.
liquids	Liquids take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured.
gases	Gases can spread out to completely fill the container or room they are in. They do not have any fixed shape but they do have a mass.
water vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour.

Sky Objectives:

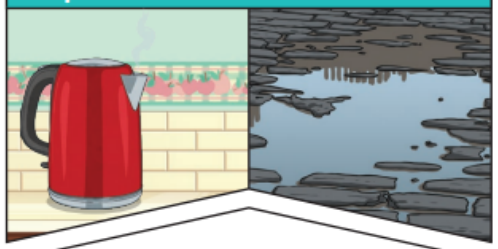
1. Begin to understand which types of enquiry can be used to answer questions.
2. Conduct comparative tests and explain the changes in results.
3. Use concluding remarks to begin to make predictions for future investigations.

Condensation and evaporation occur within the water cycle.



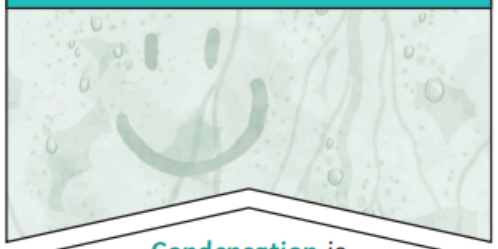
1. Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
2. This water vapour rises, then cools down to form water droplets in clouds (condensation).
3. When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (**precipitation**).

Evaporation



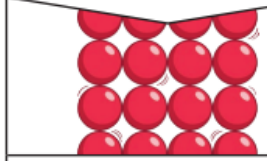
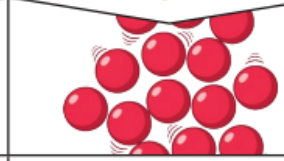
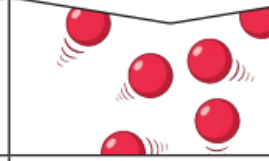
Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle evaporating in the warm air.

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.

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.