



Subject	Science	Theme	States of matter	Term	Spring 1
----------------	---------	--------------	------------------	-------------	----------

What should I already know?
<ul style="list-style-type: none"> - A variety of everyday materials and their simple physical properties - The shapes of some solid objects can be changed by squashing, bending, twisting or stretching - The four main parts of the water cycle (evaporation, condensation, precipitation and collection) – Y3 Geography

Working Scientifically
<p>Make systematic observations, with accurate measurements (cm) <i>(of an evaporating puddle)</i></p> <p>Take accurate measurements using thermometers <i>(of melting and freezing points, and conditions impacting evaporation)</i></p> <p>Conclude: what are the best conditions for evaporation <i>(when should I hang out my washing?)</i></p> <p>Identify changes related to simple scientific ideas – evaporation</p> <p>Use evidence to answer questions <i>(what are the ideal conditions for evaporation?)</i></p>

Enquiries & Investigations
<ul style="list-style-type: none"> - What makes something solid, liquid or gas? Explore everyday materials and develop a simple description of each state (e.g. holds its shape, forms a pool instead of a pile, escapes from an unsealed container) - Can a material change its state? - What are boiling and melting temperatures and can they change? - What factors affect rate of evaporation? When should I hang out my washing? - Make a model water cycle (progression from Y3 Geography)

What should I know by the end of the unit?
<ul style="list-style-type: none"> - That materials can be compared and grouped, according to whether they are solids, liquids or gases - That some materials change state when they are heated or cooled - The temperature at which changes of state occur in some materials, eg water, in centigrade/Celsius (°C) - The part played by evaporation and condensation in the water cycle, and that rate of evaporation is linked to temperature <p>Silver Threads: Process – Changing state is a process caused by adding or removing heat Changes – The state of a substance changes when a certain amount of heat is added. It changes from solid to liquid, then gas. These changes can be easily observed with certain substances Structure – The structure of the particles which make up a substance affects the state Energy – All changes need energy in order to happen</p>

Significant scientific ideas
<p>Materials can change their state (and therefore properties) when they are heated or cooled</p>

Key Vocabulary	
Solid	Materials that keep their shape unless a force is applied to them.
Liquid	Materials that take the shape of their container.
Gas	Materials that can spread out to completely fill the container or room they are in.
Change of state	When a material changes from one state to another.
Particles	Tiny pieces of matter which make up all things
Evaporation	The process when a liquid changes into vapour (a gas), caused by heating.
Condensation	The process when vapour (a gas) changes into a liquid, caused by cooling.
Temperature	The measure of hot or cold something is, often measured in degrees Celsius (°C).
Boiling point	The temperature at which a liquid turns into a gas.
Melting point	The temperature at which a solid becomes a liquid.