

LKS2 chemistry/physics – States of Matter

Key question – How do materials change state?

Vocabulary	Meaning
gas	a substance or matter in a state in which it will expand freely to fill the whole of a container, having no fixed shape (unlike a solid) and no fixed volume (unlike a liquid).
solid	a substance or object that is solid rather than liquid or fluid.
liquid	a substance that flows freely but is of constant volume, having a consistency like that of water or oil.
heat	the quality of being hot; high temperature.
condensation	Condensation is the process where water vapor becomes liquid.
Water cycle	The water cycle is the path that all water follows as it moves around Earth in different states.
temperature	Temperature is a degree of hotness or coldness that can be measured using a thermometer.
evaporate	Evaporation happens when a liquid turns into a gas.
Celsius °C	Celsius (more precisely, a degree Celsius), sometimes called centigrade, is a unit of measurement used in many countries to measure temperature.

States of Matter	
Year 4	<p>Can they compare and group materials together, according to whether they are solids, liquids or gases?</p> <p>Can they explain what happens to materials when they are heated or cooled?</p> <p>Can they measure or research the temperature at which different materials change state in degrees Celsius?</p> <p>Can they describe how materials change state at different temperatures?</p> <p>Can they use measurements to explain changes to the state of water?</p> <p>Can they explain everyday phenomena including the water cycle?</p> <p>Can they record data using diagrams, labels, classification keys, tables, scatter graphs, bar graphs and line graphs?</p> <p>Can they evaluate and communicate their methods and findings?</p> <p>Can they use a range of scientific equipment to take accurate measurements or readings?</p>

Lesson 1 LO: To sort properties of materials.	How do particles behave differently in solids, liquids and gases?
Lesson 2 LO: To investigate gases and explain their properties.	What are the uses of carbon dioxide? How can carbon dioxide be measured?
Lesson 3 LO: To investigate materials as they change state.	What is the correlation between melting and freezing points of materials? What happens to the particles at these points?
Lesson 4 LO: To explain how water changes state.	How many different states of water are there? Can you name them?
Lesson 5 LO: To identify and describe the different stages of the water cycle.	What are the 4 stages of the water cycle? Can you explain the processes?

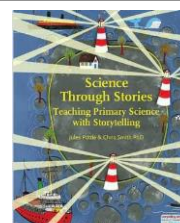
Disciplinary knowledge

Observe
Predict
Sort
Explain
Record
Test
Explore

Key Scientist – Clarence Birdseye



Founder of modern frozen foods



Science concept story:
The Horses of Troy from Science Through Stories