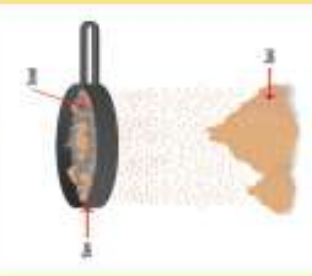
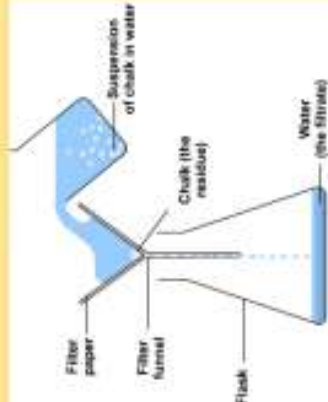
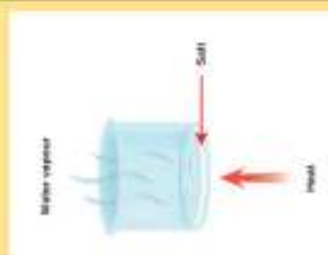


Key Knowledge		Key Vocabulary and Phrases	
Comparing and Grouping Materials		Dissolved	To become incorporated into a liquid so as to form a solution.
Materials can be grouped by their properties (is it hard or soft?) or by more than one of their properties (is it hard and magnetic?)		Separating	The action of moving things apart.
Properties of materials we can compare		Evaporation	When a liquid turns to a gas due to an increase in temperature.
		Properties	A specific quality of something
Properties of materials we can compare		Mixtures and Solutions	
Hard Difficult to scratch, like a metal spoon.	Soft Malleable (easily shaped), like play-doh.	A mixture Where substances are mixed together, but dissolving hasn't taken place. For example, mixing, banana slices, grapes and orange segments to make a fruit salad.	A solution Some substances dissolve in a liquid. When this happens the liquid is called a solution. For example, when coffee granules dissolve in water this makes a solution.
Soluble Can be dissolved, like sugar granules.	Insoluble Cannot be dissolved, like gravel.	We can separate a mixture by sieving and/or filtering	We can separate a solution by evaporation. Because the soluble substance is too mixed into the water, it can't be removed by sieving or filtering.
Transparent Lets all light through, like glass.	Opaque Does not let any light through, like a brick wall.	Sieving - sorting out the big bits from the small bits, e.g. stones from soil.	Evaporation - A liquid evaporates into a gas when it is heated. This removes the liquid.
Electrical conductor Lets electricity pass through easily, like copper wire.	Electrical insulator Does not let electricity flow through easily, like plastic or rubber.	Filtering - separating solid bits from a liquid, e.g. sand from sand and water.	
Thermal conductor Lets heat pass through easily, like a metal saucepan.	Thermal insulator Does not let heat pass through easily, like a wooden spoon handle.		
Magnetic Is attracted to a magnet, like a steel paperclip. Not all metals attract to magnets.	Not magnetic Is not attracted to a magnet, like a wooden ruler.		
Reversible Changes		Separation	
A reversible change is a change that doesn't last forever. For example, water can turn to ice when frozen, but can be turned back to water by heating it. Dissolving, mixing and changes of state are usually a reversible change.	Irreversible Changes Some changes cause new materials and this kind of change is not usually reversible. An irreversible change lasts forever and is usually caused by heat. Example: eggs, flour, butter and sugar heated to make a cake. The original ingredients can't go back to how they started. Some other irreversible changes can be caused by burning.	Sieving 	Filtering 
		Evaporation 	

Key Vocabulary and Phrases – Amend to make appropriate to Materials

ask questions	Use the question words What, where, when why, how
compare and contrast	Look at two or more objects and describe similarities (what is the same) and differences (what is different!)
classify, sort and group	Organise objects by their features (e.g. colour, size, shape)
diagram	A labelled picture
record data	Drawings, scientific diagrams, photos, classification keys, tables, bar graphs and line graphs, writing and numbers are ways to show what I have found out.
reporting and presenting findings	Giving reasons, explaining causes and relationships, explaining results and trusting its accuracy

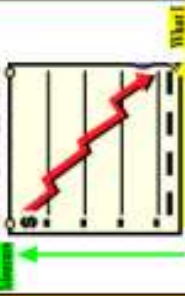
How I could record my findings?

Carroll Diagram
For CLASSIFYING/GROUPING

	Red	Blue
Square		
Triangle		

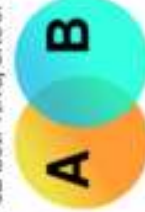
Use this when you want to put objects into categories for having a property or not, e.g. prime/not prime numbers against even/not even (odd) numbers

Line Graph
For FAIR TESTING



Use this if you have continuous (numerical) data for both axes e.g. mass on an elastic band & how long it is or are measuring over time

Venn Diagram
For CLASSIFYING/GROUPING

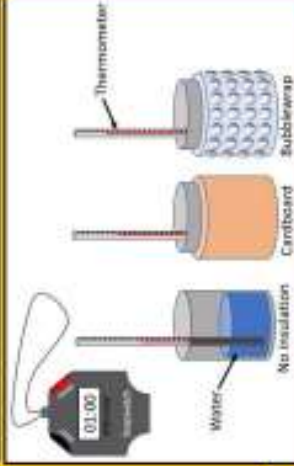


Use this to show how objects are grouped together and any that could be in either group. You can use more than 2 circles or groups, e.g. animals that live on land or on water, with those that do both in the middle

What I could investigate

Compare and group materials based on their properties and suggesting similarities and differences

What material will keep a hot drink warmer for longer?
Test thermal insulation



Observe and compare changes that take place when materials are mixed. Do they create reversible or irreversible changes?

Water, Vinegar and Bicarbonate of Soda



Equipment I could use

Magnet for testing whether materials are magnetic



Filter paper for testing whether materials are soluble



Sieve for separating materials



Circuits for testing electrical conductors and insulators



Thermometers for testing thermal conductors and insulators

