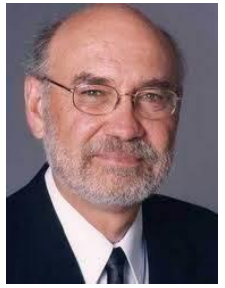
Materials – Knowledge

Vocabulary

Conductor	A material which allows heat or electricity through.
Crystallisation	A natural process separating a solid from a liquid or gas.
Dissolve	When something solid mixes with a liquid and becomes part of the liquid.
Evaporation	The process of turning from a liquid to a gas.
Filtering	When a solid is removed from a liquid.
Gas	An air-like fluid substance which expands freely to fill any space available.
Insoluble	Does not dissolve in a liquid.
Insulator	A substance which does not readily allow the passage of heat or sound.
Irreversible	Cannot be reversed back to its original state.

Liquid	A substance that flows freely like water or oil.
Magnetism	Capable of being magnetised or attracted by a magnet.
Melting	Changing from a solid to a liquid due to heat.
Reversible	Able to be reversed back to its original state.
Saturated	When a substance cannot dissolve any more.
Sieving	The process of separating a solid from a liquid.
Solid	Firm and stable in shape, not a liquid or fluid.
Soluble	Able to be dissolved, especially in water.
Solute	Something that is dissolved in liquid.
Solution	A mixture where a solid has dissolved into a liquid.
Solvent	A liquid in which a solute is dissolved in.
Thermal	Heat.



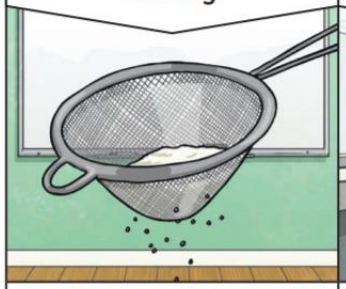
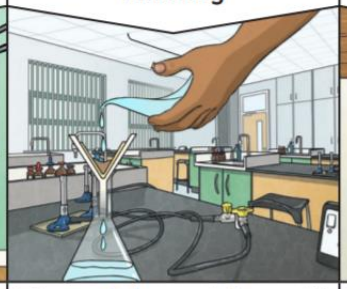
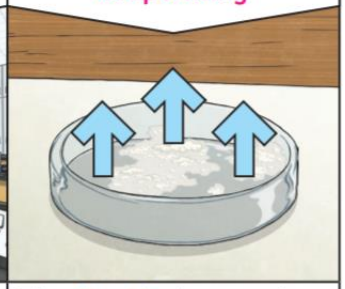
Whilst working at 3M Company, Spencer Silver was trying to make a very strong adhesive to be used in building planes. Instead, he managed to create a very weak adhesive that could be peeled off and re-used.

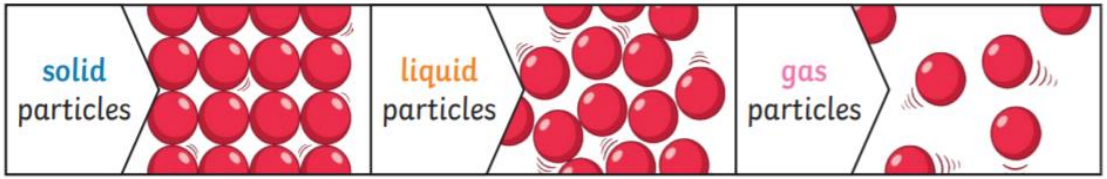
At the time, Silver could not think of a use for this weak adhesive.

Many years later, Silver's colleague Art Fry kept losing the bookmarks in his hymn book. A eureka moment resulted in making an association between Silver's weak glue and his bookmarks falling out. The idea of Post-It notes was created!

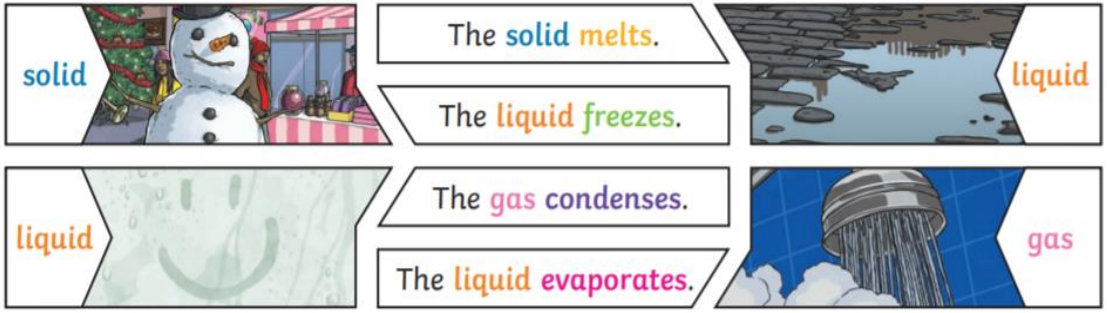
Key Knowledge

Reversible changes, such as mixing and dissolving **solids** and **liquids** together, can be reversed by:

Sieving	Filtering	Evaporating
		
Smaller **materials** are able to fall through the holes in the sieve, separating them from larger particles.	The **solid** particles will get caught in the filter paper but the **liquid** will be able to get through.	The **liquid** changes into a **gas**, leaving the **solid** particles behind.



Changes of State



Materials – Skills – Working Scientifically

National Curriculum

Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

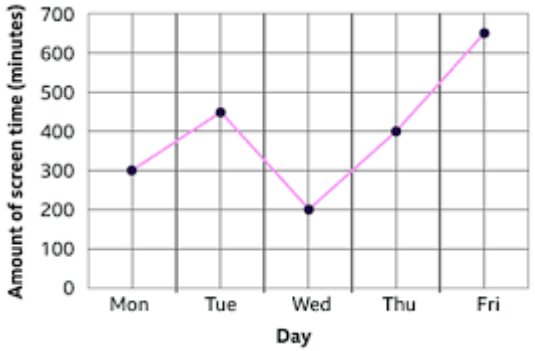
Scientific Equipment

beaker		measuring cylinder	
filter paper		pipette	
funnel		sieve	
jug		stopwatch	
magnet		teaspoon	
materials		thermometer	

Results Table

Type of material	Permeable	Magnetic
Sponge	✓	x
Tinfoil	x	x
Paper clip	x	✓
Filter paper	✓	x

Line Graph



Key Vocabulary

axis	Line graphs consist of two axes: x-axis (horizontal) and y-axis (vertical)
compare	Note similarities and differences between different things e.g. compare different types of materials
control variable	A control variable are variables in an experiment that you keep the same. They remain constant and unchanged throughout the investigation.
dependent variable	A variable whose value depends on that of another. In an experiment – what you measure or observe.
fair test	A fair test is a controlled investigation carried out to answer a scientific question. In a fair test, we only change **one** variable.
independent variable	A variable whose variation does not depend on that of another. In an experiment – the one thing that you change (vary).
line graph	Line graphs are used to track changes over short or long periods of time.
litre/millilitre	Litres are a type of metric unit – mainly used to measure the volume of liquids. 1000 millilitres (ml) = 1l (litre)
repeat readings	We repeat our experiments to check that our results are accurate.