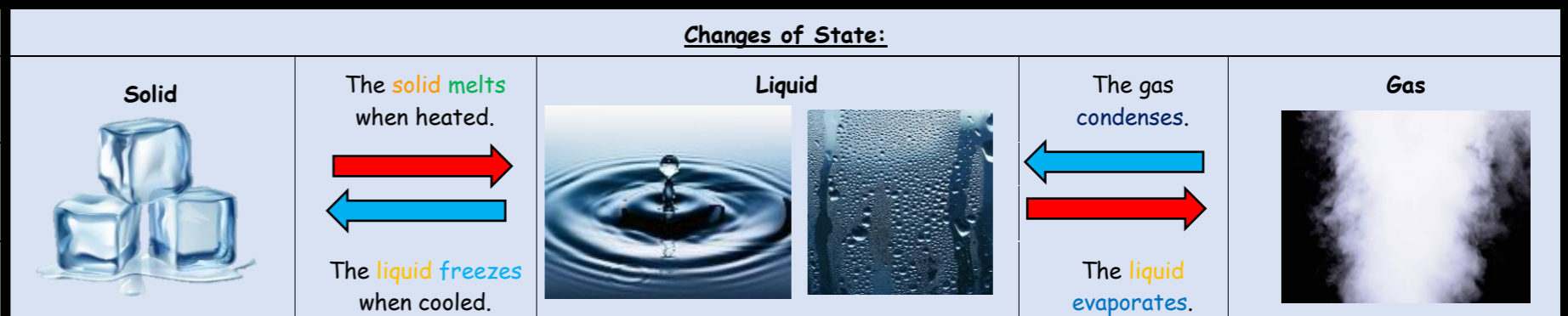


Cunningham Hill Junior School - Science Knowledge Organiser - Year 5 - Materials

Key Vocabulary:		
1	materials	The substance that something is made out of e.g. wood, plastic, metal etc.
2	states of matter	Refers to whether a material is a solid , liquid or gas .
3	solids	Solid particles are very close together, meaning solids hold their shape. E.g. wood, metal, plastic
4	liquids	Liquids can flow and take the shape of the container because the particles are more loosely packed and can move around each other. E.g. water, juice, milk.
5	gases	Gas particles are far apart from each other and are free to move around. A gas fills its container, taking the shape and the volume of the container. E.g. oxygen, helium, carbon dioxide.
6	melting	The process of heating a solid until it changes into a liquid .
7	freezing	When a liquid cools and turns into a solid
8	evaporating	When a liquid turns into a gas or a vapour
9	condensing	When a gas such as water vapour cools and turns into a liquid .
10	conductor	A conductor is a material that heat or electricity can easily travel through. Most metals are both thermal conductors (conduct heat) and electrical conductors (conduct electricity)
11	insulator	An insulator is a material that does not let heat or electricity travel through them. Wood and plastic are both thermal and electrical insulators .
12	solution	A solution is made when solid particles dissolve and are mixed with liquid particles.
13	soluble	Materials that will dissolve are known as soluble . Materials that will not dissolve are known as insoluble. E.g. Sugar is soluble and sand is insoluble.
14	dissolve	When solid particles break up and mix with a liquid .
15	suspension	The mixture of a liquid and an insoluble solid is called a suspension.



Reversible Changes:

Reversible changes change the state of a **material**, but can be undone. They are reversible.

Sieving

Smaller **materials** are able to fall through the holes in the sieve, separating them from the larger particles. They can be mixed again.

Evaporating

The **liquid** changes into a **gas**. The **gas** can be cooled and **condensed** back to a **liquid**.

Filtering

The **solid** particles will get caught in the filter paper but the **liquid** will be able to get through. The **solid** and **liquid** can be mixed again.



Irreversible Changes:

Irreversible changes change the state of a **material** and cannot be undone. They are irreversible.

Irreversible changes often results in a new product being made from the old **materials** (reactants). For example, burning wood produces ash. Mixing vinegar and milk produces casein plastic.

Irreversible changes often make new and useful **materials**.

In some cases the new **materials** made are **gases** and identify some evidence for the production of **gases** (e.g. vigorous bubbling)

Dissolving:

Some **materials** will **dissolve** in **liquid** to form a **solution**, and can be recovered from a **solution** by **evaporating** the **liquid** which will leave the **solid** particles behind.

• Although it is not possible to see a **dissolved solid**, it remains in the **solution** and can pass through filter paper. There are factors that affect the rate at which a **solid** **dissolves** including: heat, substance size and the speed of movement of the particles (e.g. stirring).

Grouping Materials:

Materials can be grouped by a range of different properties.

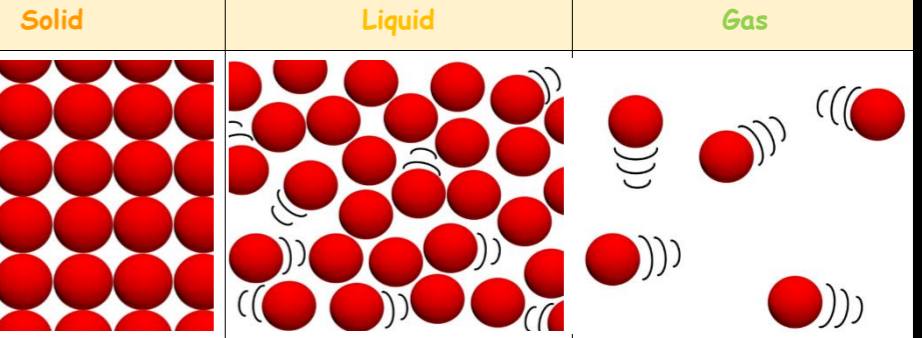
Magnetic / non magnetic **Soluble / insoluble**



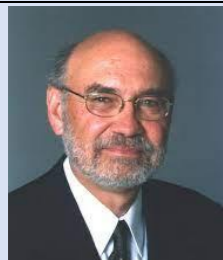

impermeable / permeable **flexible / inflexible**



Different States Of Matter:



Scientist Study:

	Spencer Silver Invented the glue for sticky notes in 1968.		Ruth Benerito Invented wrinkle-free cotton in 1958.
---	--	---	---

