

YEAR 5 PROPERTIES AND CHANGES OF MATERIALS KNOWLEDGE ORGANISER

KEY VOCABULARY AND SPELLINGS

Soluble – able to be dissolved, especially in water

Insoluble – cannot be dissolved, especially in water

Dissolve – when something solid mixes with a liquid and becomes part of the liquid

Solution – is made when one substance dissolves into another

Reversible change – can be reversed back to its original state

Irreversible change – cannot be reversed back to its original state

Transparent – allows light to pass through

Thermal conductor - a material or device which allows heat to carry through

Electrical conductor – a material or device with allows electricity to carry through

Magnetic – capable of being magnetised or attracted by a magnet

COMPARING AND GROUPING - Materials can be compared and grouped together on the basis of their properties including:

- **Hardness** – how hard or soft a material is
- **Solubility** – whether a material can dissolve
- **Transparency** – whether it allows light to pass through
- **Conductivity** (electrical or thermal) – whether it allows heat or electricity to carry through
- **Response to magnets** – whether it is magnetic

DISSOLVING - Sometimes when a solid (solute) is mixed with a liquid (solvent) it will dissolve to form a solution e.g. dissolving sugar in hot tea.

The solid seems to disappear in the solution but it is still there it has just become part of the liquid.

A soluble material can dissolve however an insoluble material cannot dissolve.

PARTICLE ARRANGEMENT

Solid – particles packed closely together



Liquid – particles have some space to move

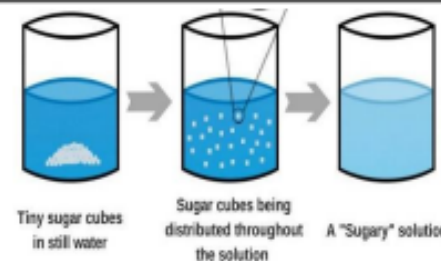


Gas – particles are free to move



REVERSIBLE AND IRREVERSIBLE CHANGES

REVERSIBLE	IRREVERSIBLE
Dissolving sugar in water	Toasting bread
Freezing water	Cooking a cake
Melting chocolate	A candle melting



Tiny sugar cubes in still water

Sugar cubes being distributed throughout the solution

A "Sugary" solution

SEPARATING MIXTURES

SIEVING – a mixture of different sized solid particles can be separated with a sieve.



FILTERING – an insoluble solid can be separated from a liquid when passed through a filter. The liquid passes through the solid particles are trapped on the filter.



EVAPORATING – if a solution is boiled (heated) the water will evaporate into gas and the solid will be left behind.

