

# Year 5 Materials Knowledge Organiser



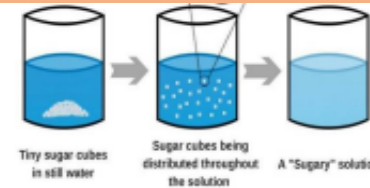
## Star Vocabulary

Thermal conductor	A material that lets heat travel through it.
electrical conductor	A material that lets electricity pass through it
insulator	Materials that do not conduct heat or electricity.
material	Any substance that has a name.
insoluble	When a material is put into water and it stays solid.
reversible	When materials can change back to how they were before the reaction took place.

Compare and group materials together, according to whether they are solids, liquids, or gases. (Y4 - States of matter)

Chemical reactions as the rearrangement of atoms. (KS3)

**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.

## 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.



**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

## 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

## Progression

What makes the property of a material change?

When are changes in materials irreversible?

Can I compare and group together everyday materials on the basis of their properties?

Which materials dissolve in liquid to form a solution?

How does heating and cooling a material affect its state?

Can I give reasons based on evidence from comparative and fair tests, for the uses of everyday materials?