Catholic Primary Schools of Waveney Valley

Science – Chemistry - Class 4 - Properties and changes of materials

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 based on 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

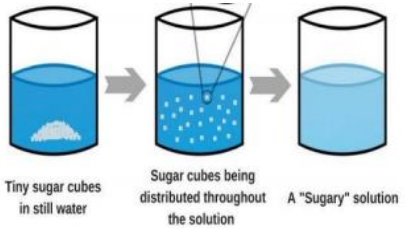
Gas - particles are free to move 

REVERSIBLE AND IRREVERSIBLE CHANGES

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

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.