Properties of materials Knowledge oragniser

KEY VOCABULARY AND SPELLINGS

Solubility – A chemical property referring to the ability for a given substance, the solute, to dissolve in a solvent.

Conductivity – A material's ability to conduct electricity.

Transparency- Transparency is the quality of being easily seen through.

Thermal- Something that is thermal is hot, retains heat, or has a warming effect.

Filtering- To filter a substance means to pass it through a device, which is designed to remove certain particles.

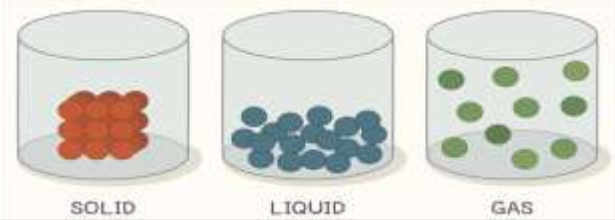
Melting- Melting is a physical process that results in the transition of a substance from a solid to a liquid.

Separate – Separate, part, and dissolve mean to break into parts or keep apart.

Thermal evaporation- Something that is thermal is hot, retains heat, or has a warming effect.
Evaporation is the process of a substance in a liquid state changing to a gaseous state due to an increase in temperature and/or pressure.

Particle arrangement

Solid – particles packed closely together
Liquid – particles have some space to move
Gas – particles are free to move



Comparing and grouping materials

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

Reversible and irreversible changes

Irreversible changes, like burning, cannot be undone. Reversible changes, like melting and dissolving, can be changed back again.

EXAMPLES

Reversible	Irreversible
Dissolving sugar in water.	Toasting bread
Freezing water	Cooking a cake
Melting chocolate	A candle melting

Mixtures can be separated out by methods like filtering and evaporating. A change is called irreversible if it cannot be changed back again.

A cooked egg cannot be changed back to a raw egg again. Mixing substances can cause an irreversible change. For example, when vinegar and bicarbonate of soda are mixed, the mixture changes and lots of bubbles of carbon dioxide are made. Burning is an example of an irreversible change.