

I learned a bit about this in
Year 1, Year 2 and Year 4!

Year 5 Science Knowledge Organiser

Properties and Changes of Materials



Key Knowledge

Different materials are used for different things. They will be selected for specific jobs based on their properties. Common properties of materials include: **magnetism, electrical conductivity, hardness, thermal conductivity, solubility and transparency.**

Some substances are able to **dissolve** in liquid. This means that they have mixed together to create a **solution**. When something dissolves, it does not disappear. It can **reversed** so it returns to its former state.

Substances that dissolve are called **soluble**. If a substance does not dissolve in liquid, it is called **insoluble**.

Dissolving is not the same as melting. Melting is a change of state (going from solid to liquid using heat) but dissolving does not have to include heat and breaks the substance into smaller particles.

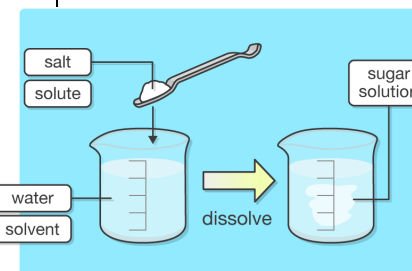
Substances can be **separated** in different ways. This means sorting a mixture out into its separate parts. We can use **filtering, evaporating and sieving** to separate substances.

Some changes to some materials are **reversible**. This means we can get them back to the way they were before. This includes processes like **dissolving, melting, freezing and mixing**.

Some changes cannot be reversed. These are called **irreversible changes**. This can happen with a chemical reaction or when a new substance is created. Irreversible changes can occur through **burning, heating (or cooking), rusting or mixing**.

Key Vocabulary

Magnetism	When a material is attracted to a magnet.
Electrical Conductivity	When a material allows electricity to flow through it easily. Metals are usually good conductors.
Hardness	Materials that are not easily scratched or bent.
Thermal Conductivity	Materials that allow heat to pass through them easily. Metals are often good thermal conductors.
Solubility	When something can be dissolved in a liquid (often water).
Transparency	When something is easy to see through.
Substance	A solid, liquid or gas with its own properties.
Filter	To separate particles of solid from a liquid.
Evaporate	When liquid slowly turns into a gas.
Sieve	Separating solids using a mesh which allows small particles to get through but not larger ones.



Reversible and Irreversible Changes



Filtering

- Brewing coffee
- Cleaning a swimming pool
- Vacuum Cleaning



Evaporating

- Body sweat
- The water cycle
- Salt / crystal extraction



Sieving

- Removing impurities during cooking
- Sieving sand during building
- Mining for minerals

