

Key Vocabulary:

Melting – is the process of changing a solid into a liquid, usually by applying heat

Dissolving – A way of mixing a solid and a liquid. When a solid dissolves in a liquid it creates a solution

Processes – The different techniques that can be used to separate mixtures

Solution – What is created when a solid solves in a liquid

Reversible Changes – A change that can be reversed/changed back again. Melting and heating are examples of reversible changes

Irreversible Changes – A change that cannot be changed back again. Burning or mixing a liquid with bicarbonate of soda are examples of irreversible changes

Solubility – Degree to which a substance dissolves in a solvent to make a solution



Holy Family Halewood Year 5 & 6 Science Changes of Materials



Learning Objectives:

- To explain the difference between melting and dissolving and identify materials which will dissolve in water
- To investigate the rate of dissolving
- To identify different ways materials can be mixed together and know when to use which processes to separate mixtures
- To describe how to recover a substance from a solution by separating different mixtures
- To carry out a variety of investigations involving reversible and irreversible changes

Separating Mixtures:

SIEVING – A way to separate two solids of different sizes (e.g. flour and raisins).

FILTRATION – A mixture of liquids and solids which haven't dissolved can be filtered using paper with tiny holes (e.g. sand and water).

EVAPORATION – A solid dissolved in a liquid (solution) can be heated. Liquid evaporates and leaves behind the solid (e.g. salt and water solution).

MAGNETISM – Metal attracts to the magnet, leaving behind the other solid (e.g. paper clips and matchsticks).

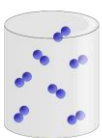


Three States of Matter:

GAS: particles far apart and randomly arranged / move around

LIQUID: particles close but randomly arranged / move around

SOLID: particles very close together / vibrate around a fixed position



Gas



Liquid



Solid

Examples

Steam (water vapour)
Hydrogen
Carbon Dioxide
Oxygen

Examples

Water
Milk
Washing up liquid
Juice

Examples

Ice
Wood
Glass
Diamond

Reversible & Irreversible Changes:

Reversible

Ice (melts into water) > Water (evaporates into steam) > Steam (condenses into water) > Water (freezes into ice) >

Irreversible

Cooking an egg



Burning wood



DISSOLVING

Dissolving is when the particles of solids mix with particles of liquids, often appearing like it has disappeared but it has dissolved in the liquid to make a transparent solution (e.g. mixing sugar into water). It does not always need heat to occur. If a material does not dissolve it is insoluble. If it does, it is soluble.

MELTING

Involves only solids which change into a liquid due to heat. They stay as the same material (e.g. ice to water).

