

Year 5: Properties and Changes in Materials

DISSOLVING, FILTERING, SIEVING, and EVAPORATION:

DISSOLVING

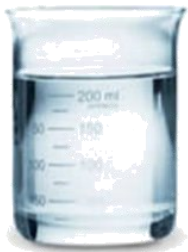
In some solid materials the bonds between particles break when surrounded by a liquid.

This allows the liquid to absorb the solid.

When this happens the solid is called a solute; the liquid is called a solvent and the result is a solution.



SOLUTE
Substance dissolving



SOLVENT
Liquid the solute dissolves in



SOLUTION
Solute dissolved in solvent

When the solid dissolves in a liquid, it is described as being soluble in that solvent; when it cannot it is insoluble.

An amount of solvent can only absorb a certain amount of solid before not more can be absorbed and it is known as being saturated.

EVAPORATION

When a solvent is evaporated from a solution, the original solute is left behind.

The remaining solid will often form crystals - the slower the evaporation, the bigger the crystals that will be formed.



FILTERING

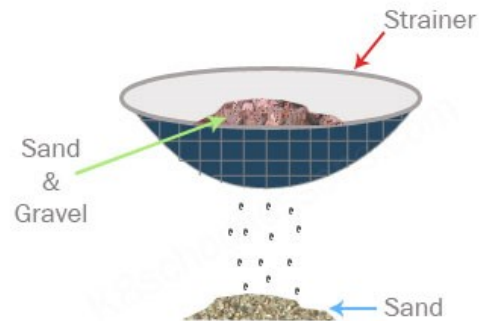
Filtering allows solid and liquid to be separated.



SIEVING

Sieving is a way of removing larger objects, that have not dissolved, such as stones, from a solution.

Sieving is also a way of solids made up of different sized parts being separated.

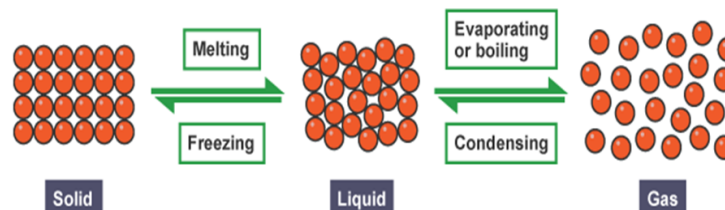


PROPERTIES OF MATERIALS

Materials can be sorted in a variety of ways based on their properties.

Materials' different properties can be tested in a variety of ways.

The various properties of materials make them suitable for a given function.



KEY VOCABULARY:



CHEMISTRY: the branch of science concerned with substances



CRYSTALLISATION: the process by which a solid forms. The atoms are highly organised.



DISSOLVE: when a substance is mixed with a liquid and the substance disappears



FILTERING: a process used to remove dirt or other solids from liquids or gases.



INSOLUBLE: impossible to dissolve, especially in a given liquid.



IRREVERSIBLE: impossible to reverse, turn back, or change.



PARTICLE: tiny amount or small piece.



SATURATION: the extent to which something is dissolved or absorbed compared with the



SIEVE: a utensil consisting of a wire mesh held in a frame, used for straining solids from liquids.



SOLUBLE: able to dissolve



SOLUTION: a mixture that contains two or more substances combined evenly.



SOLVENT: able to dissolve other substances.



THERMAL: relating to or caused by heat or by changes in temperature

REVERSIBLE CHANGES:

Reversible

- ✓ States of matter
- ✓ Solid + Liquid
- ✓ Solid + Solid
- ✓ Soluble solid + Liquid

Irreversible

- ✗ Burning
- ✗ Rusted metals
- ✗ Heating food
- ✗ Mixed ingredients

A reversible change is one that can be reversed.

Examples are mixing, dissolving, and changes of state where no chemical reaction takes place.

An irreversible change is one that cannot be reversed.

Examples are when chemical reactions take place, e.g. burning, boiling an egg, baking etc.