

# Year 5: Properties and Changes in Materials

## DISSOLVING, FILTERING, SIEVING, and EVAPORATION:

### DISSOLVING

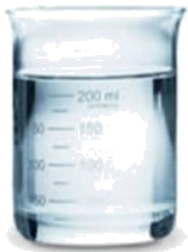
In some solid materials the bonds between particles break when surrounded by a liquid.

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

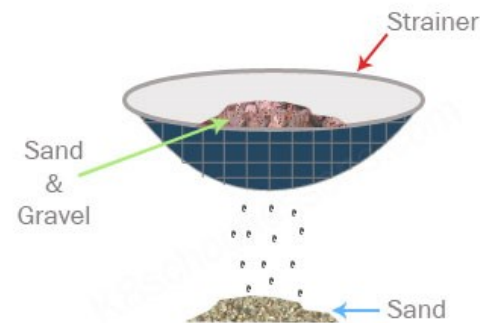
Filtering allows solid and liquid to be separated.



### 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

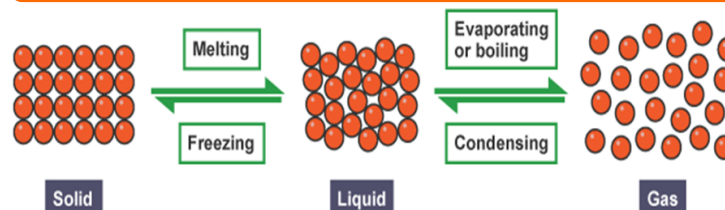
Some materials are thermally conductive, which means heat travels effectively through them.

Some materials are electrically conductive which means that electricity travels effectively through them

Some materials are magnetic

Materials' different properties can be tested through acting upon them, including testing to find whether materials are magnetic or thermally electrically conductive.

The various properties of materials make them suitable for given functions



## KEY VOCABULARY:



**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



**FILTER:** 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 maximum possible



**SOLUBLE:** able to dissolve



**SOLUTE:** a liquid containing a dissolved substance



**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.