

Key facts

Materials can be grouped on the basis of their properties and through tests analysing their hardness, permeability; flexibility, solubility, transparency, conductivity (electrical and thermal), and response to magnets:

Know that some materials will dissolve in liquid to form a solution.

You can recover a substance from a solution by evaporation of the liquid.

Some materials will not dissolve.

A material that dissolves is called a solute, the liquid it is dissolved in is a solvent. The resulting mixture is a solution.

A solution is saturated when no more solid will dissolve in it

Mixtures can be separated through filtering, sieving and evaporating. Water is purified with these methods.

Materials have different purposes depending on their properties eg: metal is a good thermal conductor, wood a useful thermal insulator; plastic is light, cheap and non-permeable

Dissolving, mixing and changes of state such as evaporation, melting and freezing (solidification) are reversible changes (physical changes)

Chemical changes can be created by burning, mixing or heating

Did you Know?

- ✓ Baking involves chemical changes that are irreversible.
- ✓ Chemical changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda or in cooking eg: pancakes, making omelettes, cooking pasta or baking bread.

Changes of materials



Key words:

conductor	A substance or material that allows electricity to flow through it.
dissolve	The process where a soluble substance is added to a solvent to form a solution.
filter	The process of separating particles from a liquid.
insoluble	A solid that will not dissolve in a solvent even after mixing. Eg. Sand and water
irreversible	A change that cannot be changed back to its original state.
mixture	A combination of two or more substances/materials.
reversible	A change that can be changed to its original state.
soluble	A substance that dissolves in a liquid is soluble.
solution	A mixture of two or more substances – a solute and a solvent.
thermal insulator	Materials that do not transfer thermal energy easily.

Exciting books/ web links:



Parents as partners:

Help your child to investigate materials through baking buns.

How many different types of material can you identify around your home?

How many materials can you find that dissolve in a liquid?