

Subject Specific Vocabulary

Conductor	Material that heat or electricity can pass easily through. Most metals are thermal conductors (heat) or electrical conductors (electricity).
Insulator	Material that does not let heat or electricity travel through them. Wood and plastic are both insulators.
Materials	The substance that something is made out of.
Dissolve	To mix completely with a liquid.
Solution	A mixture of 2 or more substances that is evenly mixed.
In/soluble	Soluble — disappears in water Insoluble — stays solid in water
Rust	Crumby, brown material caused by reaction between iron, water and oxygen.
Sieve	A utensil with fine holes to separate solids and liquids
Change of state	When a substance changes from being a Solid to a Liquid or to a Gas
Mixture	Where 2 materials are together but can be separated through filtering, decanting or sieving
Filter	Using paper or another material to separate a liquid from an undissolved solid.
Reversible/Non Reversible	Where a change in state can be changed back
Burning	Using flames and/or heat to change a material.

Sticky Knowledge

Materials have different uses depending on their properties and state (liquid, solid, gas).

Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment.

Mixtures can be separated by filtering, sieving and evaporation.

Some changes to materials such as dissolving, mixing and changes of state are reversible, but some changes such as burning wood, rusting and mixing vinegar with bicarbonate of soda result in the formation of new materials and these are not reversible.

Year 5— Properties and Changes of Materials

Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.

Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.

Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.

Demonstrate that dissolving, mixing and changes of state are reversible changes.

Explain that some 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.

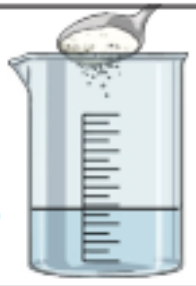
(National Curriculum, 2014)



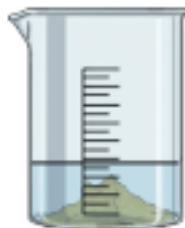
Dissolving

A solution is made when **solid** particles are mixed with **liquid** particles. **Materials** that will dissolve are known as soluble. **Materials** that won't dissolve are known as insoluble. A suspension is when the particles don't dissolve.

Sugar is
a soluble
material.



Sand
is an
insoluble
material.



School Values

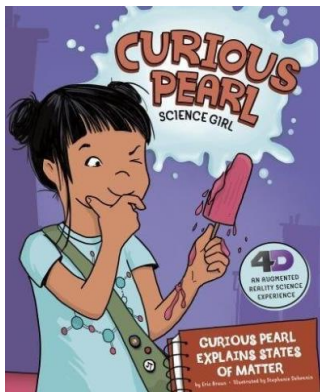
Responsibility

Carrying out investigations sensibly.

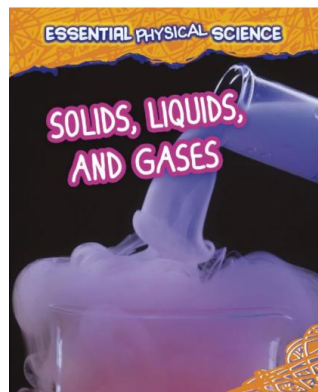
Happiness

Completing practical work

Books you could read if you like this topic



Curious Pearl -
Eric Pearl



Solids, Liquids
and Gases

Website you could visit if you like this topic

DK for kids

<https://www.dkfindout.com/uk/science/solids-liquids-and-gases/changing-states/>

Bitesize

<https://www.bbc.co.uk/bitesize/topics/zcvv4wx>

Kids Britannica

<https://kids.britannica.com/kids/article/materials/476293>