Upper Key Stage 2: Reversible and Irreversible changes.

Key Vocabulary	
dissolved	When a substance is mixed with a liquid and the substance has disappeared.
solution	A mixture that contains two or more substances combined evenly.
insoluble	A substance that will not dissolve.
filter	To remove dirt or other solids from liquids or gases. A filter can be made of paper, charcoal, or other material with tiny holes in it.
sieve	A utensil with meshes or holes to separate finer particles from coarser ones or solids from liquids.
evaporate	To turn from liquid into gas (vapour).
condense	Turning water vapour or steam back into a liquid (water).
melting	To change from a solid to a liquid state through heat or pressure.
reversible	Able to turn or change back.
Irreversible	Not able to turn or change back.
new material	When a chemical reaction takes place to create a new material.
burning	An irreversible chemical process.
rusting	An irreversible oxidation process between iron and water.
mixture	A substance made by combining two or more different materials in such a way that no chemical reaction occurs.

How can materials be separated?

Filtering	Sieving	Evaporating
To remove dirt or other solids from liquids	A utensil with meshes or holes to separate finer particles from coarser ones or solids from liquids	To turn from liquid into gas (vapour)
		

Leo Baekeland

Leo Baekeland (born November 14, 1863, Ghent, Belgium—died February 23, 1944, Beacon, New York, U.S.) was a U.S. industrial chemist who helped found the modern plastics industry through his invention of Bakelite, the first thermosetting plastic (a plastic that does not soften when heated).

Baekeland's search, begun in 1905, for a synthetic substitute for shellac led to the discovery of Bakelite, a condensation product of formaldehyde and phenol that is produced at high temperature and pressure. Though the material had been reported earlier, Baekeland was the first to find a method of forming it into the thermosetting plastic. Baekeland received many honours for his invention and served as president of the American Chemical Society in 1924.

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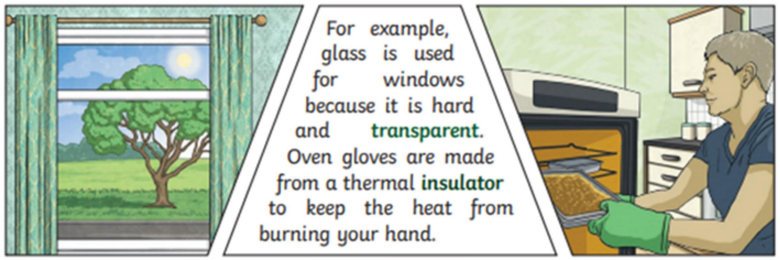
Materials

Different materials are used for different jobs based on their properties. Properties such as: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity and transparency. Can you think of any others?



Mixing materials – Dissolving

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.

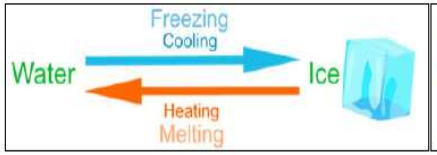
Sand is an insoluble material.

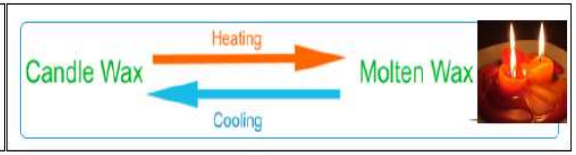
Reversible and Irreversible

Irreversible changes often result in a new product being made from the old materials (reactants). For example, burning wood produces ash. Mixing vinegar and milk produces casein plastic.

What are reversible changes?

Reversible changes are changes that can be undone or reversed.





What are irreversible changes?

Irreversible changes are changes that **cannot** be undone or reversed.