Grange Park Primary School Year 5 Spring 2 Science

Properties and Changes of Materials

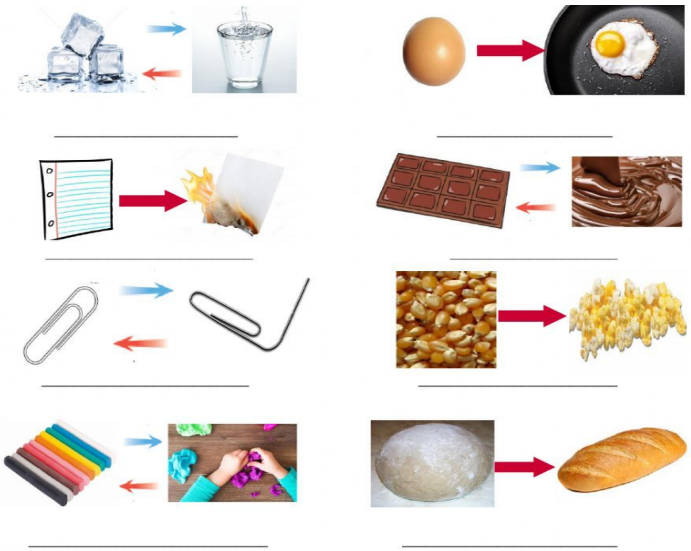
Significant Scientist

Dr Frances Arnold

Dr. Frances Arnold studies chemical reactions and new materials. She explores how materials change under different conditions and develops new substances for medicines and energy. Her work shows how understanding material properties can solve real-world problems.

Enquiry Skills

- Observing over time
- Grouping and classifying
- Fair testing
- Pattern seeking



Key Knowledge

When the particles of a solid mix with the particles of a liquid, they either combine with the liquid and the result is a solution (this is called dissolving and we say the solid is soluble) or the particles do not mix or dissolve. We say the solid is insoluble.

Some materials can be separated after they have been mixed based on their properties - this is called a reversible change.

Some methods of separation include the use of a magnet, a filter (for insoluble materials), a sieve (based on the size of the solids) and evaporation, e.g. The Water Cycle.

Melting and heating are examples of reversible changes.

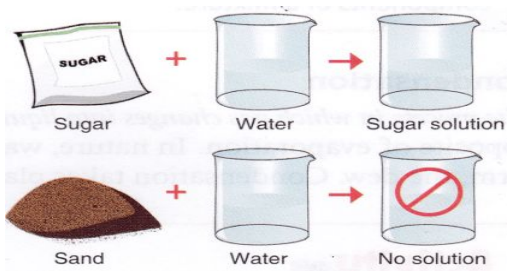
A filter can be made of paper, charcoal or other material with tiny holes in it.

When a mixture cannot be separated back into original components, it is called an irreversible change.

Burning or mixing a liquid with bicarbonate of soda are examples of irreversible changes.

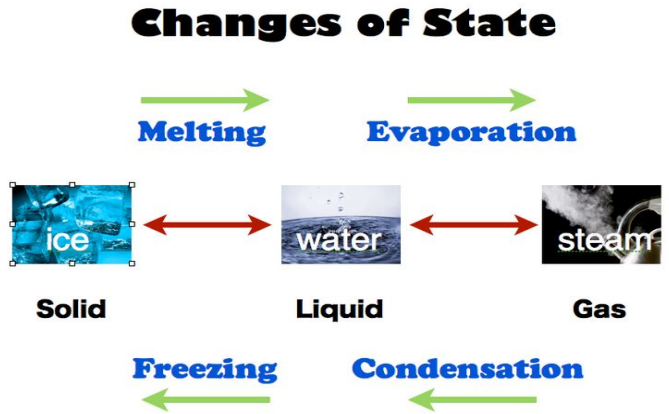
Working Scientifically Skills

- Plan
- Measure
- Fair test
- Report data – scientific diagrams, labels, bar graphs and line graphs.
- Present – conclusions, casual relationships, explanations.



Key Vocabulary

dissolve	When a substance is mixed with a liquid and becomes incorporated into the liquid so as to form a solution.
soluble	Able to be dissolved.
insoluble	Impossible to dissolve.
solution	A mixture that contains two or more substances combined.
filter	A device used to remove impurities or other particles from liquids or gases.
evaporate	To turn from liquid into gas; pass away in the form of vapour.
reversible change	A change that can be undone or reversed. When you can get back the substances the reaction started with.
irreversible change	A change that cannot be changed back again. New materials are formed from a change.



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