

Science: Materials and their Properties

Year 5 Spring 2

Key Vocabulary

Thermal insulator	Thermal insulation refers to the many ways we attempt to inhibit the transfer of heat from one object to another.
Thermal conductor	Thermal conductors are materials that transfer thermal energy easily.
Dissolve	Become or cause to become incorporated into a liquid so as to form a solution.
Soluble	Able to be dissolved, especially in water.
Solution	A liquid mixture in which the minor component (the solute) is uniformly distributed within the major component (the solvent).
Insoluble	Incapable of being dissolved.
Reversible	Capable of being reversed so that the previous state or situation is restored.
Non-reversible	Not able to be undone or altered.
Burning	On fire.

Scientific Concepts

Changes

The act of something becoming something different.

Processes

A series of actions or steps taken in order to achieve a particular end. The process of increasing in size.

Comparison

To compare two or more things, including their similarities and differences.

Scientific Knowledge

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.

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.

Why don't you...

Create a picture of a new style home? Can you use alternative materials to the current ones?

Go through your kitchen cupboards. Which items would reverse back to their original state after being heated?

Website Links

<https://www.bbc.co.uk/bitesize/topics/zjty4wx/articles/zpbdpbk>

<https://www.stem.org.uk/resources/community/collection/12742/year-5-properties-materials>

Enquiry Questions

How many things in our room are opaque?
What is the most popular property of a material?

Can we reverse all changes to materials?

How many things can you name that will change from a solid to a liquid?

How many materials can you name that will change from a liquid to a solid?

What does dissolving mean?

What is a chemical reaction?

What is the difference between reversible and irreversible changes?

How many changes can you list that are reversible?

If I put sand in my tea instead of sugar can I get the sand out?

Scientific Skills

Use different ideas and suggest how to find something out.

Make and record a prediction before testing.

Plan a fair test and explain why it was fair.

Set up a simple fair test to make comparisons.

Obtaining and presenting evidence.

Measure using different equipment and units of measure.

Describe what they have found using scientific words.

Make accurate measurements using standard units.

Considering evidence and evaluating.

Use a range of equipment (including a data-logger) in a simple test.