



Properties and Materials

SCIENCE KNOWLEDGE ORGANISER Year 5 Autumn Term

Substantive Knowledge

- Materials have different uses depending on their properties (e.g. hardness, transparency, thermal conductivity) and state (liquid, solid, gas).
- Some materials can be dissolved in liquid to form a solution.
- Some changes can be reversed and some can't - reversible and irreversible change.
- Some mixtures can be separated by filtering, sieving and evaporation.
- Indicators that something new has been made are: The properties of the material are different (colour, state, texture, hardness, smell, temperature).
- Electrical conductivity is the ability of a material to transfer electrical current from one point to another.
- Thermal conductivity is the ability of a material to transfer heat from one place to another
- An insulator is a material that can be used to stop or slow the flow of heat or electrical current.
- Some materials are magnetic and they can be used as a magnet or be affected by a magnet.

Key Questions

- How can these materials be classified?
- What are mixtures?
- What does it mean to dissolve something?
- Are all materials dissolvable? How could we test this?
- What method of separation can be used to separate ... from ...?
- How can you tell if a change is reversible or irreversible?
- What is your understanding of the term, 'conductivity'?
- What is the difference between thermal and electrical conductivity?

Key Vocabulary

insulator	A material which does not easily allow heat and/or electricity to pass through it.
conductor	A material that allows electricity or heat to pass through it easily.
magnetism	An invisible force or field that causes objects to attract or repel one another.
mixture	A physical combination of two or more substances that aren't chemically joined.
dissolve	The process that occurs when a solute is added to a solvent and the solute disappears e.g. sugar in water.
solution	A mixture of two or more substances that stays evenly mixed.
soluble	Capable of being dissolved in a liquid.
insoluble	Incapable of being dissolved in a liquid.
reversible	A change where no new materials are created, and the original materials can be recovered.
Irreversible	A change where new materials are created, and the original materials cannot be recovered.