Castlefield School - Science

Topic: Properties & Changes of Materials (1)	Year: Five	Theme: Properties & Changes of Materials	Strand: Chemistry

Key Concepts

What are thermal insulators and conductors?

- Materials which are good thermal conductors allow heat to move through them easily.
- Thermal conductors are used to make items that require heat to travel through them easily, such as a saucepan which requires heat to travel through to cook food.
- Thermal insulators do not let heat travel through them easily.
- Examples of thermal insulators include woollen clothes and flasks for hot drinks.


thermal conductor


thermal insulator

What are electrical insulators and conductors?

- Electrical conductors allow electricity to pass through them easily while electrical insulators do not.
- Electrical insulators have a high resistance which means that it is hard for electricity to pass through these objects.


electrical conductor


electrical insulator

What is dissolving?

When the particles of a solid mix with the particles of a liquid, this is called dissolving.

- The result is a solution.
- Materials that dissolve are soluble.
- Materials that do not dissolve are insoluble.


dissolving


insoluble

What is filtering?

- When you are trying to separate materials which are insoluble you can use a filter.
- Filters remove dirt or other solids from liquids or gases.
- A filter can be made from paper, charcoal or other materials with tiny holes in it.


paper


charcoal


fabrics

Working Scientifically Skills


Using Scientific knowledge to ask questions.


Using scientific language to draw conclusions.


Recognising when to use other sources to answer questions, separating opinion from fact.


Planning different types of enquiry, controlling variables where necessary.


Recording data, taking repeat measurements where necessary and calculating a mean.


Evaluating plans and results and suggesting improvements

Key Vocabulary

circuit	A complete route which an electric current can flow around.
conductor	A substance that heat or electricity can pass through or along.
dissolves	When a substance is mixed with a liquid and the substance disappears.
electricity	A form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices.
filtering	A device used 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.
insoluble	impossible to dissolve, esp. in a given liquid.
insulator	a non-conductor of electricity or heat
particles	a tiny amount or small piece
permeable	a series of actions used to produce something or reach a goal.
process	of a substance, being such that gas or liquid can pass through it
resistance	the opposing power of one force against another.
soluble	able to be dissolved.
solution	a mixture that contains two or more substances combined evenly
state	the structure or condition of something
thermal	relating to or caused by heat or by changes in temperature
transparent	If an object is transparent, you can see through it

Famous Scientists


Robert Bunsen (1811 – 1899) – Robert Wilhelm Eberhard Bunsen was a German chemist. Bunsen burners, a piece of scientific equipment, was designed by him.


Dmitri Mendeleev (1834 -1907) - Russian chemist and inventor. He is best remembered for formulating the Periodic table.