

Key Vocabulary

Material	The matter or substance from which something is made or can be made from
dissolve	When a solid becomes incorporated into a liquid to form a solution. It looks like it has 'disappeared' but it is just part of the liquid
soluble	Solids that will dissolve in a liquid are described as soluble. Solids that will not dissolve are insoluble
solution	The name given to a liquid into which a solid has dissolved - 'salt solution' or 'sugar solution'
particles	Particles make up solids, liquids and gases. A particle is so tiny that we can't see them
sieving	Smaller materials are able to fall through the holes in the sieve, separating them from larger particles
filtering	The solid particles will get caught in the filter paper but the liquid will be able to get through
evaporating	The liquid changes into a gas, leaving the solid particles behind
Thermal	Relating to, or caused by heat or temperature
Insulator	Any material that keeps energy such as heat, cold or electricity from transferring through

Key knowledge

Changes of state:

There is a limit to the amount of something that can be dissolved in a given amount of water. When the limit is reached we say the water is saturated.

The rate/speed at which a solid can dissolve in water can be affected by a changing number of variables; the temperature of the water, the frequency of stirring or the amount of solid used.

Sugar dissolves in the water making a sugar solution. You cannot see the sugar but it is still there in tiny particles.

The water evaporates. This means that it becomes water vapour. The process will be quicker if the water is heated.

Once all the water has evaporated, the sugar is left at the bottom. This is because sugar cannot evaporate.

Investigation

Planning a fair test to investigate factors affecting the speed at which solids dissolve in water?

Compare everyday materials on basis of their thermal conductivity.

Which variables could you change?

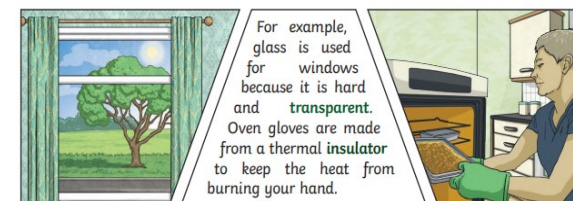
Which variables will you measure/observe?

Which variables will you keep the same?

What is your question?

Key facts

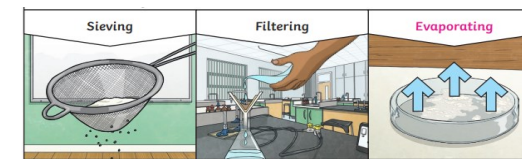
Different materials are used for particular jobs based on their properties: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity, transparency.



Irreversible changes - A change that cannot be changed back to what it was previously. E.g. burning wood turns it into ash. You cannot turn the ash back into a piece of wood.

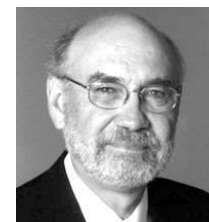
Reversible changes - A change that can be changed back to what it was previously. E.g. water can turn to ice when frozen, but can be turned back to water when heated.

Reversible changes, such as mixing and dissolving solids and liquids together, can be reversed



Famous Scientists

Spencer Silver



Joseph Keddie

