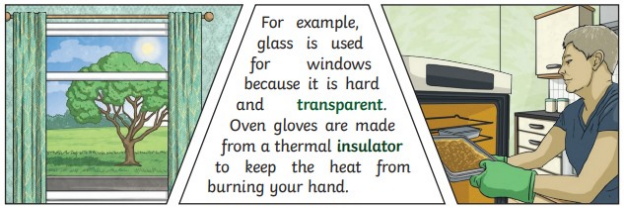
Year 5 Science Knowledge Organiser—Properties of Materials

Key vocabulary	
material	the substance that something is made out of
opaque	doesn't let any light pass through, not able to be seen through
transparent	light passes through easily and objects are seen clearly
translucent	will let some light pass through but not enough to see detailed shapes
conductor	a material that heat or electricity can easily travel through. Most metals are good thermal conductors (they conduct heat) and electrical conductors (they conduct electricity).
insulator	a material that does not let heat or electricity travel through them. Wood and plastic are both good thermal and electrical insulators.
dissolve	when something solid mixes with a liquid and becomes part of the liquid
soluble	able to be dissolved, especially in water
evaporation	when a liquid turns into a gas or a vapour
reversible	able to be changed back to its original state
irreversible	cannot be changed back to its original state

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

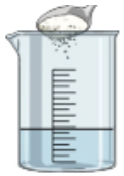


Irreversible changes often result in a new product being made from the old materials.

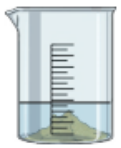
For example, burning wood produces ash. Mixing vinegar and milk produces casein plastic.

Dissolving

A solution is made when solid particles are mixed with liquid particles. Materials that will dissolve are known as soluble. Materials that won't dissolve are known as insoluble.



Sugar is a soluble material.



Sand is an insoluble material.

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

Smaller materials are able to fall through the holes, separating them from larger materials.

The solid particles will get caught in the filter paper but the liquid will be able to pass through.

The liquid changes into a gas, leaving the solid particles behind.

Magnetism is the force of attraction or repulsion between materials. A magnet is an object that is made of materials that create a magnetic field. They each have at least one north pole and one south pole. Magnets attract objects made with iron.