Walkley Primary School		Science
Topic: Properties and Changes of Material	**Year 5**	**Chemistry**

What should I already know?

- I can identify and compare the suitability of a variety of everyday materials.
- I know how the shape of solid objects made from some materials can be changed.
- I can compare and group materials together according to their state.
- I know that some materials change state when they are heated or cooled.
- I can identify the part played by evaporation and condensation in the water cycle.

Vocabulary

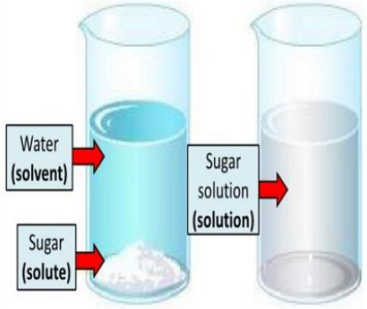
mixture	Combining two or more substances together; each substance stays the same.
filter	Used to remove dirt or other solids from liquids or gasses.
sieve	Has mesh or holes to separate finer particles from coarser ones or solids from liquids.
burning	To consume fuel in such a way as to give off heat, gases and
thermal/ electrical	A non-conductor of heat or electricity.
thermal/ electrical conductor	A substance that heat or electricity can pass along or through.
change of state	Changing something from one state to another.
dissolve	When a substance becomes part of a liquid.
rusting	Forms on the surface of iron when it is exposed to air and moisture.

Grouping Materials by Properties

Property	YES	NO
Electrical Conductor	• copper • aluminium • gold	• glass • plastic • diamond
Magnetic	• steel • nickel • iron	• paper • wood • plastic
Transparent	• glass • water • plastic	• wood • steel • copper
Hardness	• ceramic • concrete • diamond	• wool • rubber • fabric

Solutions and Separation

Some materials will dissolve in a liquid and form a solution. A solution is a specific type of mixture where one substance is dissolved into another and each part stays evenly mixed. Some materials are insoluble and form a sediment.



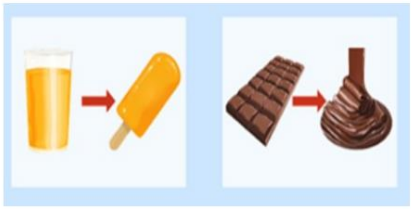
One example of a solution is sugar water. You cannot see the sugar, and the solution will remain if left alone.

- A solvent is a substance that dissolves a solid, liquid or gaseous solute.
- A solute is the substance dissolved in the solvent. When it dissolves, it looks as through it has disappeared, but in fact it has been broken down to become a part of the liquid.
- Some mixtures and solutions can be separated, e.g. through processes such as sieving, filtering and evaporating. Salt and water can be separated by evaporation.

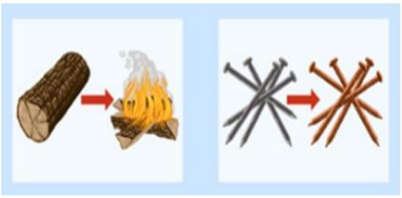
Reversible and Irreversible Changes

There are many ways in which materials can be changed, for example through heating, cooling, mixing with other substances.

- Some changes can be **reversed**, the material can be returned to its previous form. These are known as reversible changes. An example of this is the freezing of water into ice - it can be melted to become water again.



- Other changes are **irreversible**. This means that the change cannot be 'undone'. Examples of this include cooking, baking, frying and burning materials. You can fry a raw egg to cook it. You can't return it back to a raw egg again.



Changes that involve the formation of **new materials**, for example baking a cake, are not normally reversible.