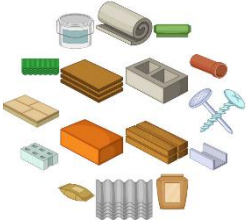


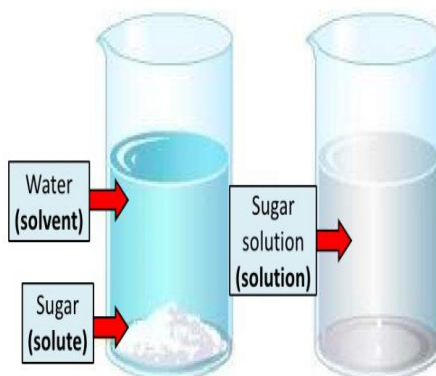
What should I already know?

- A variety of everyday materials including wood, plastic, glass, metal, water and rock.
- The physical properties of a variety of everyday materials (including those that are transparent) and to compare and group materials on the basis of these properties.
- How materials are suitably used based on their properties.
- How magnets and electrical circuits work. Some materials are magnetic.
- How shapes of solid objects can be changed by squashing, bending, twisting and stretching.
- Materials that are solids, liquids and gases and their particle structure.
- Some materials change state when they are heated or cooled and the temperature at which this happens.
- The roles of melting, evaporation and condensation in the water cycle and the role temperature has on the rate of evaporation.
- Some rocks are permeable.



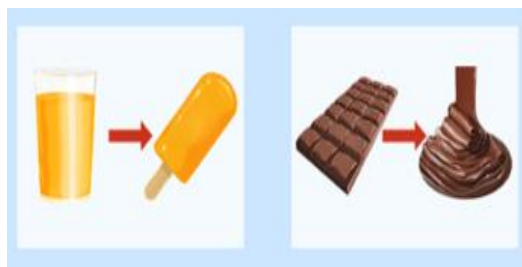
Diagrams

Solutions and Separation

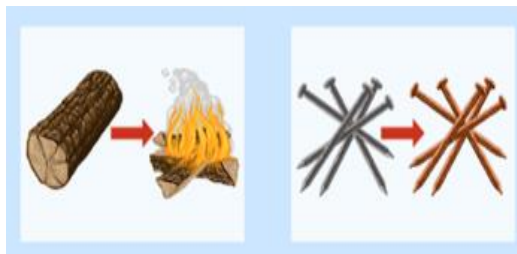


Reversible and Irreversible Changes

REVERSIBLE CHANGES



IRREVERSIBLE CHANGES



Vocabulary

Liquid

A substance that flows freely but can be measured by volume e.g. water or oil

Solid

Firm and stable in shape, not a liquid or fluid

Gas

An air-like fluid substance which expands freely to fill any space available

Soluble

Able to be dissolved, especially in water

Dissolve

When something solid mixes with a liquid and becomes part of the liquid

Solution

A specific type of mixture where one substance is dissolved into another

Solvent

A substance that dissolves a solid, liquid, or gaseous solute

Solute

A solute is the substance dissolved in the solvent. When it dissolves, it looks as though it has disappeared, but in fact it has been broken down to become a part of the liquid.

Vocabulary

Material

The matter from which a thing is or can be made from

Conductor

A material or device which allows heat or electricity to carry through

Thermal

Relating to heat

Insulator

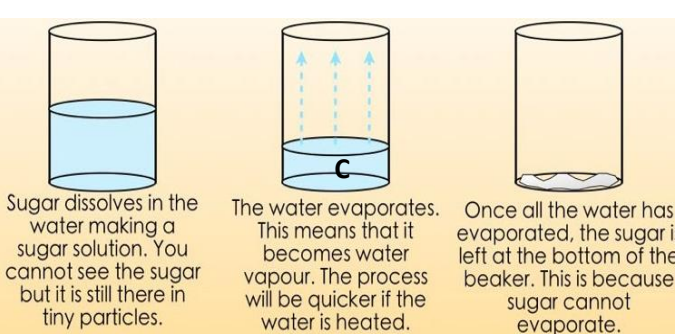
A substance which does not readily allow the passage of heat or sound

Reversible

Able to be reversed back to its original state

Irreversible

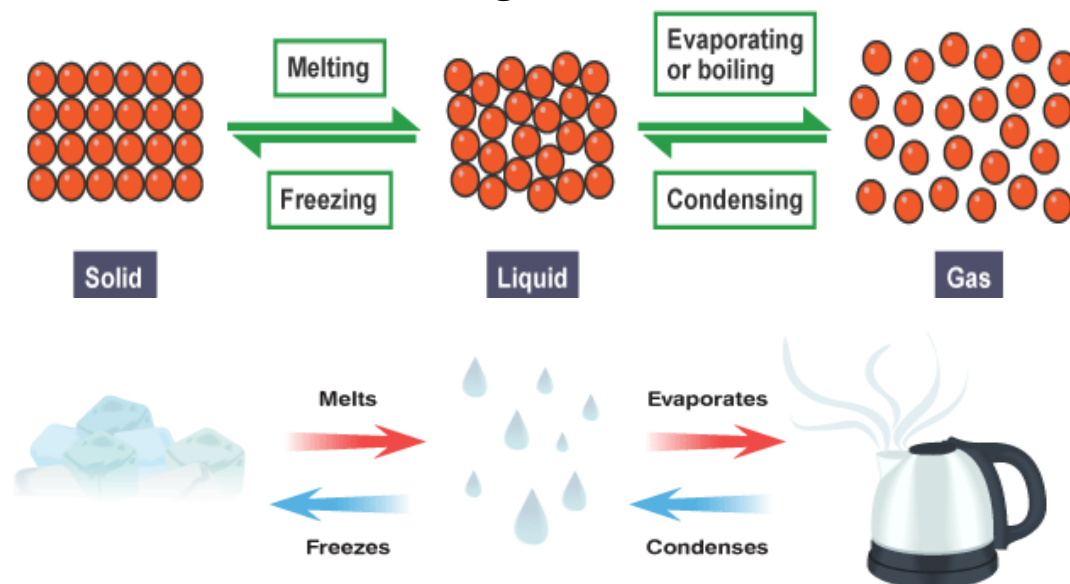
Cannot be reversed back to its original state

Opaque	Not able to be seen through, not transparent	 <p>Sugar dissolves in the water making a sugar solution. You cannot see the sugar but it is still there in tiny particles.</p> <p>The water evaporates. This means that it becomes water vapour. The process will be quicker if the water is heated.</p> <p>Once all the water has evaporated, the sugar is left at the bottom of the beaker. This is because sugar cannot evaporate.</p>	Mixture	A substance in which two or more substances are mixed but not chemically joined together (does not create a solution)
Flexible	Capable of bending easily without breaking		Evaporation	The process of turning from liquid to vapour
Magnetic	Capable of being magnetised or attracted by a magnet			

The Big Picture

By the end of our project we will know that

Changes of State



- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- Demonstrate that dissolving, mixing and changes of state are reversible changes
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Reversible Changes

Irreversible Changes

Dissolving

Mixing



Changes of State

Burning



Rusting

Decaying