



Whingate Primary School - Science

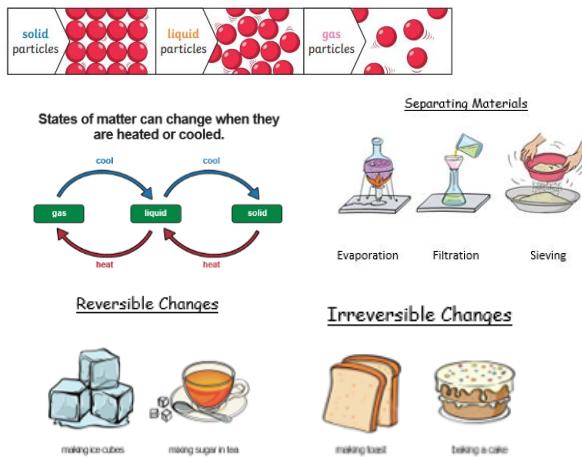


Properties and changes of materials



YEAR 5

Images:



Vocabulary:

conductor: a material that heat or electricity can travel through easily.

evaporation: When a liquid turns into a gas or vapour. A process used for separating a soluble solid and a liquid.

filtration: used for separating a solid and a liquid.

freezing: When a liquid cools and turns into a solid.

gases: a state of matter that has no defined shape or volume. Particles have more energy than liquids and are further apart and move around more.

insoluble: a material that does not dissolve in a liquid, such as sand.

insulator: a material that does not let heat or electricity travel through them.

irreversible: Can't be reversed back to its original state.

liquid: a substance that flows freely and can be measured by volume, e.g. water or oil. Particles have more energy than in solids and are further apart and move around more.

materials: The substance that something is made out of, e.g. wood, plastic, metal.

melting: The process of heating a solid until it changes into a liquid.

reversible: Can get the original materials back.

permeable: a substance that gas or liquid can pass through.

sieving: used for separating two solids.

solids: one of the three states of matter. Solid particles are very close together, meaning solids, such as wood and glass, hold their shape.

soluble: a material that dissolves in a liquid, such as sugar.

solution: a mixture of 2 or more substances that stays evenly mixed.

What we will learn in this unit (skills):

Working Scientifically - Planning focus (Aut Term):

Ask questions: Refine a scientific question so that it can be investigated, choosing an appropriate type of scientific enquiry to provide the best evidence.

Make predictions: Recognise when scientific evidence supports an idea or not and use this to support predictions. Use test results to prompt new questions and make predictions for setting up further tests.

Decide how to carry out an enquiry: Plan enquiries, deciding when it is appropriate to carry out a fair test or another type of practical enquiry from a range suggested. Identify one or more control variables in investigations when conducting a fair test.

Sticky Knowledge:

- Some materials dissolve when mixed with a liquid - these are soluble. If they do not dissolve, they are insoluble.
- When a soluble is dissolved in a liquid a solution is created.
- Dissolving is a reversible change.
- Some changes are irreversible such as when an egg is cooked it cannot be reversed.
- There are different ways to separate a mixture of materials, including: sieving, magnetism, evaporation and filtration.

What we will learn in this unit (knowledge):

NC Objectives:

- 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