



**Prior learning to reactivate**

- Differences between solids, liquids and gases
- Some materials can change state when they are heated or cooled (Year 4)
- Some materials which are and aren't magnetic (Year 3)
- Some materials which can and can't conduct electricity

**Key learning**

Materials vary in terms of their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets, making some materials more suitable than others for different purposes.

Some materials will dissolve in liquid to form a solution.

Solids, liquids and gases can be separated in several ways, including filtering (separating a liquid and a solid), sieving (separating different sized solids) and evaporation (removing a liquid to leave a solid remaining)

Reversible changes are changes that can be undone or reversed. These include melting, freezing, boiling, evaporating, condensing, dissolving and also changing the shape of a substance.

Irreversible changes result in the formation of new materials, such as ash after burning, dough after mixing a solid and a liquid or the action of acid on bicarbonate of soda.

**Key vocabulary**

Reversible	A change that can be undone or reversed such as water to ice.
Irreversible	A change that can not be reversed or undone such as burning.
Filtering	To pass a liquid, gas, light or sound through a device to remove unwanted material
Sieving	To separate two solids of different sizes
Soluble	Something which can be dissolved in water to form a solution
Dissolving	To become incorporated in a liquid to form a solution
Conductivity	The ability of a material to pass electricity or heat through it.
Insulation	The ability of a material to prevent electricity or heat passing through it.

**SCIENTIFIC SKILLS**

By the end of the year, children should be able to...

- Plan scientific enquiries to answer different questions, recognising and controlling variables where necessary
- Take measurements, using a range of scientific equipment
- Record data and results, using charts, tables, diagrams, keys and graphs
- Use test results to make predictions to set up further tests
- Report and present findings, drawing conclusions about results
- Identify scientific evidence which has been used to support or refute ideas

Opportunities for scientific enquiry within the unit:

- Test the properties of materials e.g. magnetic, water resistant, conductivity of electricity and heat, transparency and flexibility
- Testing materials to see if they dissolve in liquid
- Separating materials—sieving, filtering, evaporation, magnets
- Irreversible change—cooking

