

Prior knowledge/key knowledge

Prior knowledge in this box.

Years 1, 2 & 4

Compare and group materials together, according to whether they are solids, liquids or gases.
Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Key knowledge for current year

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.

Science Knowledge Organiser

Year: 5 Term: 4

Properties & Changes of Materials

Vocabulary

Soluble	Able to be dissolved especially in water
Insoluble	Cannot be dissolved especially in water
Dissolve	When something solid mixes with a liquid and becomes part of the liquid
Solution	Is made when one substance dissolves into another
Reversible change	Can be reversed back into its original state
Irreversible change	Cannot be reversed back into its original state
transparent	Allows light to pass through
Thermal conductor	A material or device that allows heat to carry through
Electrical conductor	A material or device that allows electricity to carry through
magnetic	Capable to being magnetised or attracted by a magnet



Key skills /investigative focus

Classifying and Identifying	Classify different materials by different characteristics.
Fair Testing	What paper soaks up the most water? What material is the most absorbent? Explore the properties of different materials. How does the temperature of water affect the rate at which sugar dissolves?
Observing	What happens to different materials when they are mixed – do they dissolve & make a solution? Can we separate mixtures? Investigate reversible and irreversible changes in materials.

Big Questions/Challenging Perceptions



Where does sugar go when it is dissolved in water?
PMI – The freezing point of water becomes 10°C.
Think the link grid: What is the connection between: cork, wood, metal, glass, rubber, plastic, water and paper?

