

# Knowledge Organiser: Materials and their properties

## Enquiry Skills and Concepts

- Plan different types of enquiry to answer questions
- Recognise and control variables as necessary
- Choose and use a range of scientific equipment with increasing accuracy and precision
- Collect data and make decisions about what observations to make, what measurements to use and how long to make them for
- Choose how to record data and results including tables and graphs
- Present findings in oral and written forms
- Make predictions and gather evidence (fair testing) to prove or disprove the predictions
- Identify when further tests and observations may be needed

## Knowledge and understanding

- 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
- Understand 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

## Key Vocabulary

**conclusion** - a summary of how results support or contradict the original prediction

**conductor** - a material that energy (electricity or heat) flows through

**dissolve** - incorporate into a liquid to form a solution

**soluble** - dissolves into liquid to form a new solution

**insoluble** - does not dissolve in liquid

**solution** - a mixture of two or more substances

