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| **Properties and Changes of Materials** | What are the properties and changes of materials? |
| 1. How could you group everyday materials, based on their: hardness, solubility, conductivity and response to magnets?
2. Which materials dissolve in liquid and how do you get them back?
3. How might mixtures be separated, using filtering, sieving and evaporating?
4. What are metals, wood and plastic used for and why?
5. What is a reversible change?
6. What is an irreversible change?
7. How do you plan an investigation?
8. What measurements could you take in your investigation?
9. How could you record the results and report/present them?
10. How could you use your results to make predictions?

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Related Milestones:

Science M3:

To investigate materials • Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. • Understand how 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, oxidisation and the action of acid on bicarbonate of soda.

To work scientifically • Plan enquiries, including recognising and controlling variables where necessary. • Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. • Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. • Present findings in written form, displays and other presentations. • Use test results to make predictions to set up further comparative and fair tests. • Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.