| Living things and their habitats | Animals including humans | Properties and change of materials | Earth and Space | Forces |
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# Year 5 - Properties and change of materials

## Knowledge

- To know the similarities and differences between everyday objects and be able to group them based on their properties and results of testing.
- To know that some materials are more suitable for particular uses than others based on testing and conclusions.
- To know that some materials will dissolve in liquid to form a solution, and know how to recover a substance from a solution.
- To know how mixtures might be separated, including through filtering, sieving and evaporating.
- To know and explain the difference between reversible and irreversible changes.
- To know that dissolving, mixing and changes of state are reversible changes.
- To know that some changes result in the formation of new materials and that this kind of change is not usually reversible. E.g. burning or mixing acid with bicarb

## Skills

- **Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.**

This could be achieved by… giving children a range of problems to overcome. (e.g. which material is the most suitable to keep ice cream cold?) and pupils independently creating their own questions to facilitate the investigation into properties of materials. Are all questions generated by pupils testable? Teacher to support refining of questions.

(Comparative and Fair Testing)

- **Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.**

This could be achieved by accurately of measuring temperature and temperature changes over time. Selecting the most appropriate equipment for the experiment they are investigating.

(Comparative and Fair Testing)

- **recording data and results of increasing complexity using scientific tables, bar and line graphs.**

This could be achieved by… drawing lines graphs to show the relationship between time and temperature of insulators. Drawing bar charts to show the hardness of the materials.

(Pattern Seeking)

## Vocabulary

| | |
|---|---|
| Solubility | Irreversible |
| Transparency | Hardness |
| Conductivity | Magnetic |
| Filter | Mixing |
| Evaporation | Liquid |
| Dissolving | Solution |
| Sieving | Melting |
| Reversible | |

## Pre-loading

- Light – discuss how light travels through different materials e.g. transparent, translucent and opaque
- Light – Discussion of how light travels through different states of matter. E.g. how light travels through liquids compared to some solids.
- Electricity – discuss particular materials suited to insulating or conducting electricity. E.g. Look at electrical plus/safety covers. Why do wires have plastic coating?