Year 5: Properties and changes of materials Summer Year A

What should I already know? About magnetism from studies in Year 3 and electricity in Year 4.

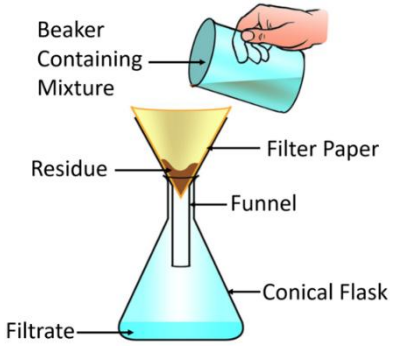
Key Vocabulary

dissolve	when something solid mixes with a liquid and becomes part of the liquid.
evaporation	the process of turning from liquid to vapour.
gas	an air-like fluid substance which expands freely to fill any space available.
insulator	something which keeps in heat.
irreversible	cannot be reversed back to its original state.
liquid	a substance that flows freely but can be measured by volume e.g water.
magnetic	capable of being magnetized or attracted by a magnet.
reversible	able to be reversed back to its original state.
solid	firm and stable in shape, not a liquid or fluid.
soluble	able to dissolved, especially in water.
thermal	relating to heat.
conductor	A material that allows heat or electricity to pass through it

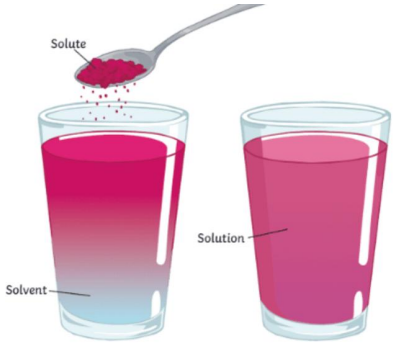
I am learning to...

- 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
- Explain why different materials are used for particular jobs based on their properties eg. thermal conductivity, transparency.
- Identify the difference between particles in a solid, liquid and a gas.
- Identify and explain simple changes of state eg. gas to liquid, liquid to solid.
- Identify reversible and irreversible changes and demonstrate that dissolving, mixing and changes of state are reversible changes
- Explore separating solids and liquids using sieving, filtration and evaporation

Scientific diagrams



Filtering solutions and mixtures



Dissolving materials

Key misconceptions

- Which changes are reversible or irreversible.
- solids dissolved in liquids have vanished and so you cannot get them back.
- lit candles only melt, which is a reversible change.

Key skills - working scientifically

- To explore ideas and raise different kinds of questions
- To select and plan the most appropriate type of scientific enquiry to use
- To recognise when and how to set up comparative and fair tests
- To explain which variables need to be controlled in an experiment and why.
- To use test results to make predictions to set up further comparative and fair tests

Key scientists

Raquel Prado - Chemist who develops a sustainable fabric that looks like leather but comes from pineapple leaves that would otherwise be burnt.

Jamie Garcia - Chemist who discovered a fully recyclable plastic.

What will I be learning next?

- The difference between chemical and physical changes.
- Similarities and differences, including density differences, between solids, liquids and gases