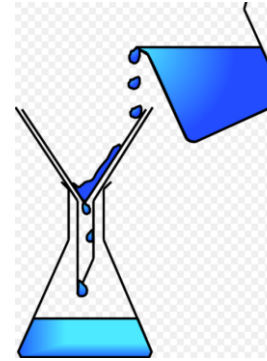


Year 5 – Properties and changes of materials

Intent:

- ✓ Materials and their properties
- ✓ Does salt disappear when you mix it with water?
- ✓ How can I recover a substance from a solution?
- ✓ Sieving, Filtering and Evaporation
- ✓ Which material is best?
- ✓ Reversible and Irreversible changes



Key Vocabulary

absorb	liquid	soft
burn	melt	solid
change state	mixture	soluble
condense	magnetic	insoluble
dissolve	opaque	insoluble
evaporate	particle reversible change	solution
filter	irreversible change	states of matter
flexible	rigid	translucent
gas	rough	transparent
hard	sieving	waterproof
	smooth	

Properties and changes of materials

Statutory requirements

Pupils should be taught 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
- 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.

Notes and guidance (non-statutory)

Pupils should build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4. They should explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes. Pupils should explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. They should find out about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.

Intent:

- Identify different materials and their properties.
- Understand that soluble materials dissolve in liquids and form a solution.
- Explain process to separate solids, liquids and gases using filtering, sieving and evaporation.
- Identify and explain which materials are used for everyday objects and why.
- Understand reversible and irreversible changes.
- Know that some changes (usually irreversible) result in new materials being formed.