

Science Knowledge Organiser – Year 5 /6 Term 3 Properties and Changes of Materials

Key Enquiry Focus: Describe properties and changes in materials.

National Curriculum

- 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



| Key Vocabulary | Meaning |
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| materials | The substance that something is made out of, e.g. wood, plastic, metal. |
| solids | One of the three states of matter. Solid particles are very close together, meaning solids, such as wood and glass, hold their shape. |
| liquids | This state of matter can flow and take the shape of the container because the particles are more loosely packed than solids and can move around each other. Examples of liquids include water and milk. |
| gases | One of the three states of matter. Gas particles are further apart than solid or liquid particles and they are free to move around. A gas fills its container, taking both the shape and the volume of the container. Examples of gases are oxygen and helium. |
| melting | The process of heating a solid until it changes into a liquid. |
| freezing | When a liquid cools and turns into a solid. |
| evaporating | When a liquid turns into a gas or vapour. |
| condensing | When a gas, such as water vapour, cools and turns into a liquid. |

Sticky Knowledge

- Different materials are used for particular jobs based on their properties.
- Reversible changes, such as mixing and dissolving solids and liquids together, can be reversed
- Irreversible changes often result in a new product being made from the old materials (reactants).
- A solution is made when solid particles are mixed with liquid particles.
- Materials that will dissolve are known as soluble.
- Materials that won't dissolve are known as insoluble.

