

What are the properties of materials?

Skills

How can you compare and group materials?

Classify materials by properties.

What are the uses of everyday materials?

Comparative and fair testing of materials and which would be most useful for a certain purpose.

Why do some materials dissolve?

Comparative and fair testing of which materials are soluble.

How can you separate gases, liquids and solids?

Explore how different materials can be separated.

What are reversible and irreversible changes?

Observe changes such as rusting over time.

Knowledge

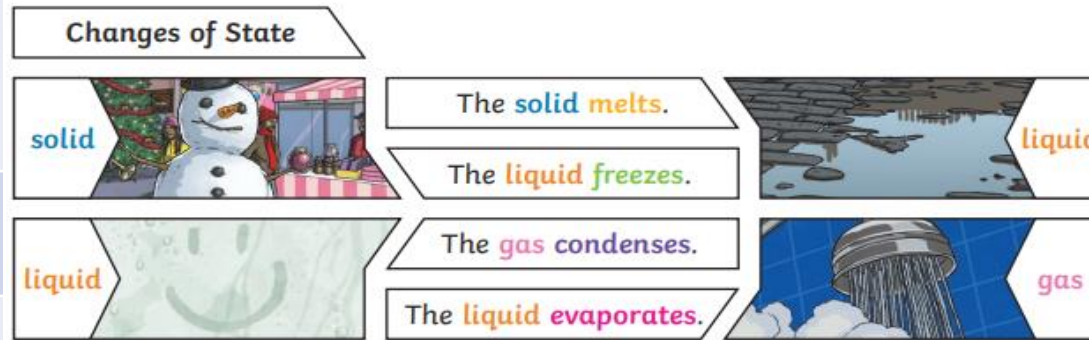
- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- To 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.
- 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.

What are the properties of materials?

Yr 5 Properties and changes of materials Knowledge Mat

Subject Specific Vocabulary

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| Insulator | A material does not easily transmit energy, such as electric current or heat. |
| Conductor | A material that does transmit energy, such as electric current or heat. |
| Change of state | The physical process where matter moves from one state to another. For example solid to liquid or liquid to gas. |
| mixture | a substance made by mixing other substances together. |
| Dissolve | For a solid to form a solution with a liquid. |
| solution | A liquid mixture in which the solute and the solvent mix. |
| soluble | Is able to be dissolved. (adjective) |
| insoluble | Isn't able to be dissolved. (adjective) |
| Reversible change | Reversible changes are changes that can be undone or reversed. Melting, freezing, boiling, evaporating, condensing, dissolving. |
| Non-reversible change | Are changes that cannot be undone or reversed. |
| Burning | A high temperature chemical reaction. |
| Rusting | The corrosion of metal. |



Sticky Knowledge about properties of materials.

Different materials are used for particular jobs based on their properties: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity, transparency.

For example glass is used for windows because it is hard and transparent. Oven gloves are made from thermal insulator to keep the heat from burning your hand.

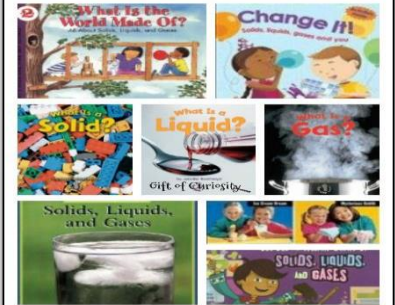
Solids can melt to change a liquid. Liquids can freeze to change a solid.

Gases can condense to change to a liquid. Liquids can evaporate to change to a gas.

Reversible changes such as mixing or dissolving solids and liquids can be reversed by sieving, filtering or evaporating.

Exciting books

BOOKS ABOUT MATTER (solids, liquids, & gasses)



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| Evaporating | | The liquid changes into a gas , leaving the solid particles behind. |
| Filtering | | The solid particles will get caught in the filter paper but the liquid will be able to get through. |
| Sieving | | Smaller materials are able to fall through the holes in the sieve, separating them from larger particles. |