

SCIENCE · Y2–Y5

Materials

Knowledge Organiser — Y2–Y5

Properties of materials

1

Hard / soft

How much resistance a material has to being scratched or indented.

Example: diamond (hardest) vs. cotton (soft)

2

Rigid / flexible

Whether a material bends or keeps its shape.

Example: wood (rigid) vs. rubber (flexible)

3

Transparent / opaque

Transparent = light passes through. Opaque = no light passes through. Translucent = some light.

Example: glass / wood / tissue paper

4

Thermal conductor

Allows heat to pass through it easily. Metals are good conductors.

Example: copper, iron, steel

5

Thermal insulator

Resists the flow of heat. Used to keep things warm or cold.

Example: wool, wood, plastic, air

6

Waterproof

Does not absorb water or allow it through.

Example: rubber, plastic, glass, waxed fabric



7

Magnetic

Attracted by a magnet. Only iron, nickel, cobalt, and their alloys are magnetic.

Example: iron, steel — NOT copper, aluminium, wood

Changes to materials

1

Reversible change

The original material can be recovered. No new substance is made.

Example: melting, freezing, dissolving, evaporating

2

Irreversible change

A new substance is made. Cannot be reversed.

Example: burning, rusting, baking bread, mixing vinegar and bicarbonate

3

Dissolving

A solid mixes with a liquid to form a solution. The solid has not disappeared — it can be recovered by evaporation.

Example: salt dissolves in water

4

Melting point

The temperature at which a solid turns to liquid.

Example: water melts at 0°C; iron melts at 1538°C

