



Be the best that we can be.

# EBJ Knowledge Organiser Science Year 5

## Autumn 2 Properties and changes



### Materials and properties

Materials are chosen for specific uses according to their **properties**. For example, buildings are made from strong, durable materials like wood, stone, brick, concrete and metal.



**Conductivity** is a measure of how quickly and easily material will let heat or electricity charge pass through.

- Good **conductors**, like metal, will let heat and electricity pass through quickly
- Good **insulators**, like plastic and rubber, will not let heat pass through easily.

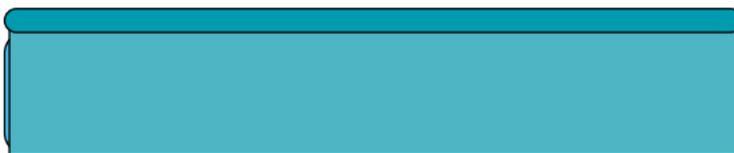
**Hardness** is a measure of how easily a material can be scratched or dented.

- **Hard** materials, like most metals, cannot be scratched or dented easily
- **Soft** materials, like clay or wax, can be scratched or dented easily.

### Transparency

**Transparency** is a measure of how much light a material lets pass through.

- **Opaque** materials, like metal and wood, do not let any light pass through so objects on the other side cannot be seen.



- **Translucent** materials, like some plastics, let some light pass through. The light is scattered as it passes through so objects on the other side (if visible) appear fuzzy, coloured or distorted.



- **Transparent** materials, like glass, let most light pass through with minimal scattering so objects on the other side are clearly visible.



### Changes of states

**Changes of state** are all examples of reversible changes because heating or cooling the substance will change it back to its original state.



solid

melting



freezing



liquid

evaporating



condensing



gas

### Key vocabulary

A **reversible change** is when a material is changed but can be easily reverted to its original state.

An **irreversible change** occurs when a material is changed but cannot be easily reverted to its original state. New materials are produced in the process.

**Dissolving** is a reversible change because the dissolved substance can be reclaimed by evaporating the liquid.



**Burning** is an irreversible change in which a material is burned and makes new products.

**Mixing** vinegar and bicarbonate of soda is an irreversible change. A new product (a gas) is formed which causes fizzing.



**Rusting** is an irreversible change in which iron makes rust when exposed to water and air (oxygen).

