Science - Properties and changes

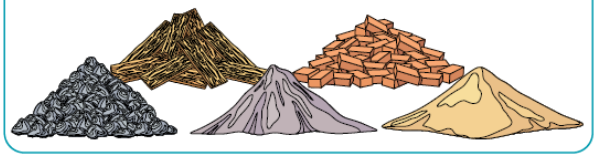
Conductivity is a measure of how quickly and easily a material will let heat or electrical charge pass through.

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

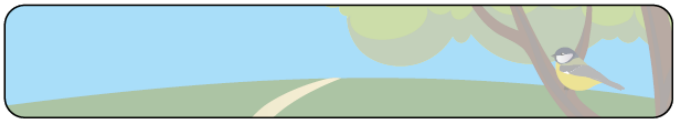
Materials are chosen for specific uses according to their **properties**. For example, buildings are made from strong, durable materials like wood, stone, brick, concrete and metal.



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.

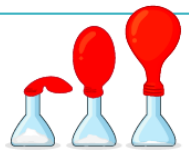


- Transparent materials, like glass, let most light pass through with minimal scattering so objects on the other side are clearly visible.

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

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

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



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.

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

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

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