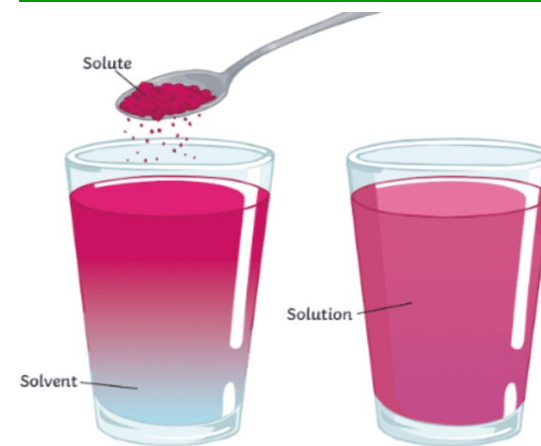


What changes can materials go through?

Vocabulary	Definition
dissolve	When a solid completely mixes in a liquid.
solute	A solid
solvent	A liquid
soluble	Can dissolve in liquids, so that you can no longer see any bits.
insoluble	Cannot dissolve in liquids.
solution	A mixture of a liquid with a dissolved solid.
reversible change	Changes in materials that can be switched back to their original state, e.g. dissolving, melting, freezing.
irreversible change	Changes in materials that cannot be reversed back to their original state e.g. burning, rusting and chemical reactions.
conductor	A material that allows heat or electricity to pass through
insulator	A material that doesn't allow heat or electricity to pass through

Dissolving and solubility

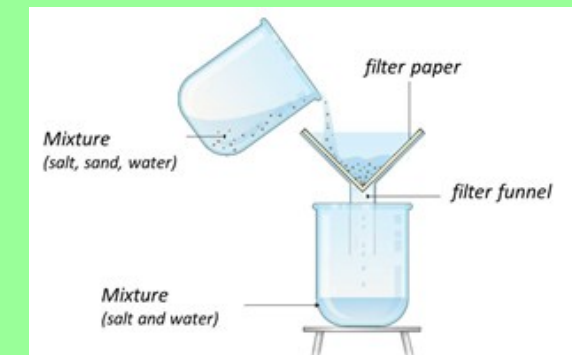


- Solid (solute) > into the liquid (solvent) > dissolving > solution.
- If a solid cannot dissolve, it is *insoluble*.
- When a liquid (solvent) cannot dissolve any more of the solid (solute), the solution becomes *saturated*.

Separating mixtures

Filtrating

Use: separating insoluble solids from liquids
Sand and water



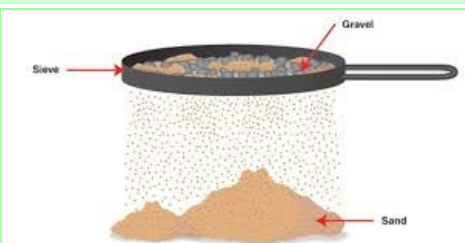
Evaporating

Use: separating solutions. Reverses process of dissolving.
Salt and water



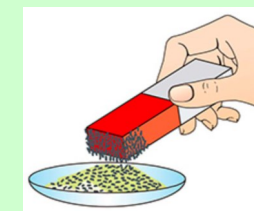
Sieving

Use: solids of different sizes.
Rice and flour



Magnetism

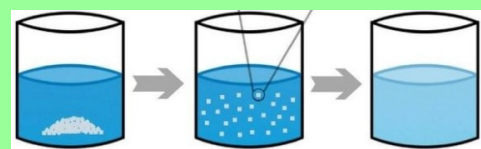
Use: separating mixtures of magnetic materials and non-magnetic materials
Paperclips and rice



Reversible changes

Non-reversible changes

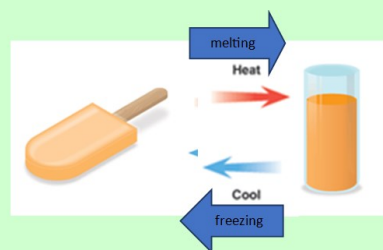
Dissolving



Burning



Melting and freezing



Rusting



Evaporation and condensation



Chemical reaction-
mixing vinegar
and bicarbonate of soda



What changes can materials go through?

Heat conduction and insulation

Heat conduction

- Heat can move easily through thermal conductors.
- Metals are good thermal conductors, as they allow heat to move through them.



Heat insulation

- Thermal insulators do not let heat travel through them easily.
- Some fabrics, wood and plastics
- Thermal insulators can keep heat out or in.



We can group materials based on their properties

Different materials are used for particular jobs based on their properties:

Properties	Examples
Hardness	
Flexibility	
Electrical conduction and insulation	
Magnetism	
Transparency	
Heat conduction and insulation	