


Science Knowledge Organiser- Material Properties- Reversible and Irreversible Changes

Diagrams


Filtering	Sieving	Evaporating
To remove dirt or other solids from liquids	A utensil with meshes or holes to separate finer particles from coarser ones or solids from liquids	To turn from liquid into gas (vapour)
		

What is dissolving?


- When the **particles** of a **solid** mix with the **particles** of a **liquid**, this is called **dissolving**.
- The result is a **solution**.
- **Materials that dissolve** are **soluble**.
- **Materials that do not dissolve** are **insoluble**.




dissolving



solution



soluble



insoluble

Reversible change



Irreversible change



What should I already know?			
Freezing, melting and boiling changes can be reversed			
Key Vocabulary			
Dissolve	When something solid mixes with a liquid and becomes part of the liquid	Melting	To change from a solid to a liquid state through heat or pressure
Reversible	Able to be reversed back to its original state	Solution	A mixture that contains two or more substances combined evenly
Irreversible	Cannot be reversed back to its original state	Insoluble	A substance that will not dissolve
Filter	To remove dirt or other solids from liquids or gases. A filter can be made of paper, charcoal or other materials with tiny holes in it.	Sieve	A utensil with meshes or holes to separate finer particles from coarser ones or solids from liquids
Condense	Turning water vapour or steam back into a liquid	Evaporation	The process of turning from liquid to vapour

- **Key Learning**
- 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.
- Changes can occur when different materials are mixed.
- Some material changes can be reversed and some cannot.
- Recognise that dissolving is a reversible change.
- Distinguish between melting and dissolving.
- Mixtures of solids (of different particle size) can be separated by sieving.
- Mixtures of solids and liquids can be separated by filtering if the solid is insoluble (undissolved).
- Evaporation helps us separate soluble materials from water.
- Changes to materials can happen at different rates (factors affecting dissolving, factors affecting evaporation – amount of liquid, temperature, wind speed).
- Freezing, melting and boiling changes can be reversed.

Diagrams

What are reversible changes?

Reversible changes are changes that can be undone or reversed.

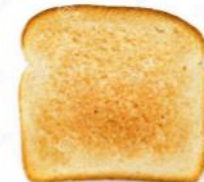
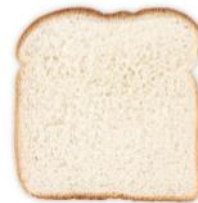


What are irreversible changes?

Irreversible changes are changes that **cannot** be undone or reversed.



Heat



Heat