

# Year 5 - Autumn Term 1 - Properties and Changes of Materials



## Key Vocabulary

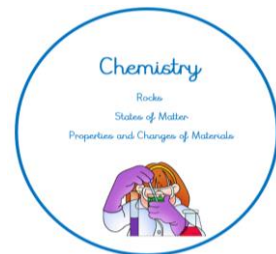
Materials	The substance that something is made out of - eg wood, plastic, metal
Properties	The characteristics of different materials that make them useful and suitable for different jobs.
Hardness	How hard or soft a material is
Solubility	Whether or not a material (solid or gas) can dissolve in a liquid.
Transparency	A transparent object lets light through so the object can be looked through, for example glass or some plastics
Conductivity	How conductive a material is. A conductor is a material that heat or electricity can easily travel through.
Dissolve	A solid that completely mixes in with a liquid and cannot be seen. This mixture of a solid and liquid is called a <u>solution</u> .
Separate	A way of reversing a change. Mixed solids and liquids can be reversed by <u>filtering</u> , <u>sieving</u> or <u>evaporation</u>
Reversible changes	A change that can be reversed (undone), such as mixing and dissolving solids and liquids.
Irreversible changes	A change that cannot be undone. They often result in a new product being made. For example - burning wood produces ash.

## Prior Learning:

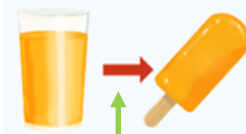
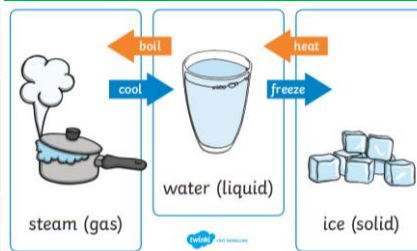
We have investigated some properties of materials before in **Year 2 (Materials unit)** and **Year 3 (Rocks unit)**. We explored how hard, squashy, smooth, bumpy, soft, flexible, rough, waterproof and shiny different everyday materials are.

Solids, liquids and gases are the three states of matter. (Year 4)

- \* In solids the particles are very close together so hold their shape
- \* In liquids, particles are more loosely packed and can move around each other. This means liquids can flow and take the shape of the container they are in.
- \* In gases, particles are further apart again. They are free to move around.



## Changing states of matter

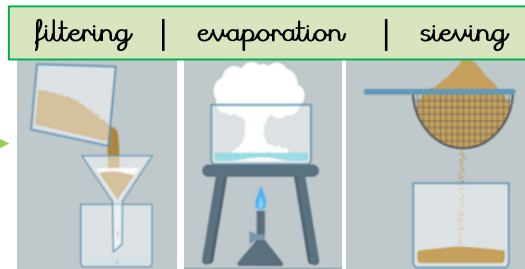


An example of a reversible change

An example of an irreversible change



## Methods of separating solid and liquid mixtures



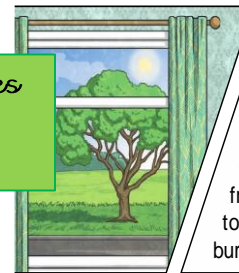
## Influential Individual

Benerito researched how to treat cotton fabric with chemicals so that it would wrinkle less. She invented a treatment that kept cotton from creasing when it was wet or dry.



Ruth Benerito  
1916-2013

Understanding properties helps pick the best materials for the job



For example, glass is used for windows because it is hard and **transparent**. Oven gloves are made from a thermal **insulator** to keep the heat from burning your hand.

