



# Knowledge Bank: Year 5 Science – Properties of Materials

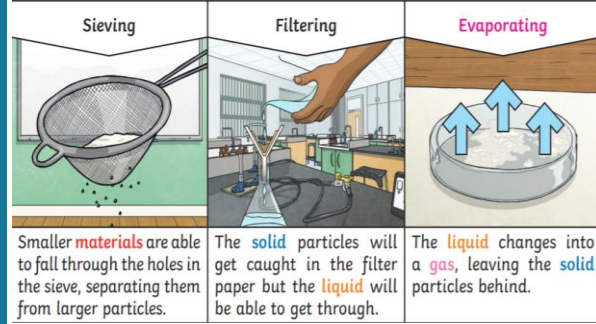
## Alchemy Island

### Key Facts:

- There are three states of matter: solids, liquids and gases.
- It is possible to change between solid, liquid and gas through heating, cooling, condensing and evaporation.
- Heating can sometimes cause materials to change permanently. When this happens, a new substance is made. These changes are not reversible.
- There are various different ways to separate mixtures using different equipment.
- When two or more substances are mixed and remain present, the mixture can be separated.
  - Some changes can be reversed, and some can't.
  - When a substance dissolves, it might look like it has disappeared, but it is just mixed with the water to make transparent liquid.
  - Heat can make some substances dissolve faster in water.
  - A mixture can cause an irreversible change.
  - Heat can make different materials evaporate.

### Diagrams/Images:

Reversible changes, such as mixing and dissolving **solids** and **liquids** together, can be reversed by:



### What I should already know:

- Objects can be grouped by whether they are solid, liquid or gas.
- Materials can be compared and grouped based on their states of matter.
- States of matter can be changed through heating and cooling.
- Evaporation and condensation are part of the water cycle.

### Key Vocabulary:

Word	Definition
<b>solid</b>	One of the three states of matter, which hold their shape e.g. wood and glass.
<b>liquid</b>	Liquids are another state of matter that can flow and take shape of the container. E.g. water and milk.
<b>gas</b>	Gas is the 3 <sup>rd</sup> state of matter and are free to move around, such as helium and steam (water vapour).
<b>Particles/atoms</b>	Tiny bits of matter that make up everything in the Universe.
<b>dissolving</b>	When a solid is mixed into a liquid and becomes a solution.
<b>evaporating</b>	When a liquid turns into gas due to heat.
<b>melt</b>	A solid becoming a liquid due to temperature.
<b>freeze</b>	A liquid becoming a solid due to low temperatures.
<b>Water vapour</b>	When liquid water is heated to boiling point and turns to gas.
<b>energy</b>	Another word for power: it makes things move, makes machines work and helps living things grow.
<b>condensation</b>	The change of state from gas to liquid.
<b>soluble</b>	A substance which will dissolve in a liquid to form a solution
<b>insoluble</b>	A substance which won't dissolve in a liquid to form a solution.