

# Year 5: Materials Matter

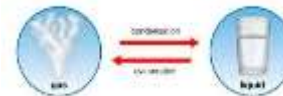
1. Terms	Definitions
<b>Dissolve</b>	A material is put in water and it looks like it has disappeared (e.g. salt dissolves in water).
<b>Filtering</b>	Removing small particles of Insoluble or undissolved material from a liquid.
<b>Sieving</b>	Sieving is a separating process that is used to remove particles of insoluble or undissolved material from a liquid (similar to filtering).
<b>Properties</b>	A property is a quality of something like <b>strength, stretchiness or absorbency</b> .
<b>Thermal</b>	If something has thermal properties, it keeps heat in.
<b>Transparent</b>	You can see clearly through the material.
<b>Conductivity</b>	Whether an object allows heat or electricity to travel through it.
<b>Soluble</b>	When a material is put in a liquid and it dissolves.
<b>Insoluble</b>	When a material is put in a liquid and it does not dissolve.
<b>Atoms</b>	Basic building blocks that make up everything in the universe.
<b>Solids</b>	They keep their shape and can be held. Their atoms are closely packed together.
<b>Liquids</b>	They do not keep their shape and they flow easily. Their atoms are less tightly packed together.
<b>Gases</b>	They are normally invisible, do not change their shape and take up whatever space is available. Their atoms are spread out.

## 4. The Environment

- Natural resources are materials that are produced by the environment.
- They can be used to heat our homes, transport us around the world, feed us and clothe us.
- The UK has a lot of natural resources, including Fossil fuels include: oil, petrol, coal and natural gas. **fossil fuels**.
- When fossil fuels are burnt, they let off dangerous gases, which damage the environment.
- Plastic is made from fossil fuels. It only decomposes after 1000 years.
- Every year, about 8 million tonnes of plastic waste escapes into the oceans.



## 2. Knowledge Recap from Previous Learning:



- Evaporation** occurs when a liquid changes to a **gas**.
- Condensation** occurs when a gas changes to a liquid.
- You can test whether an object is a conductor of electricity by attaching to an electrical circuit.
- Common conductors include: coins, paper clips, metal wire.
- Objects can also conduct heat. Most metals are good conductors.
- If an object is **magnetic**, it will be attracted towards a magnet.

## 3. Key Facts:

**Solutions** (When one solute (substance) dissolves into the other substance (e.g. salty water))

- Salt and sugar will dissolve in water, this forms a solution.
- You can separate salt and sugar from water, by evaporating the water. The salt or sugar will be left. Examples of solutions include: tea with sugar and sea water (salt and water).

**Mixtures** (Two or more substances are mixed but do not dissolve. They can be easily separated (e.g. paper clips and flour).)

- An example of a mixture is water and sand – the sand will not dissolve.
- To separate mixtures, you could use a sieve, filter paper or a magnet.



## Reversible and irreversible changes

- Reversible changes** (It is a change that can be undone. If you can get back the substances that you started with e.g. freezing water to make it ice. This could be easily reversed by letting the ice melt)
- Dissolving, evaporating, melting and freezing** are all examples of reversible changes.
- Irreversible changes** (It is a change that cannot be undone. It is impossible to get back the individual components e.g. baking a cake. Once it is baked, you cannot separate all the ingredients.)
  - Heating, mixing and burning can cause irreversible changes.
  - Damage to your teeth from eating too much sugar is also irreversible.

