Year 5/6 Science – Changes of materials

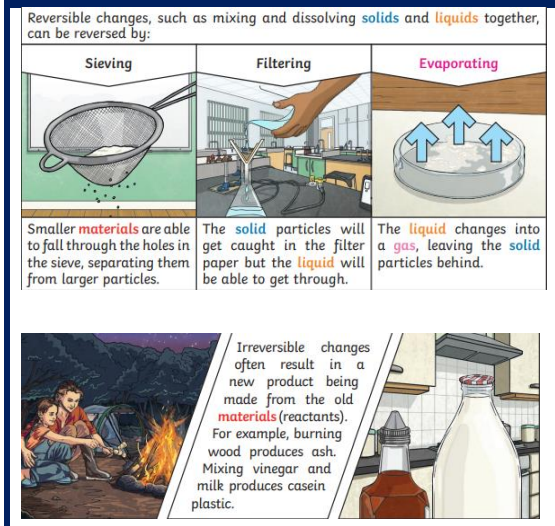
Morda CE Primary School

Key Learning

- 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.
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Investigation Questions

- What is the most suitable method to separate different mixtures?
- Does the surface area of a container of water affect the speed of evaporation?
- How do you know if a change is reversible or irreversible?



Common Misconceptions

- Solids dissolved in liquids have vanished and so you cannot get them back
- Because a solid has changed appearance after melting it is an irreversible change
- Lit candles only melt, which is a reversible change.
- Relating irreversible changes to recovering original products only (not the formation of a new product)

Key Scientific Vocabulary

change of state	The process of one state of matter (solid, liquid or gas) changing to another.
mixture	A physical combination of two or more substances that aren't chemically joined
filter	Solid particles get caught in the filter paper but the liquid passes through.
sieve	Smaller materials fall through the holes in the sieve, separating them from larger particles.
evaporation	Liquid changes into a gas, leaving the solid particles behind.
reversible change	A change that can be changed back to what it was previously. E.g. water can turn to ice when frozen, but can be turned back to water when heated.
irreversible change	A change that cannot be changed back to what it was previously. A new product is formed E.g. burning wood turns it into ash and produces carbon dioxide. You cannot turn the ash back into a piece of wood.
burning	A chemical reaction that produces heat and light
rusting	When iron reacts with water and oxygen to produce a new material