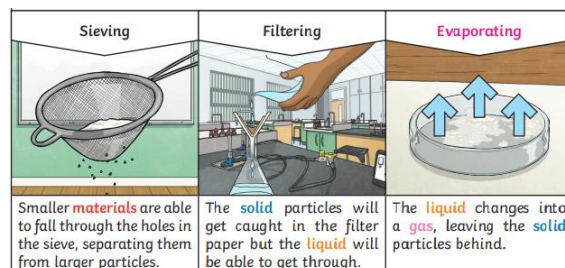
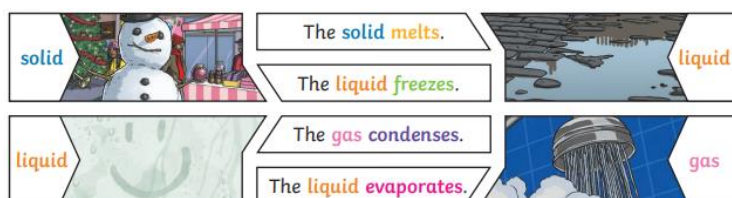


REVERSIBLE AND IRREVERSIBLE CHANGE



Key vocabulary	Definition
Material	The substance that objects are made of.
Reversible change	A change that can be changed back again.
Irreversible change	A change that cannot be changed back.
Soluble	Able to be dissolved.
Insoluble	Impossible to dissolve.
Solution	A liquid with a solid dissolved in it.
Dissolve	A solid breaks down into really small pieces in a liquid.
Filtering	To remove a small solid from a liquid or gas using a filter.
Filter	Paper, a sieve, charcoal or something with small holes in it.
Freeze	Turn from a liquid to a solid.
Melt	Turn from a solid to a liquid.
Evaporate	Turn from a liquid to a gas.
Condense	Turn from a gas to a liquid.

Key Knowledge and Understanding:

Know about solid, liquid and gas particles.
 Know that some materials will dissolve in liquid to form a solution.
 Be able 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. Given a mixture, can they separate it?
 Demonstrate that dissolving, mixing and changes of state are reversible changes.
 Know that changes can occur when different materials are mixed.
 Know that some material changes can be reversed and some cannot.
 Recognise that dissolving is a reversible change.
 Explain the difference between melting and dissolving.
 Know that mixtures of solids (of different particle size) can be separated by sieving.
 Carry out sieving practically.
 Know that mixtures of solids and liquids can be separated by filtering if the solid is insoluble (un-dissolved).
 Carry out filtering practically.
 Know that evaporation helps us separate soluble materials from water.
 Investigate ways to speed up evaporation; amount of liquid, temperature, wind speed.
 Know that freezing, melting and boiling changes can be reversed.
 Experience and 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. Link to cooking in DT.
 Researching how chemical changes have an impact on our lives, for example cooking.
 Research the creative use of new materials such as polymers, super-sticky and super-thin materials.

Dissolving
A solution is made when **solid** particles are mixed with **liquid** particles. **Materials** that will dissolve are known as soluble. **Materials** that won't dissolve are known as insoluble. A suspension is when the particles don't dissolve.

Sugar is a soluble **material**.

Sand is an insoluble **material**.

Irreversible changes often result in a new product being made from the old **materials**.
 For example, burning wood produces ash.
 Mixing vinegar and milk produces casein plastic.