SMRP Knowledge Organiser for Year 5: Materials

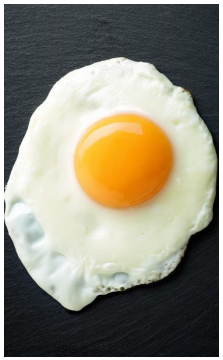
Science knowledge

Irreversible changes

A change is called irreversible if it cannot be changed back again. In an **irreversible change**, new materials are always formed. Sometimes these new materials are useful to us.

Heating

Heating can cause an irreversible change. For example you heat a raw egg to cook it. The cooked egg cannot be changed back to a raw egg again.



Mixing

Mixing substances can cause an irreversible change. For example, when vinegar and bicarbonate of soda are mixed, the mixture changes and lots of bubbles of carbon dioxide are made. These bubbles and the liquid mixture left behind, cannot be turned back into vinegar and bicarbonate of soda again.

Burning

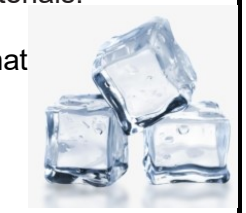
Burning is an example of an irreversible change. When you burn wood you get ash and smoke. You cannot change the ash and smoke back to wood again.

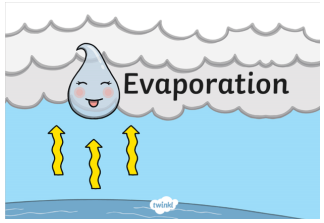
Reversible changes

Reversible and irreversible reactions are different.

If you can get back the substances you started the reaction with, that's a reversible reaction. A reversible change might change how a material looks or feels, but it doesn't create new materials.

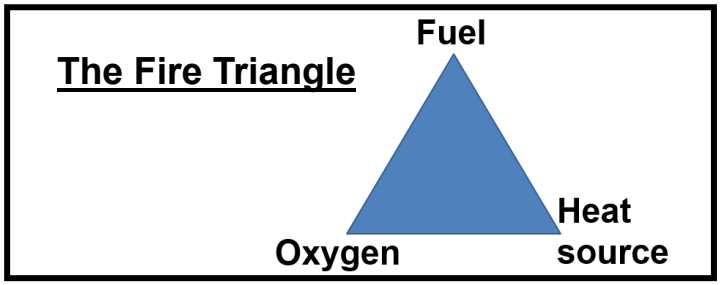
A reversible change is a change that can be undone or reversed.

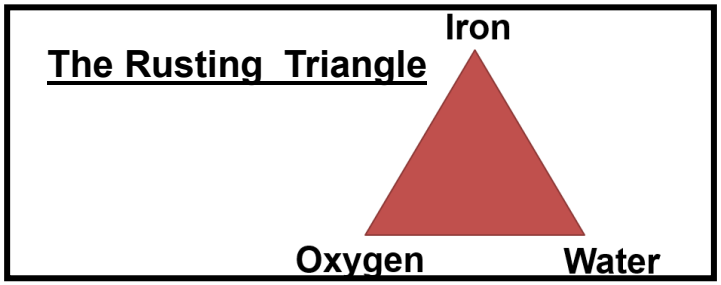




Examples of reversible reactions include dissolving, evaporation, melting and freezing.

Below are two examples of how different materials react to changes





Science Vocabulary

Word	Definition
material	From which something is made
reversible/ physical change	When a material can change state and back again
Irreversible/ chemical change	When a material changes state and **cannot** change back again
dissolving	When a solid mixes with liquid to make a solution
solubility	How soluble something is
burning	A specific type of chemical change
rust	A reddish brown flaking that forms on the surface of iron when it is exposed
evaporation	The process of turning from a liquid to a gas