Pye Bank CE Primary DSAT Knowledge Organiser

YEAR 6 — Chemistry: How can we change materials? — SCIENCE

KEY VOCABULARY

Chemical Change: a process in which two or more substances react together to produce a new substance.

Physical Change: a process in which materials are mixed together, they can appear to be in a different state.

Solute: a substance that dissolves in a liquid to form a solution.

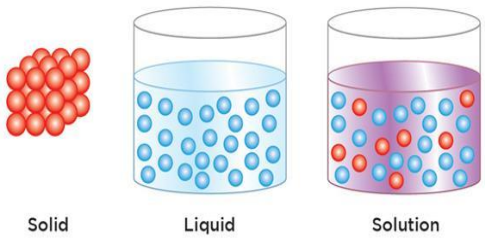
Solvent: the liquid in which a solute dissolves to form a solution.

Solution: it is a mixture where one substance is dissolved into another.

Mixture Form: When two or more materials are combined together but do not undergo a chemical reaction.

Compound Form: when two or more elements join together in a chemical reaction.

Dissolving: the process by which a solid, liquid or gas breaks down into small particles and mixes with a solvent so that it can no longer be distinguished separately in the solution.



KEY CONCEPT - Solutions

-A solvent is a substance that dissolves a solid, liquid, or gaseous solute.

-A solute is the substance dissolved in the solvent. When it dissolves, it looks as though it has disappeared, but in fact it has been broken down to become a part of the liquid.

-One example of a solution is salt water. You cannot see the salt, and the solution will remain if left alone.

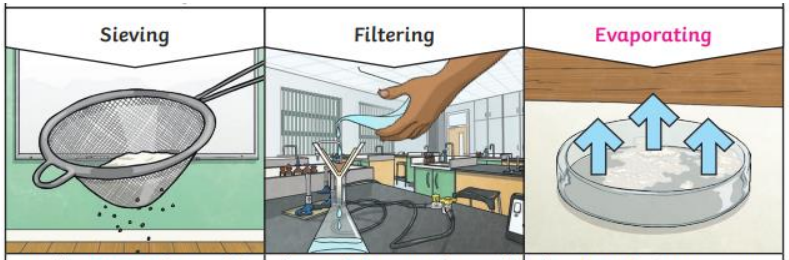
-Some mixtures and solutions can be separated, e.g. through processes such as sieving, filtering & evaporating. Salt and water can be separated by distillation.

STICKY KNOWLEDGE

1. Materials are the substances that things are made from.
2. The properties of materials make them useful for different purposes.
3. Materials have more than one property and can be natural or man-made. Properties can include the hardness, whether it conducts electricity, the shininess, or whether it is magnetic.
4. There are three main states of matter – solids, liquids, and gases.
5. The state of matter of materials can change, through processes such as freezing and melting.
6. Most reversible changes are known as physical changes.
7. Most irreversible changes are known as chemical changes.
8. Mixtures do not undergo a chemical change.
9. Compound forms react chemically when two or more elements join together. For example, water is a compound formed from the reaction between hydrogen gas and oxygen gas.

H_2O

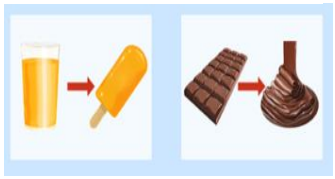
KEY CONCEPT – Separating Mixtures



Sieving	Filtering	Evaporating
Smaller materials are able to fall through the holes in the sieve, separating them from larger particles.	The solid particles will get caught in the filter paper but the liquid will be able to get through.	The liquid changes into a gas, leaving the solid particles behind.

KEY CONCEPT – Physical and Chemical Changes

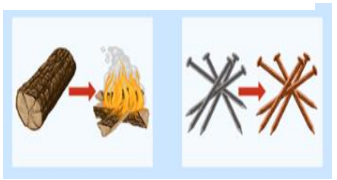
PHYSICAL CHANGES



-There are many ways in which materials can be changed, for example through heating, cooling, or mixing with other substances.

-Some changes can be reversed (e.g. the material can be returned to its previous form). These are more commonly known as physical changes. An example of this is the freezing of water into ice – it can be melted to become water again.

CHEMICAL CHANGES



-Other changes are irreversible. This means that that the changes cannot be 'undone.' Examples of this include cooking, baking, frying and burning materials. For example, you can fry a raw egg to cook it. You can't return it back to a raw egg again.

- Changes that involve the formation of new materials (e.g. mixing cement) are not normally reversible and are more commonly known as chemical changes.