

Science – Year 5 – Material Changes

Topic Overview

In this unit, we will explore different material changes that occur in the world such as dissolving, burning, rusting and evaporation. We will describe how and why some changes happen and identify different reversible and irreversible changes.

Key Knowledge

The three states of matter are solid, liquid and gas. A change of state is when matter changes from one state to another. Changes of state are reversible. Melting, freezing, evaporation and condensation are examples of reversible changes of state.

Some solids dissolve in liquids to form a solution. Solutions are always clear, though they may have a colour. When a solid dissolves, it breaks down and becomes so tiny we can no longer see it, but it is still there. A substance that dissolves is said to be soluble. One that does not is insoluble. Dissolving is reversible.

A sieve is a type of filter used to separate larger insoluble solids from a liquid. Filter paper is a type of sieve. Soluble solids cannot be recovered using filtering but can be using evaporation.

Evaporation can be used to separate a liquid from a dissolved substance. When a substance burns, it produces a flame. For burning to take place there must be fuel, oxygen and a high enough temperature. When things burn, new materials usually form. It is irreversible. Rust is reddish-brown and has a rough texture. It is a new material that is formed when iron or steel is exposed to oxygen in the air and water. Rusting is an irreversible change.

Important Vocabulary

Substance	The material something is made of.
State	The three common states of matter are solid, liquid and gas.
Dissolve	A solid or gas breaks down so small that it cannot be seen and mixes with the liquid.
Soluble	Solids and gases that dissolve in a liquid are soluble.
Insoluble	A material that will not dissolve is insoluble.
Solution	A mixture of a liquid with a solid or gas dissolved in it.
Separate	Divide something into different parts or groups.
Filter	Pour a mixture of liquid and solid through a fine mesh to separate the solid particles from the liquid.
Sieve	A tool with a mesh of holes that lets smaller pieces pass through while keeping the larger pieces.
Evaporate	To change from a liquid to a gas.
Reversible	A change that can be undone or changed back.
Irreversible	A change that cannot be undone or changed back to its original state.
Burn	To be on fire.
Rust	A reddish-brown material that forms when iron or steel reacts with water and oxygen from the air.

Assessment

I can explain the difference between reversible and irreversible changes.	I can explain what soluble means and can give three example substances.	I can successfully dissolve a solid in a liquid and recover it using evaporation.	I can give three examples of reversible and irreversible changes.	I can explain and give examples of melting, freezing, evaporation and condensation.
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