

Definitions and Concepts for WJEC (Wales) Chemistry GCSE

Topic 1.4 - The Ever-Changing Earth

*Definitions in **bold** are for higher tier only*

Definitions have been taken, or modified from the [WJEC \(Wales\) Specification for GCSE Chemistry. 3410. Version 2 March 2019](#)

Acid rain: Rain that is acidic due to gases, such as sulfur dioxide, reacting with water vapour in the clouds. Sulfur dioxide is produced from the burning of fossil fuels which contain sulfur impurities.

Climate change: A change in global climate patterns largely believed to be caused by the increase in concentration of carbon dioxide in the atmosphere.

Combustion: The burning of a substance in oxygen which leads to energy being transferred to the surroundings as heat and light. If there is sufficient oxygen present for the substance to burn then it is called complete combustion. Combustion leads to an increase of carbon dioxide in the atmosphere.

Conservative plate boundary: The plate boundary which occurs between two plates which slide past each other. An earthquake is created if the movement is sudden and large enough. No volcanoes occur at these boundaries.

Constructive plate boundary: The plate boundary which occurs between two plates which move away from each other. Magma rises up and fills the gap created, forming new rocks and sometimes, if the pressure is high enough, a volcanic eruption.

Continental drift theory: The theory that originally the continents were all connected in a supercontinent called a Pangaea and over time sections of the Earth's crust and mantle drifted apart to form the continents we see today. Developed by Alfred Wegener.

Destructive plate boundary: The plate boundary which occurs between two plates which move towards each other. The denser plate is pushed beneath the other, causing it to melt into magma. This magma rises up between the plates, creating a volcano or earthquake (dependent on whether the crust is breached).

Earth core: The centre of the Earth, made up of two parts: the inner core and the outer core. The inner core is a hot ball mostly made up of iron whereas the outer core is a molten layer consisting of mostly iron and nickel.

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Earth crust: The thinnest and outermost layer of the planet made up of various types of solid rock.

Fossil fuels: Non-renewable natural fuels, such as coal and gas, formed in the past from the remains of living organisms.

Global warming: An increase in the Earth's temperature due to the enhanced greenhouse effect which occurs when greenhouse gas concentrations are too high, causing the gases to trap too much heat.

Greenhouse effect: The increase in the temperature of the Earth's atmosphere due to the greenhouse gases in the atmosphere trapping infra-red radiation from the surface.

Greenhouse gases: Gases in the atmosphere which maintain temperatures on Earth high enough to support life. Greenhouse gases include water vapour, carbon dioxide and methane.

Incomplete combustion: Combustion which is carried out with insufficient oxygen is called incomplete and can lead to the production of toxic carbon monoxide and carbon particulates.

Mantle: The second layer of the Earth which lies below the crust and above the core. It is made of very slow moving solid and liquid rock, which allows the crust to move.

Photosynthesis: The reaction which takes place in plants in the presence of chlorophyll and sunlight (energy) where carbon dioxide and water react to produce glucose and oxygen.
Equation for photosynthesis: $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

Plate boundary: The divisions between the tectonic plates which cause different physical events, depending on the type of boundary. Plate boundaries can be conservative, destructive or constructive.

Plate tectonics theory: The theory that the Earth's crust is separated into plates which move over the molten mantle at a rate of a couple of centimetres per year.

Respiration: A reaction which occurs in all living organisms in which energy is produced from glucose. Carbon dioxide is a by-product.
Equation for respiration: $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$

