

# Definitions and Concepts for WJEC (Wales) Physics GCSE

## Topic 2.8: Half-Life

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

*Definitions marked by '\*\*' are for separate sciences only*

**Activity:** The rate at which an unstable nucleus decays. The activity of a radioactive source reduces over time.

**Becquerel:** The unit of radioactive activity.

**Carbon Dating:** A method of determining the age of a natural object by analysing the quantity of carbon isotopes present in it.

**Decay Curve:** A curve that shows how the number of radioactive nuclei in a sample, or the activity of a sample, decreases over time.

**Geiger-Muller Tube:** A device used to detect ionising radiation.

**Half-Life:** The time it takes for the number of unstable nuclei of an isotope in a sample to halve, or the time it takes for the initial count rate of a sample of the isotope to halve.

**PET Scanner:** A medical imaging device that uses radioactive tracers and detectors to form internal body images.

**Penetrating Power:** The ability of radiation to pass through another medium. The penetrating powers of different types of radiation vary.

**Random Nature of Radioactive Decay:** You cannot predict which nuclei in a radioactive sample will decay next, or when the next decay will occur - it is a random process.

**Radioactive Tracers:** A substance that can be admitted into a patient's body. It emits radiation that can be detected by detectors outside the body and allows images to be formed.

**Radiotherapy:** A form of cancer treatment that targets cancerous cells with highly concentrated and ionising radiation in an attempt to kill the unwanted cells.

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