

## Definitions and Concepts for WJEC (Eduqas) Chemistry GCSE

### Topic 6 - Reactivity Series and Extraction of Metals

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

Definitions have been taken, or modified from the [WJEC \(Eduqas\) Specification for GCSE Chemistry, C410, Version 3 January 2019](#)

**Anode:** The positive electrode. It is where negatively charged ions lose electrons in oxidation reactions. It is the electrode where oxygen is produced unless the solution contains halide ions - then the halogen is produced.

**Bacterial extraction:** A method of metal extraction which uses bacteria to extract metals from their ores. The bacteria breaks down low-grade ores to produce an acidic solution containing metal ions.

**Cathode:** The negative electrode. It is where positively charged ions gain electrons in reduction reactions. It is the electrode where hydrogen is produced if the metal in the electrolyte is more reactive than hydrogen.

**Displacement:** A chemical reaction in which a more reactive element displaces a less reactive element from its compound.

**Electrode:** A solid conductive material through which electricity can flow. Positive and negative electrodes are used in electrolysis to conduct electricity.

**Electrolysis:** The splitting up of an ionic compound using electricity. The electric current is passed through a substance causing chemical reactions at the electrodes which lead to the decomposition of the materials. Electrolysis is used for extracting metals from their ores when the metal is more reactive than carbon.

**Electrolyte:** A solution containing free ions from a molten or aqueous ionic substance. The ions are free to move to carry charge.

**Inert:** Unreactive. Inert electrodes are used in electrolysis to prevent the electrode material affecting the reactions.

**Ore:** A type of rock which contains metal compounds. The metals or metal compounds are present in sufficient amounts to make it worth extracting them.

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**Oxidation:** A reaction involving the gain of oxygen. **Oxidation is the loss of electrons.**

**Phytoextraction:** A method of metal extraction which uses plants to absorb the metal compounds through their roots. The plants are then burned so that the metal compound can be removed from the ash.

**Reactivity series:** A series in which metals are arranged in order of their reactivity. This can be used to predict products from reactions.

**Reduction:** A reaction involving the loss of oxygen. **Reduction is the gain of electrons.**

**Reduction with carbon:** Process used to extract metals from their oxides when the metal is less reactive than carbon. The metal oxide is heated with carbon so that carbon reduces the metal oxide to the metallic element.

