

## SC10a Electrolysis

Word	Pronunciation	Meaning
<b>anion</b>	<i>an-l-on</i>	A negatively charged ion, formed by gaining electrons (usually a non-metal ion).
<b>anode</b>		Positive electrode.
<b>cathode</b>		Negative electrode.
<b>cation</b>	<i>cat-l-on</i>	A positively charged ion formed by losing electrons.
<b>electrode</b>		A rod made of a metal or graphite that carries the current into or out of the electrolyte.
<b>electrolysis</b>	<i>e-lek-trol-is-is</i>	The process in which energy transferred by a direct electrical current decomposes electrolytes.
<b>electrolyte</b>	<i>e-lek-trO-lite</i>	An ionic compound that is molten or dissolved in water.
<b>half equation</b>		An ionic equation showing the electrons gained or lost in oxidation or reduction reactions.
<b>oxidation</b>	<i>ox-id-ay-shun</i>	A reaction in which oxygen is added to a chemical substance; loss of electrons by an atom or negative ion.
<b>reduction</b>	<i>re-duck-shun</i>	A reaction in which oxygen is lost by a chemical substance; gain of electrons by an atom or negative ion.

## SC10b Products from electrolysis

Word	Pronunciation	Meaning
<b>discharged</b>	<i>dis-charged</i>	In electrolysis, an ion is discharged when it gains or loses electrons to form a neutral atom or molecule.
<b>inert</b>		An electrode that is unreactive, such as graphite or platinum.

## SC11a Reactivity

Word	Pronunciation	Meaning
<b>cation</b>	<i>cat-l-on</i>	Ion with one or more positive charges.
<b>displacement reaction</b>		A reaction where a more reactive element takes the place of a less reactive element in a compound.
<b>half equation</b>		Ionic equation showing electron transfers in oxidation or reduction.
<b>oxidation</b>	<i>ox-id-ay-shun</i>	A reaction in which a substance gains oxygen or loses electrons.
<b>reactivity series</b>		A list of metals in order of reactivity with the most reactive at the top.
<b>redox reaction</b>		A reaction in which oxidation and reduction take place.
<b>reduction</b>	<i>re-duck-shun</i>	A reaction in which a substance loses oxygen or gains electrons.
<b>spectator ions</b>		Ions that do not change during a reaction.

## SC11b Ores

Word	Pronunciation	Meaning
<b>bioleaching</b>	<i>By-Oh-leech-ing</i>	Using bacteria to extract metals from their ores.
<b>electrolysis</b>	<i>e-lek-trol-is-is</i>	A process in which electrical energy from a direct current supply decomposes electrolytes.
<b>extraction</b>		A process in which a metal is obtained from its ore.
<b>leachate</b>	<i>leech-ate</i>	A solution produced when water or another solvent passes through a mixture of substances and dissolves some of them.
<b>native state</b>		A metal that occurs uncombined with any other element.
<b>ore</b>		A rock that contains a high concentration of a metal or metal compound.
<b>phytoextraction</b>	<i>fye-tow-ex-track-shun</i>	Using plants to extract metals from their ores.

## SC11c Oxidation and reduction

Word	Pronunciation	Meaning
<b>corrosion</b>	<i>cor-Oh-shun</i>	A reaction in which a metal reacts with air and sometimes water to form a metal oxide or hydroxide.
<b>oxidation</b>	<i>ox-id-ay-shun</i>	A reaction in which a substance gains oxygen or loses electrons.
<b>redox</b>		A reaction in which reduction and oxidation take place.
<b>reduction</b>	<i>re-duck-shun</i>	A reaction in which a substance loses oxygen or gains electrons.

<b>rusting</b>		The reaction between iron, air and water to form hydrated iron(III) oxide (rust).
<b>tarnish</b>		A dull film on a metal's surface.

### SC11d Life cycle assessment and recycling

<b>Word</b>	<b>Pronunciation</b>	<b>Meaning</b>
<b>life cycle assessment (LCA)</b>		A technique used to assess the environmental impact associated with all the stages in the life of a product from cradle to grave.
<b>recycling</b>		Converting waste materials into new products.

**SC12a Dynamic equilibrium**

Word	Pronunciation	Meaning
<b>closed system</b>		When substances cannot enter or leave an observed environment, e.g. a stoppered test tube.
<b>dynamic equilibrium</b>		When the forwards and backwards reactions in a reversible chemical reaction are occurring at the same rate.
<b>endothermic</b>		A type of reaction in which energy from the surroundings is transferred to the products, e.g. photosynthesis.
<b>exothermic</b>		A type of reaction in which energy is transferred to the surroundings from the reactants, e.g. combustion.
<b>open system</b>		A system into or from which substances can enter or leave, such as a reaction inside an open test tube.
<b>reversible reaction</b>		A chemical reaction that can work in both directions.

### SC13a Transition metals

Word	Pronunciation	Meaning
<b>catalyst</b>	<i>cat-a-list</i>	A substance that speeds up a process, without itself being used up.
<b>ductile</b>	<i>duk-tile</i>	A substance that can be stretched out to make a thin wire.
<b>malleable</b>	<i>mal-ee-uh-buhl</i>	A substance that can be hammered or rolled into shape without shattering.
<b>transition metal</b>	<i>tran-zi-shun met-al</i>	Metal element in the block between groups 2 and 3 in the periodic table.

### SC13b Corrosion

Word	Pronunciation	Meaning
<b>corrosion</b>	<i>kuh-rOh-zshun</i>	The gradual deterioration of a substance when it reacts with substances in the environment, for example when a metal oxidises in air.
<b>desiccant</b>		A substance that absorbs water or water vapour.
<b>oxidise</b>		To gain oxygen in a chemical reaction, or to lose electrons.
<b>rusting</b>		The corrosion of iron or steel. (Water and oxygen must be present for rusting to occur.)
<b>sacrificial protection</b>		Using a more reactive metal to protect iron from rusting.
<b>tarnish</b>		A thin layer that forms on a metal due to oxidation. A metal is also said to tarnish as this layer forms.

### SC13c Electroplating

Word	Pronunciation	Meaning
<b>anode</b>	<i>an-ode</i>	The positive electrode.
<b>cathode</b>	<i>cath-ode</i>	The negative electrode.
<b>electrolyte</b>	<i>e-lek-trO-lyte</i>	An ionic compound that is molten or dissolved in water.
<b>electroplating</b>		Using electricity to coat one metal with a thin layer of another metal.
<b>galvanising</b>	<i>gal-van-eYe-zing</i>	Coating iron or steel with a thin layer of zinc to improve its resistance to rusting.

### SC13d Alloying

Word	Pronunciation	Meaning
<b>alloy</b>	<i>al-oi</i>	A metal with one or more other elements (usually metals) added to improve its properties.
<b>alloy steel</b>	<i>al-oi steel</i>	Iron with other elements added to make an alloy.
<b>stainless steel</b>		Alloy steel containing elements such as chromium, to resist rusting.

**SC13e Uses of metals and their alloys**

<b>Word</b>	<b>Pronunciation</b>	<b>Meaning</b>
<b>ductile</b>	<i>duk-tile</i>	A substance that can be stretched to make a thin wire.
<b>malleable</b>	<i>mal-ee-uh-buhl</i>	A substance that can be hammered or rolled into shape without shattering.