

# Biology

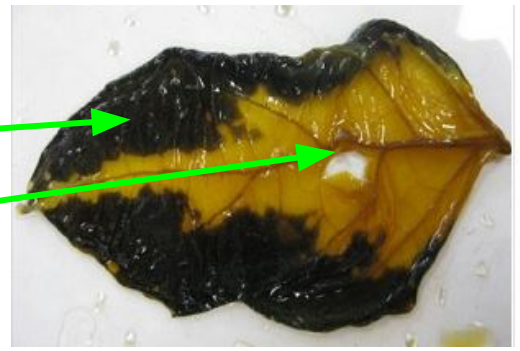
# GCSE Bioenergetics

1

Learned	Revised	Confident
_____ % Achieved: _____		

Starch present

No starch present



N <sup>ocv</sup>	Keyword	Definition
2	Aerobic	Respiration that involves the use of oxygen to transfer energy.
3	Anaerobic	Respiration that takes place <b>without</b> oxygen to transfer energy.
4	Fermentation	The process of breaking down sugars by anaerobic respiration in bacteria or yeast.
5	Metabolism	The sum of all the reactions in the cell or body. This is controlled by enzymes
6	Oxygen debt	The amount of extra oxygen the body needs after exercise to react with the accumulated lactic acid and remove it from the cells.
7	Photosynthesis	An endothermic reaction in which energy is transferred from the environment to chloroplasts by light.
8	Respiration	A chemical reaction that breaks down glucose to release energy.

N <sup>ocv</sup>	Facts Definition
9	<b>Factors affecting the rate of photosynthesis:</b> Carbon dioxide, Temperature, Light intensity
10	<b>Plants use glucose for:</b> Respiration, Making cellulose, Making amino acids, Converted and stored as lipids (fats), Converted and stored as starch, Stored as sucrose and other sugars in fruits.

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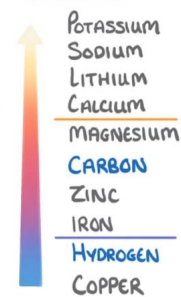
Chemistry

# GCSE Chemical changes

1

Acid Formula	Acid Name	Salt Name
HCl	Hydrochloric	Chloride
H <sub>2</sub> SO <sub>4</sub>	Sulphuric	Sulphate
HNO <sub>3</sub>	Nitric	Nitrate
H <sub>3</sub> PO <sub>4</sub>	Phosphoric	Phosphate

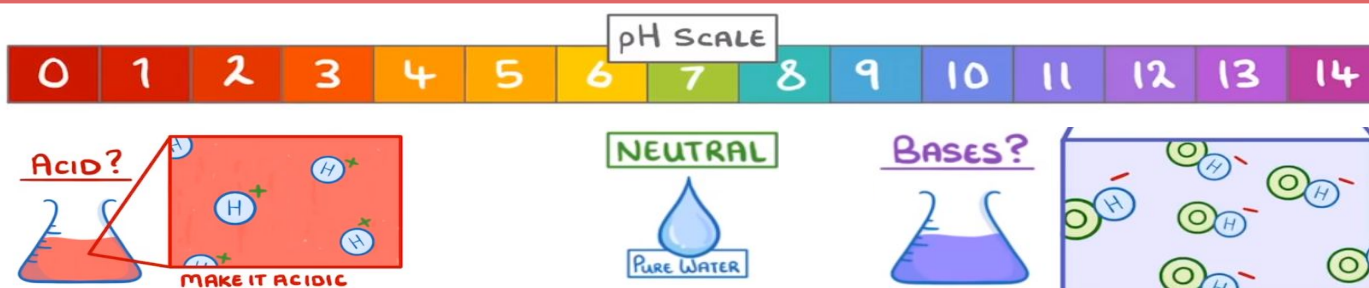
## REACTIVITY SERIES



Learned	Revised	Confident
_____ % Achieved: _____		

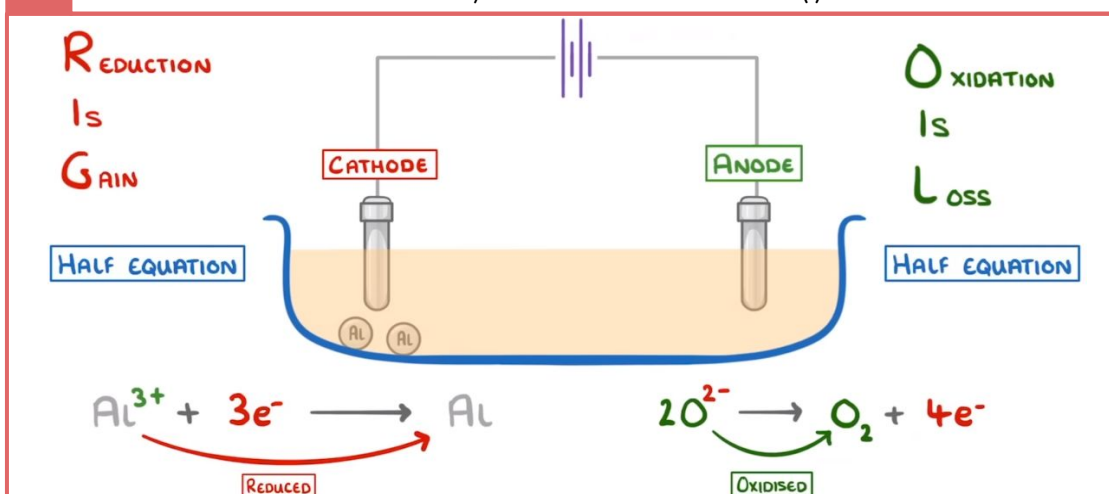
Nº	Keyword	Definition
2	Acid	Substance with a pH less than 7 that forms H <sup>+</sup> ions in solution e.g. H <sub>2</sub> SO <sub>4</sub>
3	Base	A substance that reacts with an acid in a neutralisation reaction e.g. CaO
4	Alkali	Substance with a pH greater than 7 that forms OH <sup>-</sup> ions in solution e.g. NaOH
5	Strong acid	Strong acids will fully ionise / dissociate in solution whereas weak acids only partially ionise / dissociate in solution
6	Neutralisation	A reaction between acids and bases where a neutral product i.e. water forms
7	Displacement	A more reactive element will replace a less reactive element from a compound
8	Oxidation	Where oxygen is gained or electrons are lost by a species
9	Reduction	Where oxygen is lost or electrons are gained by a species
10	Electrolysis	Breaking down a substance, usually ionic compounds, using electricity

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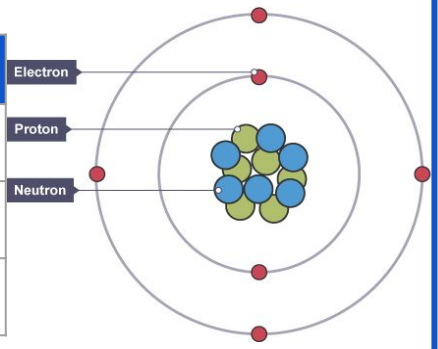
## Electrolysis of Aluminium oxide (l)



# Physics

# GCSE Atomic structure and radiation

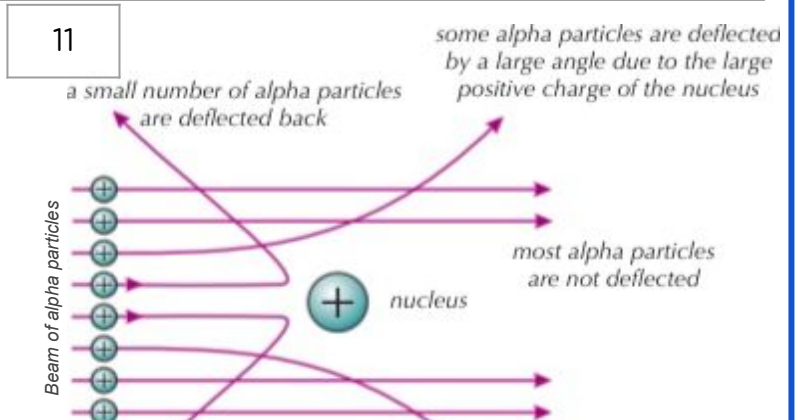
N°	Particle	Mass	Charge
1	Proton	1	+1
2	Neutron	1	0
3	Electron	1/2000	-1



Learned	Revised	Confident
_____ % Achieved: _____		

N°	Keyword	Definition
4	Activity	The number of nuclei of a sample that decay per second
5	Contamination	Has unwanted radioactive atoms on or in it
6	Half life	The time it takes for the number of nuclei of a radioactive isotope in a sample to half
7	Ion	A charged particle (an atom that has gained/lost electrons)
8	Irradiation	Exposure to radiation
9	Isotope	An element with a different number of neutrons

10	11
<p><b>SOLID SPHERE MODEL</b></p> <p><b>JOHN DALTON</b> 1803</p>	<p><b>PLUM PUDDING MODEL</b></p> <p><b>J.J. THOMSON</b> 1904</p>
<p><b>NUCLEAR MODEL</b></p> <p><b>ERNEST RUTHERFORD</b> 1911</p>	<p><b>PLANETARY MODEL</b></p> <p><b>NIELS BOHR</b> 1913</p>



N°	Type of radiation	Change in the nucleus	Ionising power	Range in air	Stopped by
12	$\alpha$ <b>alpha</b> particle (two protons and two neutrons)	nucleus loses two protons and two neutrons	highest ionising power	travels a few centimetres in air	stopped by a sheet of paper
13	$\beta$ <b>beta</b> particle (fast-moving electron)	a neutron changes into a proton and an electron	high ionising power	travels $\approx$ 1 m in air	stopped by a few millimetres of aluminium
14	$\gamma$ <b>gamma</b> radiation (short-wavelength, high-frequency EM radiation)	some energy is transferred away from the nucleus	low ionising power	virtually unlimited range in air	stopped by several centimetres of thick lead or metres of concrete