



Edexcel IGCSE Chemistry

Topic 1: Principles of chemistry

The Periodic Table

Notes





1		2												3	4	5	6	7	0		
Li 3		Be 4												B 5	C 6	N 7	O 8	F 9	Ne 10		
Na 11		Mg 12												Al 13	Si 14	P 15	S 16	Cl 17	Ar 18		
K 19		Ca 20	Sc 21	Ti 22	V 23	Cr 24	Mn 25	Fe 26	Co 27	Ni 28	Cu 29	Zn 30	Ga 31	Ge 32	As 33	Se 34	Br 35	Kr 36			
Rb 37		Sr 38	Y 39	Zr 40	Nb 41	Mo 42	Tc 43	Ru 44	Rh 45	Pd 46	Ag 47	Cd 48	In 49	Sn 50	Sb 51	Te 52	I 53	Xe 54			
Cs 55		Ba 56	La 57	Hf 72	Ta 73	W 74	Re 75	Os 76	Ir 77	Pt 78	Au 79	Hg 80	Tl 81	Pb 82	Bi 83	Po 84	At 85	Rn 86			
Fr 87		Ra 88	Ac 89																		

1.18 understand how elements are arranged in the Periodic Table: in order of atomic number, in groups and periods

- Elements are arranged in order of atomic (proton) number (bottom number) and so that elements with similar properties are in columns, known as groups.
- Elements in the same periodic group have the same amount of electrons in their outer shell, which gives them similar chemical properties.
- elements with the same number of shells of electrons are arranged in rows called periods

1.19 understand how to deduce the electronic configurations of the first 20 elements from their positions in the Periodic Table

- the electronic configuration of an element tells you how many electrons are in each shell around an electron's nucleus
- for example, sodium has 11 electrons: 2 in its most inner shell, then 8, then 1 in its outermost shell.
 - you can represent sodium's electronic configuration as: 2.8.1
- remember- electrons fill the shells closer to the nucleus before filling any further out. 1st shell holds 2 electrons, 2nd and 3rd hold 8

1.20 understand how to use electrical conductivity and the acid-base character of oxides to classify elements as metals or non-metals

- Metals are generally conductive (of electricity)
- Non metals (excluding graphite) are not conductive
- If an element is conductive and its oxide is basic then the element is a metal
- If an element is not conductive and its oxide is acidic then it's a non metal





1.21 identify an element as a metal or a non-metal according to its position in the Periodic Table

- Metals = elements that react to form positive ions.
 - Majority of elements are metals.
 - Found to the left and towards the bottom of the periodic table.
- Non-metals = elements that do not form positive ions.
 - Found towards the right and top of the periodic table
- divide can be seen by the red line in the periodic table at the top

1.22 understand how the electronic configuration of a main group element is related to its position in the Periodic Table

- group number: gives number of electrons in outer shell e.g. group 3 has 3 electrons in outer shell
- period number: gives number of electron shells e.g. period 1 has 1 shell of electrons

1.23 understand why elements in the same group of the Periodic Table have similar chemical properties

- number of electrons in outer shell is responsible for the way different elements react
- this means elements with the same number of electrons in the outer shell will undergo similar reactions
- therefore elements in the same group have similar chemical properties

1.24 understand why the noble gases (Group 0) do not readily react

- They have 8 electrons in their outer shell (except helium, which has 2).
- They are unreactive and do not easily form molecules, because they have a stable arrangement of electrons.

1	2								3	4	5	6	7	0			
Li	Be								B	C	N	O	F	He			
Na	Mg								Al	Si	P	S	Cl	Ar			
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															
															Noble gases		

