

1. ATOMIC STRUCTURE & THE PERIODIC TABLE		Rate topics 1 to 5
a.	Elements, compounds & mixtures	
b.	Separating mixtures	
c.	Development of atomic model	
d.	Mass & atomic number	
e.	Relative atomic mass	
f.	Electronic structure	
g.	Groups & periods	
h.	Development of periodic table	
i.	Metals & non-metals	
j.	Group 0 elements	
k.	Group 1 elements	
l.	Group 7 elements	
m.	Transition metals	

2. BONDING, STRUCTURE, & THE PROPERTIES OF MATTER		Rate topics 1 to 5
a.	Ionic bonding	
b.	Covalent bonding	
c.	Dot & cross diagrams	
d.	Metallic bonding	
e.	States of matter	
f.	Properties of ionic compounds	
g.	Properties of small molecules	
h.	Polymers & giant covalent structures	
i.	Properties of metals	
j.	Alloys	
k.	Diamond & graphite	
l.	Graphene & fullerenes	
m.	Nanoparticles	

3. QUANTITATIVE CHEMISTRY		Rate topics 1 to 5
a.	Balancing chemical equations	
b.	Conservation of mass	
c.	Relative formula mass	
d.	Estimating uncertainty	
e.	Concentration	
f.	Percentage yield	
g.	Atom economy	

4. CHEMICAL CHANGES		Rate topics 1 to 5
a.	The reactivity series	
b.	Extracting metals by reduction	
c.	Reacting acids with metals	
d.	Neutralisation of acids & naming salts	
e.	pH	
f.	Titrations	
g.	Electrolysis of molten ionic compounds	
h.	Electrolysis of aqueous solutions	

5. ENERGY CHANGES		Rate topics 1 to 5
a.	Exothermic & endothermic reactions	
b.	Reaction profiles	
c.	Cells & batteries	
d.	Hydrogen fuel cell	

6. THE RATE & EXTENT OF CHEMICAL CHANGE		Rate topics 1 to 5
a.	Calculating rate of reaction	
b.	Factors affecting rate of reaction	
c.	Collision theory & activation energy	
d.	Catalysts	
e.	Reversible reactions	
f.	Equilibrium	

7. ORGANIC CHEMISTRY		Rate topics 1 to 5
a.	Crude oil	
b.	Alkanes	
c.	Fractional distillation	
d.	Properties of hydrocarbons	
e.	Combustion reactions	
f.	Alkenes	
g.	Addition reactions	
h.	Cracking	
i.	Alcohols	
j.	Carboxylic acids	
k.	Addition polymerisation	
l.	Naturally occurring polymers	

8. CHEMICAL ANALYSIS		Rate topics 1 to 5
a.	Purity	
b.	Formulations	
c.	Paper chromatography	
d.	Tests for common gases	
e.	Flame tests	
f.	Identifying metal hydroxides	
g.	Tests for carbonates, halides & sulphates	
h.	Flame emission spectroscopy	
i.	Instrumental methods	

9. CHEMISTRY OF THE ATMOSPHERE		Rate topics 1 to 5
a.	Composition of Earth's atmosphere	
b.	Evolution of Earth's atmosphere	
c.	The greenhouse effect	
d.	Human activity & greenhouse gases	
e.	Global climate change	
f.	The carbon footprint	
g.	Atmospheric pollutants	

10. USING RESOURCES		Rate topics 1 to 5
a.	Using Earth's resources	
b.	Potable water	
c.	Waste water treatment	
d.	Life cycle assessment	
e.	Recycling	
f.	Preventing corrosion	
g.	Uses of alloys	
h.	Ceramics, polymers & composites	
i.	The Haber process	
j.	NPK fertilisers	

PRACTICALS		Rate topics 1 to 5
RP 1:	"Prepare a pure, dry sample of a soluble salt from an insoluble oxide or carbonate."	
RP 2:	"Determine the volumes of the solutions when reacting a strong acid and a strong alkali by titration."	
RP 3:	"Investigate the electrolysis of aqueous solutions (a hypothesis must be formed and developed)."	
RP 4:	"Investigate factors affecting temperature change when reacting solutions together."	
RP 5a:	"Investigate how concentration affects the rate of reaction by measuring the volume of gas produced (a hypothesis must be formed and developed)."	
RP 5b:	"Investigate how concentration affects the rate of reaction by observing a colour change (a hypothesis must be formed and developed)."	
RP 6:	"Use paper chromatography to separate coloured substances and determine R _f values."	
RP 7:	"Use appropriate chemical tests to identify unknown ionic substances (all ions covered in sections 8e, 8f and 8g)."	
RP 8:	"Identify pH and amount of dissolved solids in water samples from different sources, and use distillation to purify them."	

ASSESSMENTS	Duration	Marks	Topics
Paper 1 18/05/2026	1 hour 45 minutes	100 marks	Topics 1 – 5
Paper 2 12/06/2026	1 hour 45 minutes	100 marks	Topics 6 - 10

The Periodic Table of Elements

1	2	Key										3	4	5	6	7	0									
		relative atomic mass atomic symbol name atomic (proton) number																								
7 Li lithium 3	9 Be beryllium 4	<table border="1"> <tr> <td>11 B boron 5</td> <td>12 C carbon 6</td> <td>14 N nitrogen 7</td> <td>16 O oxygen 8</td> <td>19 F fluorine 9</td> <td>20 Ne neon 10</td> </tr> </table>										11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10	23 Na sodium 11	24 Mg magnesium 12	27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulphur 16	35.5 Cl chlorine 17	40 Ar argon 18	4 He helium 2
11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10																					
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36									
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[97] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	137 I iodine 53	131 Xe xenon 54									
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86									
[223] Fr francium 87	[226] Ra radium 88	[227] Ac* actinium 89	[267] Rf rutherfordium 104	[270] Db dubnium 105	[269] Sg seaborgium 106	[270] Bh bohrium 107	[270] Hs hassium 108	[270] Mt meitnerium 109	[281] Ds darmstadtium 110	[281] Rg rogersium 111	[285] Cn copernicium 112	[286] Nh nihonium 113	[289] Fl flerovium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[293] Ts tennessine 117	[294] Og oganesson 118									

* The Lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted. Relative atomic masses for Cu and Cl have not been rounded to the nearest whole number.