

Revision Checklist: GCSE AQA Chemistry (Higher Tier)

	1. ATOMIC STRUCTURE & THE PERIODIC TABLE	<u>Revised</u>
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	<u>Revised</u>
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	<u>Revised</u>
a.	Balancing chemical equations	
b.	Conservation of mass	
c.	Relative formula mass	
d.	Estimating uncertainty	
e.	Moles	
f.	Using moles to calculate masses	
g.	Using moles to balance equations	
h.	Limiting reactants	
i.	Concentration	
j.	Percentage yield	
k.	Atom economy	
l.	Moles & volumes of gases	

	4. CHEMICAL CHANGES	<u>Revised</u>
a.	The reactivity series	
b.	Reduction & oxidation	
c.	Extracting metals by reduction	
d.	Ionic & half equations	
e.	Reacting acids with metals	
f.	Neutralisation of acids & naming salts	
g.	pH	
h.	Titrations	
i.	Strong & weak acids	
j.	Electrolysis of molten ionic compounds	
k.	Electrolysis of aqueous solutions	

	5. ENERGY CHANGES	<u>Revised</u>
a.	Exothermic & endothermic reactions	
b.	Reaction profiles	
c.	Calculating energy change of reactions	
d.	Cells & batteries	
e.	Hydrogen fuel cell	

	6. THE RATE & EXTENT OF CHEMICAL CHANGE	<u>Revised</u>
a.	Calculating rate of reaction	
b.	Factors affecting rate of reaction	
c.	Collision theory & activation energy	
d.	Catalysts	
e.	Reversible reactions	
f.	Le Chatelier's principle	
g.	Factors which affect equilibrium	

9. CHEMISTRY OF THE ATMOSPHERE		Revised
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	<u>Revised</u>
a.	Using Earth's resources	
b.	Potable water	
c.	Waste water treatment	
d.	Low-grade copper ores	
e.	Life cycle assessment	
f.	Recycling	
g.	Preventing corrosion	
h.	Uses of alloys	
i.	Ceramics, polymers & composites	
j.	The Haber process	
k.	NPK fertilisers	

PRACTICALS	<u>Revised</u>
RP 1: "Prepare a pure, dry sample of a soluble salt from an insoluble oxide or carbonate."	
RP 2: "Determine the concentration of one of the solutions when reacting a strong acid and a strong alkali by titration (when the concentration of the other solution is known)."	
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	<u>Duration</u>	<u>Marks</u>	<u>Topics</u>
Paper 1	1 hour 45 minutes	100 marks	Topics 1 – 5
Paper 2	1 hour 45 minutes	100 marks	Topics 6 - 10

The Periodic Table of Elements

1	2	Key																18	19	20			
		relative atomic mass atomic symbol name atomic (proton) number																		4 He helium 2			
3 Li lithium 3	9 Be beryllium 4																	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 aluminum 13	28 Si silicon 14	29 P phosphorus 15	30 S sulfur 16	31 Cl chlorine 17	32 Ar argon 18
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	84 Br bromine 35	85 Kr krypton 36						
85 Rb rubidium 37	86 Sr strontium 38	90 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	98 Tc technetium 43	101 Ru ruthenium 44	101 Rh rhodium 45	102 Pd palladium 46	106 Ag silver 47	108 Cd cadmium 48	112 In indium 49	115 Sn tin 50	119 Sb antimony 51	126 Te tellurium 52	128 I iodine 53	131 Xe xenon 54						
133 Cs cesium 55	137 Ba barium 56	139 La lanthanum 57	178 Hf hafnium 58	181 Ta tantalum 59	184 W tungsten 60	186 Re rhenium 61	190 Os osmium 62	192 Ir iridium 63	195 Pt platinum 64	197 Au gold 65	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	[270] Sg seaborgium 106	[270] Bh bohrium 107	[270] Hs hassium 108	[270] Mt meitnerium 109	[281] Ds darmstadtium 110	[281] Rg roentgenium 111	[286] Nh nihonium 112	[286] Fl flerovium 114	[289] Mc moscovium 115	[293] Lv livermorium 116	[293] Ts tennessine 117	[294] Og oganeson 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.