AQA GCSE Chemistry Paper 2 checklist

This checklist goes with Medly's guide "AQA GCSE Chemistry Paper 2: every topic, the required practicals, marks and timing for 2027". It lists every Paper 2 sub-topic of AQA GCSE Chemistry (8462), which Combined Science: Trilogy (8464) shares except for the rows marked GCSE Chemistry only. The labels are AQA's: Higher tier only means "(HT only)" and GCSE Chemistry only means "(chemistry only)". Part means AQA labels only part of the sub-topic: the notes under each table say which part. Foundation tier papers do not test these parts. Trilogy papers do not test the rows marked GCSE Chemistry only. AQA also says Paper 2 questions may draw on the fundamental concepts and principles of topics 1 to 3, which are on the Paper 1 checklist.

Topic 6: The rate and extent of chemical change

Sub-topic	Higher tier only	GCSE Chemistry only	Done
4.6.1.1 Calculating rates of reactions	Part	No	☐
4.6.1.2 Factors which affect the rates of chemical reactions (required practical 5)	No	No	☐
4.6.1.3 Collision theory and activation energy	No	No	☐
4.6.1.4 Catalysts	No	No	☐
4.6.2.1 Reversible reactions	No	No	☐
4.6.2.2 Energy changes and reversible reactions	No	No	☐
4.6.2.3 Equilibrium	No	No	☐
4.6.2.4 The effect of changing conditions on equilibrium	Yes	No	☐
4.6.2.5 The effect of changing concentration	Yes	No	☐
4.6.2.6 The effect of temperature changes on equilibrium	Yes	No	☐
4.6.2.7 The effect of pressure changes on equilibrium	Yes	No	☐

4.6.1.1: the Higher tier only part is calculating the gradient of a tangent to the curve as a measure of rate of reaction at a specific time. AQA also says, without a label: "For the Higher Tier, students are also required to use quantity of reactants in terms of moles and units for rate of reaction in mol/s."

Topic 7: Organic chemistry

Sub-topic	Higher tier only	GCSE Chemistry only	Done
4.7.1.1 Crude oil, hydrocarbons and alkanes	No	No	☐
4.7.1.2 Fractional distillation and petrochemicals	No	No	☐
4.7.1.3 Properties of hydrocarbons	No	No	☐

Sub-topic	Higher tier only	GCSE Chemistry only	Done
4.7.1.4 Cracking and alkenes	No	No	☐
4.7.2.1 Structure and formulae of alkenes	No	Yes	☐
4.7.2.2 Reactions of alkenes	No	Yes	☐
4.7.2.3 Alcohols	No	Yes	☐
4.7.2.4 Carboxylic acids	Part	Yes	☐
4.7.3.1 Addition polymerisation	No	Yes	☐
4.7.3.2 Condensation polymerisation	Yes	Yes	☐
4.7.3.3 Amino acids	Yes	Yes	☐
4.7.3.4 DNA (deoxyribonucleic acid) and other naturally occurring polymers	No	Yes	☐

4.7.2.4: the Higher tier only part is explaining why carboxylic acids are weak acids in terms of ionisation and pH.

Topic 8: Chemical analysis

Sub-topic	Higher tier only	GCSE Chemistry only	Done
4.8.1.1 Pure substances	No	No	☐
4.8.1.2 Formulations	No	No	☐
4.8.1.3 Chromatography (required practical 6)	No	No	☐
4.8.2.1 Test for hydrogen	No	No	☐
4.8.2.2 Test for oxygen	No	No	☐
4.8.2.3 Test for carbon dioxide	No	No	☐
4.8.2.4 Test for chlorine	No	No	☐
4.8.3.1 Flame tests	No	Yes	☐
4.8.3.2 Metal hydroxides	No	Yes	☐
4.8.3.3 Carbonates	No	Yes	☐
4.8.3.4 Halides	No	Yes	☐
4.8.3.5 Sulfates (required practical 7)	No	Yes	☐
4.8.3.6 Instrumental methods	No	Yes	☐
4.8.3.7 Flame emission spectroscopy	No	Yes	☐

Topic 9: Chemistry of the atmosphere

Sub-topic	Higher tier only	GCSE Chemistry only	Done
4.9.1.1 The proportions of different gases in the atmosphere	No	No	☐
4.9.1.2 The Earth's early atmosphere	No	No	☐
4.9.1.3 How oxygen increased	No	No	☐
4.9.1.4 How carbon dioxide decreased	No	No	☐
4.9.2.1 Greenhouse gases	No	No	☐
4.9.2.2 Human activities which contribute to an increase in greenhouse gases in the atmosphere	No	No	☐
4.9.2.3 Global climate change	No	No	☐
4.9.2.4 The carbon footprint and its reduction	No	No	☐
4.9.3.1 Atmospheric pollutants from fuels	No	No	☐
4.9.3.2 Properties and effects of atmospheric pollutants	No	No	☐

Topic 10: Using resources

Sub-topic	Higher tier only	GCSE Chemistry only	Done
4.10.1.1 Using the Earth's resources and sustainable development	No	No	☐
4.10.1.2 Potable water (required practical 8)	No	No	☐
4.10.1.3 Waste water treatment	No	No	☐
4.10.1.4 Alternative methods of extracting metals	Yes	No	☐
4.10.2.1 Life cycle assessment	No	No	☐
4.10.2.2 Ways of reducing the use of resources	No	No	☐
4.10.3.1 Corrosion and its prevention	No	Yes	☐
4.10.3.2 Alloys as useful materials	No	Yes	☐
4.10.3.3 Ceramics, polymers and composites	No	Yes	☐
4.10.4.1 The Haber process	Part	Yes	☐
4.10.4.2 Production and uses of NPK fertilisers	No	Yes	☐

4.10.4.1: the Higher tier only part is interpreting graphs of reaction conditions against rate; applying the principles of dynamic equilibrium to the Haber process; explaining the trade-off between rate of production and position of equilibrium; and explaining how the commercially used conditions relate to the availability and cost of raw materials and energy supplies, control of

equilibrium position and rate. Recalling a source for the nitrogen and a source for the hydrogen is for both tiers.

Required practicals on Paper 2

Required practical	Sub-topic	GCSE Chemistry	Trilogy	Done
Investigate how changes in concentration affect the rates of reactions by a method involving measuring the volume of a gas produced and a method involving a change in colour or turbidity	4.6.1.2	5	11	☐
Investigate how paper chromatography can be used to separate and tell the difference between coloured substances	4.8.1.3	6	12	☐
Use of chemical tests to identify the ions in unknown single ionic compounds	4.8.3.5	7 (GCSE Chemistry only)	Not in Trilogy	☐
Analysis and purification of water samples from different sources, including pH, dissolved solids and distillation	4.10.1.2	8	13	☐