

# AQA Chemistry

## GCSE Student checklist

C4

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

### Chemical calculations


Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
C4.1 Relative masses and moles	I can use the periodic table to identify the relative atomic mass for the first 20 elements.	<input type="checkbox"/>	I can use the periodic table to find the relative atomic mass of all elements.	<input type="checkbox"/>	I can explain why some elements have the same relative atomic mass as each other and why relative atomic masses may not be a whole number.	<input type="checkbox"/>
	I can calculate the relative formula mass for familiar compounds when the formula is supplied and is without brackets.	<input type="checkbox"/>	I can calculate the relative formula mass for unfamiliar compounds when the formula is given.	<input type="checkbox"/>	I can calculate the number of moles or mass of a substance from data supplied.	<input type="checkbox"/>
			I can state the units for the amount of substance.	<input type="checkbox"/>	I can convert between units in calculations.	<input type="checkbox"/>
C4.2 Equations and calculations Ⓜ			I can explain why chemical equations must be balanced.	<input type="checkbox"/>	I can interpret balanced symbol equations in terms of mole ratios.	<input type="checkbox"/>
			I can calculate the relative formula mass for one substance when the relative formula masses are given for all the other substances in a balanced symbol equation.	<input type="checkbox"/>	I can use balanced symbol equations to calculate reacting masses.	<input type="checkbox"/>
C4.3 From masses to balanced equations Ⓜ			I can explain why chemical equations must be balanced.	<input type="checkbox"/>	I can explain the effect of a limiting reactant on the amount of product made.	<input type="checkbox"/>
			I can identify the limiting reactant in a chemical reaction.	<input type="checkbox"/>	I can use balanced symbol equations to calculate reacting masses when there is a limiting reactant.	<input type="checkbox"/>
C4.4 Yield of a	I can state the definition of theoretical yield, actual yield, and percentage yield.	<input type="checkbox"/>	I can calculate percentage yield when the actual yield is given and the mass of the limiting reactant is given.	<input type="checkbox"/>	I can calculate the percentage yield using a variety of units and conversions.	<input type="checkbox"/>

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chemical reaction	I can calculate percentage yield when actual yield and theoretical yield are given.	<input type="checkbox"/>	I can list reasons why actual yield is often lower than theoretical yield.	<input type="checkbox"/>	I can justify why percentage yield can never be above 100%.	<input type="checkbox"/>
C4.5 Atom economy	I can calculate the formula mass of substances when the formula is given.	<input type="checkbox"/>	I can calculate the atom economy for a given chemical reaction.	<input type="checkbox"/>	I can evaluate different reactions to decide the best production method of a chemical.	<input type="checkbox"/>
	I can recognise a covalent compound from its formula, name, or diagram showing bonds.	<input type="checkbox"/>	I can explain why using reactions with high atom economy is important.	<input type="checkbox"/>	I can explain why the sum of the formula masses of the reactants is the same as the sum of the formula masses of the products.	<input type="checkbox"/>
	I can state a definition of atom economy.	<input type="checkbox"/>				
C4.6 Expressing concentrations 			I can explain how concentration of a solution can be changed.	<input type="checkbox"/>	I can calculate the concentration of a solution when the number of moles and volume in cm <sup>3</sup> is given.	<input type="checkbox"/>
			I can calculate the concentration, in mol/dm <sup>3</sup> , of a solution when the number of moles and volume in dm <sup>3</sup> is given.	<input type="checkbox"/>	I can calculate the mass of a chemical when any volume and concentration is given and independently express their answers to an appropriate number of significant figures.	<input type="checkbox"/>
			I can calculate the concentration of a solution in g/dm <sup>3</sup> of a solution when the number of moles and volume in dm <sup>3</sup> is given.	<input type="checkbox"/>	I can calculate the amount of solute in a solution using the concentration of the solution.	<input type="checkbox"/>
C4.7 Titrations			I can calculate a titre.	<input type="checkbox"/>	I can justify the use of a pipette and burette for a titration, evaluating the errors involved in reading these instruments.	<input type="checkbox"/>
			I can describe how an indicator can be used to determine the end point.	<input type="checkbox"/>	I can explain how precise results are obtained in a titration.	<input type="checkbox"/>
			I can explain how accuracy can be improved in a titration.	<input type="checkbox"/>	I can justify the use of an indicator in an acid-base titration.	<input type="checkbox"/>

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C4.8 Titration calculations Ⓜ		I can calculate the amount of acid or alkali needed in a neutralisation reaction.	<input type="checkbox"/>	I can calculate the unknown concentration of a reactant in a neutralisation reaction when the volumes are known and the concentration of one reactant is also known.	<input type="checkbox"/>
		I can convert units.	<input type="checkbox"/>	I can extract data from given information to perform multi-step calculations independently.	<input type="checkbox"/>
C4.9 Volumes of gases Ⓜ		I can calculate the amount in moles of gas in a given volume at room temperature and pressure.	<input type="checkbox"/>	I can suggest how the volume of gas would change when temperature or pressure was changed.	<input type="checkbox"/>
		I can convert units.	<input type="checkbox"/>	I can calculate the moles or volume of a gaseous substance involved in a chemical reaction.	<input type="checkbox"/>