

Blue Pathway								
Purple Pathway								
Orange Pathway								
	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11	Step 12
AO1 Remember	Describe how to separate mixtures	Define pure, impure & formulation	Describe how to paper chromatography works	Describe how to test for metals ions, carbonates, halides and sulphates	Describe the test for chlorine & other common gases	Write balanced equations of producing insoluble hydroxides	Identify formulations given appropriate information	Always use appropriate and accurate scientific language and the correct SI units
	Remember a range of basic facts and put them into structured sentences in a topic.	Explain how separation techniques for mixtures work	Use appropriate terminology in answers (key words and phrases)	Describe flame emission spectroscopy	Explain tests for metals ions, carbonates, halides and sulphates	Describe instrumental techniques and give advantages compared to chemical tests	Identify substances from gas tests	
		Write balanced equation for test for carbon dioxide					Explain coloured and white precipitates and redissolve	
AO2 Application	Use word equations	Use word & symbol equations	Identify pure and impure substances from data.	Use state symbols in equations (s), (l), (g) & (aq)	Suggest how chromatograms show pure/impure substances	Always make effective use of data to support evidence.	Interpret chromatograms and determine RI values	Identify substances using results of anion/cation tests
	Sometimes use data to support evidence.	Consistently use and sometimes rearrange equations in calculations.		Suggest some applications for making substances impure				
	Consistently use equations in calculations.		Suggest separation and purification techniques					
AO3 Analyse and Evaluate	Recognise anomalous results and spot some causes of error in experimental procedures.	Draw conclusions consistent with the available evidence	Identify some causes of error and uncertainty in data or experimental procedures.	Evaluate the reliability of methods in detail.	Suggest further questions that may arise from results of investigations and data analysis and evaluation.	Identify causes of error and uncertainty in data or experimental procedures.	Suggest detailed improvement to methods where reliability may be a concern	Critically analyse data to draw logical, well-evidenced conclusions
AO3 Experimental Procedures	Identify variables in an investigation	Make a chromatogram	Select and apply appropriate experimental techniques	Accurately make and record observations and measurements	Make more complex and quantitative predictions using scientific knowledge and understanding	Safely carry out practical investigations by creating a full risk assessment	Justify the choice of experimental methods and apparatus	Use all the correct scientific language throughout.
	Carry out flame tests and recall metal colours	Carry out tests for halides and carbonates	Correctly use an appropriate number of decimal places					