



	Lessons Sequence					
TOPIC (S) CHEMICAL ANALYSIS	1. Pure substances and formulations 2. Chromatography (including required practical)		3. Testing for gases 4. Chemical tests (required practical) 5. Flame tests 6. Metal hydroxides		7. Carbonates, Halides and Sulphates 8. Instrumental methods 9. Flame emission spectroscopy	
Knowledge & Skills development	<ul style="list-style-type: none"> Understanding of the difference between pure substances and formulations and how boiling and melting points can be used to distinguish pure from impure substances To be able to carry out chromatography and calculate Rf values Knowledge of the different tests for oxygen and hydrogen Knowledge of the different tests for carbon dioxide and chlorine gas Identify specific ions from the results of flame tests Use sodium hydroxide solution to identify cations 			<ul style="list-style-type: none"> Write balanced equations for the reactions to produce the insoluble hydroxides Describe the tests to identify carbonates, halides and sulphates State advantages of instrumental methods compared with chemical tests Interpret an instrumental result given appropriate data in chart or tabular form, when accompanied by a reference set in the same form 		
Assessment / Feedback Opportunities	Targeted questioning throughout topic	Teacher assessment of practical skills during investigation - verbal	Knowledge Recall Quizzes	Deep marking of written task in students books	Topic Test	Targeted exam questions – teacher or self-assessed
Cultural Capital	<ul style="list-style-type: none"> Possible link to chemistry department university outreach 					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	<ul style="list-style-type: none"> Listening to others during presentations Working in groups during practical work or research tasks 					
Reading opportunities	<ul style="list-style-type: none"> Recommended Read: All About Chemistry (Big Questions) (Robert Winston) 					
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest Pure, formulation, chromatography, retention, compound, component, separate, interpret, ion, cation, anion, precipitate, dilute, spectroscopy					
Digital Literacy	SharePoint resources including topic quizzes Possible use of excel to plot graphs and analyse data, powerpoint, word, etc to present information, internet for research					
Cross-Curricular Links	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators					
Careers	Science technical, chemical analyst for industry and the government					