Yr13 Chemistry

MAGHULL HIGH SCHOOL – CURRICULUM MAP

	Sequence				
TOPIC (S) **Organic Reactions**	1. Organic Synthesis 2. Nuclear Magnetic Resonance Spectroscopy			3. Chromatography 4. Chromatography Required Practical	
Knowledge & Skills development	• Explain why chemists aim to design processes that do not require a solvent and that use non-hazardous starting materials • Explain why chemists aim to design production method with fewer steps that have a high percentage atom economy • Use reactions in this specification to devise a synthesis, with up to four steps, for an organic compound • The use of the δ scale for recording chemical shift • Explain why TMS is a suitable substance to use as a standard • Use ^{1}H NMR and ^{13}C NMR spectra and chemical shift data from the Chemistry Data Booklet to suggest possible structures or part structures for molecules			• Use integration data from 1H NMR spectra to determine the relative numbers of equivalent protons in the molecule • Use the n+1 rule to deduce the spin–spin splitting patterns of adjacent, non-equivalent protons, limited to doublet, triplet and quartet formation in aliphatic compounds. • The processes of thin-layer chromatography, column chromatography and gas chromatography • Calculate Rf values from a chromatogram • Compare retention times and Rf values with standards to identify different substances • Separation of species by thin-layer chromatography	
Assessment / Feedback Opportunities	Exam questions – teacher assessed	Exam questions – self assessed	Extended writing task – teacher assessed	Deep marking of required practical in lab books	Topic assessment
Cultural Capital	•				
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	• •				
Reading opportunities	• Recommended Read: Organic Chemistry I For Dummies by Arthur Winter				
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error Synthesis, Organic, Nuclear Magnetic Resonance, Chromatography, Species, Aliphatic, Retention				
Digital Literacy	The use of excel to plot graphs and analyse data MSOffice35 apps including SharePoint				
Cross-Curricular Links	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators				
Careers	Chemical Engineering, Drug Development, Pharmacy, Forensic Scientist, Food Scientist, Environmental Consultant				