



MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit: Organic Reactions LESSONS	1. Organic Synthesis 2. Nuclear Magnetic Resonance Spectroscopy	3. Chromatography 4. Chromatography Required Practical	
Knowledge & Skills Development	<ul style="list-style-type: none"> 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 ^1H NMR and ^{13}C NMR spectra and chemical shift data from the Chemistry Data Booklet to suggest possible structures or part structures for molecules 	<ul style="list-style-type: none"> 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 R_f values from a chromatogram Compare retention times and R_f values with standards to identify different substances Separation of species by thin-layer chromatography 	
Assessment / Feedback Opportunities	Formative Assessment Teacher questioning Quizzes Exam style questions	Summative assessment End of topic assessment Exam questions in future end of topic assessments to assess recall	
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		
Literacy/Reading Opportunities	Subject specific vocabulary introduced before reading of related texts Word etymology from Latin and Greek roots Reading of simple and complex sentences, paragraphs, articles Scientific writing including structuring methods, comparisons and evaluations		
Cross Curricular Themes	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators, significant figures		

Personal Development (Including British Values, RSE, Citizenship)	None
Career Opportunities	Chemical Engineering, Drug Development, Pharmacy, Forensic Scientist, Food Scientist, Environmental Consultant