Yr12 Chemistry – Unit 6.2

MAGHULL HIGH SCHOOL – CURRICULUM MAP

	Sequence		
TOPIC (S) **ORGANIC ANALYSIS**	1. Identification of functional groups 2. Mass spectrometry	3. Infra-red spectroscopy	
Knowledge & Skills development	• Know the reactions of functional groups: alcohol, aldehyde, alkene and carboxylic acid • **Required practical 6** Tests for alcohol, aldehyde, alkene and carboxylic acid. • Know mass spectrometry can be used to determine the molecular formula of a compound. • Use precise atomic masses and the precise molecular mass to determine the molecular formula of a compound.	• Know bonds in a molecule absorb infrared radiation at characteristic wavenumbers. • Know 'Fingerprinting' allows identification of a molecule by comparison of spectra. • Use infrared spectra and the Chemistry Data Sheet or Booklet to identify particular bonds, and therefore functional groups, and also to identify impurities. • Know the link between absorption of infrared radiation by bonds in CO2, methane and water vapour and global warming. • Use data in the Chemistry Data Sheet or Booklet to suggest possible structures for molecules.	
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	• Use of specialist equipment				
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	• How accurate was law and prosecution before science?				
Reading opportunities	• Recommended Read: https://www.news-medical.net/life-sciences/Mass-Spectrometry-as-a-Tool-in-Forensic-Science.aspx#:~:text=With%20the%20growing%20number%20of,has%20ever%20been%20possible%20before.				
Key Vocabulary	Aldehyde, carboxylic acid, alcohol, functional group, mass spectrometry, fingerprinting, spectra, infrared radiation, wavenumbers,Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error				
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 History and law – use of science in forensics				
Careers	Organic mass spectrometrist, materials tester, forensic scientist, analytic chemist				