The English Martyrs Catholic School and Sixth Form College

Chemistry Year 12 - B	Module 1	Module 2	Module 3
Topic Theme and Intent	Students learn about **alkanes and halogenoalkanes.** These topics are studied to provide the foundations for further study in organic chemistry. Students learn about free radical chain reactions and their importance in the atmosphere. Students also start to describe reactions in terms of reaction mechanisms.	Students learn about **alkenes, alcohols and organic analysis.** These topics are studied so that students can look in more detail at the reaction mechanisms that take place in organic reactions. Students also use chemical tests to identify organic molecules.	Students learn about **periodicity, redox and the chemistry of Groups 2 and 7.** These topics are studied so that students understand some of the fundamental principles of inorganic chemistry. They build on the work done on electronic structure and bonding and look at reactions in terms of reduction and oxidation.
Knowledge	• IUPAC conventions for naming organic molecules. • Free radical reactions. • The use of crude oil and environmental issues. • Nucleophilic substitution and elimination reactions.	• Electrophilic addition reactions of alkenes, and the use of alkenes. • Dehydration and oxidation of alcohols, and chemical tests for organic compounds. • Use of Mass spectrometry and infra-red spectroscopy.	• Periodic trends in physical properties. • Oxidation, reduction and redox equations • Group 2, the alkaline earth metals • Group 7(17), the halogens
Skills	Students analyse data to provide evidence to support theories for changes in the atmosphere.	Students will isolate an organic product by distillation.	Students use simple chemical tests to identify a range of positive and negative ions.
Literacy Links	**Reading –** Students will read about the issues with the ozone layer. **Writing –** Students start to communicate scientific ideas and concepts through writing. **Oracy –** Students start to use scientific vocabulary in discussion and question and answering.	**Reading –** Students will read about the use of alcohols and their oxidation reactions. **Writing –** Students practise communicating scientific ideas and concepts through writing. **Oracy –** Students practise the use scientific vocabulary in discussion and question and answering.	**Reading –** Students will read about patterns in the periodic table. **Writing –** Students will communicate scientific ideas and concepts through writing. **Oracy –** Students use scientific vocabulary in discussion and question and answering.
Essential Vocabulary	Structural Isomers, Stereoisomers, Chloroalkanes, Halogenoalkane, Nucleophilic substitution, Elimination.	Electrophilic addition, Carbocation, Polymer, Dehydration, Oxidation, Ketone, Aldehyde, Carboxylic acid	Oxidation, Reduction, Oxidising agent, Reducing agent, Precipitate

Disciplinary Reading	Reading for Pleasure		
CGP Books – A level Chemistry, & Oxford Revise A level Chemistry.	T. Gray - Molecules: The elements and the architecture of everything	B. Bryson – A short history of nearly everything	Dr. Nguyen-Kim – Chemistry for Breakfast