

	Year 11 Chemistry					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer
BIG Q Content (max 5) Please log into Seneca to support your child to understand this learning	How are processes designed to ensure that enough product is produced within a sufficient time? Calculate rate of a reaction. Predict the effect of changing conditions on rate of reaction. Identify catalysts in reactions and explain how they work. Describe the energy transfer in a reversible reaction. Predict the effect of changes on systems at equilibrium (HT only)	How do chemists analyse chemicals and take organic molecules and modify them to make new and useful materials such as pharmaceuticals and perfumes? Describe the formation and composition of crude oil. Explain how fractional distillation works. Describe and explain the usefulness of cracking. Compare pure and impure substances. Describe methods to test for gases.	How do scientists understand the impact of human activities on the climate? Describe the evolution of the atmosphere. Describe the greenhouse effect. Describe the potential effects of global climate change. Describe ways to reduce our carbon footprint. Describe and explain the problems caused by increased amounts of pollutants.	How do we obtain water of appropriate quality for life? Evaluate ways of reducing the use of limited resources. Compare potable water and pure water. Explain the steps in the treatment of fresh water. Describe and explain the stages in the treatment of wastewater. Analyse water samples.	How do scientists evaluate and minimise the total environmental impact of a product? Describe the stages in a lifecycle assessment. Interpret a lifecycle assessment. Evaluate alternative biological methods of metal extraction.	Revision
Vocabulary (max 10) Please use your child's knowledge notes to help them learn these words	Activation energy Anhydrous Catalyst Closed system Collision frequency Equilibrium Hydrated Rate of reaction Reversible reaction Le Châtelier's Principle (HT only)	Alkanes Chromatography Cracking Formulation Fractional distillation Hydrocarbon Mixture Pure substance Retention factor Saturated	Atmosphere Carbon footprint Fossil fuels Global dimming Greenhouse effect Greenhouse gas Incomplete combustion Nitrogen oxides Particulates Pollutants	Non-renewable Potable water Pure water Recycle Renewable resource Sedimentation Sterilisation Sustainable development Water conservation Water resources	Extraction Life cycle assessment (LCA) Manufacturing Disposal Bioleaching (HT only) Phytomining (HT only)	
Catholic Link	Rights and Responsibilities: Controlling the rate of industrial chemical reactions prevents runaway reactions and explosive hazards.	Care for God's Creation: Hydrocarbons are non-renewable; consuming them rapidly depletes resources meant for future generations.	Option for the Poor and Vulnerable: Lower-income communities often suffer the worst health and economic impacts of atmospheric chemical shifts, despite contributing the least to emissions.	Care for God's Creation: Environmental stewardship of the Earth's limited freshwater supplies.	Solidarity: Wealthier nations must share advanced chemical recycling technologies with developing countries to solve global waste crises.	
Careers Link	Process Chemist, Organic Chemist, Chemical Analyst	Organic Chemist, Pharmacologist, Petroleum Chemist	Forensic Chemist, Medical Laboratory Scientist, Industrial Chemist	Environmental Consultant, Environmental Toxicologist, Air Quality Scientist	Water Resources Scientist, Environmental Policy Advisor	

Ways to enrich the Y11 Chemistry curriculum at home:

- Use the online simulator to recap the required practicals for paper 2 <https://www.focuslearning.co.uk/programmes/?programme=rp-chemistry&frompack=20>
- Visit a local reservoir and find out about water treatment in our local area
- Choose a product around the home and list all the processes that would contribute to its life cycle assessment