Course Overview: Over the course of your 2 years here we will be studying chemistry through the following 12 themes

	Theme	Elements of Life	Developing Fuels	Under the Sea	The Ozone Story	Soaps, Scents and Flavours	The Analysis Puzzle
Year 1	Specification Points	1.1 Atomic Structure 1.2 Amount of Substance 1.3 Bonding 2.2 Periodicity	3.1 Introduction to Organic Chemistry 3.2 Alkanes 1.4 Energetics 1.2 Amount of Substance 3.4 Alkenes	2.3 Group 7 1.7 Oxidation, Reduction and REDOX equations 1.6 Equilibria	3.2 Alkanes 3.3 Halogenoalkanes 1.5 Kinetics 1.3 Bonding	3.5 Alcohols 3.6 Organic Analysis 3.9 Carboxylic Acids and their derivatives	3.6 Organic Analysis 3.15 NMR
	Key Questions	*What is in our blood, sweat and seas? What do the molecules 'look' like?*	*Where does the energy come from? How versatile are alkenes?*	*How can bromine be extracted from sea water?*	*Why is there are hole in the ozone layer?* *Why do some gases contribute to the greenhouse effect?*	*How are soaps and detergents made?* *How can we distinguish between colourless organic compounds?*	*How can we determine the structural formula of a compound?*
	Required Practical*	1a: Preparation of a standard solution 1b: Acid-base titration 4a: Tests for cations	2: Enthalpy change	4b: Tests for anions	3: Effect of temperature on the rate of reaction	5: Distillation of an organic product 6: Tests for organic functional groups 10b: Preparation of an organic liquid	

At the end of year 1 as well as mock revision you will also carry out some **practical investigations** such as investigating the vitamin C content of different fruits and vegetables, and extracting limonene from citrus fruits.

	Theme	Pharmaceutical Chemistry	The Chemical Industry	Amazing Metals	Oceans	Polymers and Life	The Synthesis Puzzle
Year 2	Specification Points	3.10 Aromatic Chemistry 3.11 Amines 3.9 Carboxylic Acids and their derivatives 3.8 Aldehyes and Ketones 3.7 Optical Isomerism	1.9 Rate Equations 1.10 The Equilibrium Constant K_p	2.5 Transition Metals 1.11 Electrode Potentials and Electrochemical Cells 2.6 Reactions of ions in aqueous solution 3.7 Optical Isomerism	1.8 Thermodynamics 2.4 Period 3 elements and their oxides 1.12 Acids and Bases	3.12 Polymers 3.7 Optical Isomerism 3.13 Amino Acids, proteins, and DNA 3.16 Chromatography	3.14 Organic Synthesis
	Key Questions	*How were the modern ideas about medicine developed?*	*How do rate equations help us understand mechanisms?*	*Why do transition metals have coloured compounds?*	*What is the role of oceans in climate control?*	*How is nylon produced?* *What are proteins?*	*How are organic compounds synthesised?*
	Required Practical*	10a: Preparation of an organic solid	7: Rate of reaction by a) initial rates method b) Rate of reaction by continuous monitoring	8: EMF of electrochemical cell 11: Transition metal ions	9: pH curves	12: Thin Layer chromatography	