

Curriculum Subject: Chemistry KS4

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 10	-Atomic Structure and Periodic Table	-Bonding, Structure and Properties	-Chemical Changes and Electrolysis	-Energy Changes	-Chemistry calculations	-chemistry calculations continued & Y10 assessment
	<ul style="list-style-type: none"> The fundamentals of the matter in the Universe Development of our understanding of the structure of the atom The key patterns and structures hidden within the periodic table Options Round 2	<ul style="list-style-type: none"> How substances react together to obtain stable outer electron shells The type of bonding is dependent on the types of substances reacting together Properties of substances are manifested from their structure 	<ul style="list-style-type: none"> Patterns in reactivity in metals The production of salts from the reaction of various types of compounds with acids How electricity can be used to decompose ionic compounds to their elements and it's industrial use in aluminium production 	<ul style="list-style-type: none"> How we measure energy changes when reactant convert to products The reasons why energy changes occur: bond-making and bond breaking 	<ul style="list-style-type: none"> Law of conservation of mass states matter is neither created nor destroyed Solutions can be quantified using concentrations and volumes; solids using mass and gases using volume Efficiency is quantitatively measured using yield and atom economy 	<ul style="list-style-type: none"> (higher) the mole is a concept that allows the comparison of different substances using the molar ratio principle Titration are a method to analyse the concentration of an unknown solution using molar ratios
YEAR 11	-Rates and Equilibria	-Organic Chemistry -Polymers (Triple only)	-Chemical Analysis	-Resources -Using Resources (Triple only)	-Revision	External exams
	<ul style="list-style-type: none"> The speed at which a reaction occurs is important and can be measured The frequency of the collision of particles and their energy explains reaction speed Reversible reactions can go in both direction: forward and backward and will lead to (higher only) dynamic equilibrium 	<ul style="list-style-type: none"> Crude oil is a source of carbon compounds that need to be separated Arrangements of carbon with oxygen have specific patterns in reactivity Polymers are long chain substances that can be made from smaller subunits called monomers and are formed synthetically and in nature 	<ul style="list-style-type: none"> Purity is linked to only one substance; mixtures are impure but can be useful as formulations Tests can be used to identify ions in solution Instruments can be used to identify unknown solutions 	<ul style="list-style-type: none"> The world has finite and infinite resources to which chemist's extract and use Industry purifies key resources e.g. water and manufactures key substances (e.g. fertiliser) for human success Chemists can both manipulate substances and reactions 	<ul style="list-style-type: none"> Key strategies: Deciphering exam questions Depth around the core practicals Applying knowledge to new scenarios (AO3) 	Paper 1 – 2 nd week of May Paper 2 – 2 nd week of June

Sf Bede's Curriculum Design Principles

Within subjects: depth, relevance, sequencing, spacing

Between subjects: breadth, cultural capital, coherence, progression, interlinking