Year 9 Curriculum Overview: CHEMISTRY

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	Topics/ content outline:	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	Atomic Structure Chemical Analysis	Structure of the atom / subatomic particles (mass and charge) Development of the atom Relative atomic mass and Electron configuration Definition of pure in a scientific concept Identification of common gases Use of chromatography	Atomic Structure Chemical Analysis	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard
Spring Term	Periodic Table I Chemical calculations	Development of the Periodic Table Position of elements (Group 1,7 and 0) and their properties Conservation of mass Relative formula mass Balancing symbol equations	Atomic structure Chemical analysis Periodic Table I Chemical Calculations	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard
Summer Term	Using resources The Atmosphere	Distinguish between potable and pure water How potable water is produced from ground, waste and salty water Interpret evidence and evaluate different theories about the Earth's early atmosphere Development of the gases in the atmosphere Greenhouse effect and climate change	All Year 9 content.	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard

Year 10 Curriculum Overview: CHEMISTRY

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	Topics/ content outline:	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	Rates of Reaction Energy changes Equilibrium	Factors that affect the rate of reaction Collision theory and activation energy Conservation of mass Exothermic and endothermic reactions Calculate energy change in reactions (HT only) Reversible reactions Equilibrium and dynamic equilibrium. The effect of changing conditions on equilibrium.	Rates of Reaction Energy changes Equilibrium	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard
Spring Term	Chemical Analysis (SEP ONLY) Structure & Bonding	Identify lithium, copper, calcium, sodium and potassium using flame tests Use of sodium hydroxide solution to identify metal ions (cations) Use of chemical tests to identify carbonate, halide and sulphate ions. Describe and explain ionic, covalent, and metallic bonding. Describe and explain the properties of these compounds Compare diamond with graphite Nanoparticles (Sep only)	Rates of reaction Energy changes & equilibrium Chemical analysis Structure & Bonding	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard
Summer Term	Periodic Table II Metals	Describe and explain the reactions between Group 1 and 7 using knowledge from structure and bonding topic Properties of transition metals (Sep only) Metal reactions with oxygen, water and acid Reactivity series of metals Alloys Extraction of metals (reduction) phytomining and bioleaching.	End of Year MOCK: All year 10 and Year 9 content	Print some practice questions/past papers to work through and identify areas to work on.

Year 11 Curriculum Overview: CHEMISTRY

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	Topics/ content outline:	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	Organic Chemistry Atmosphere Acids & bases	Crude oil – mixture of hydrocarbons, Fractional distillation and cracking Incomplete and complete combustion Structure of Alkenes, alcohols, carboxylic acid and polymer plus their reactions (Sep only) Interpret evidence and evaluate different theories about the Earth's early atmosphere ,Development of the gases in the atmosphere Greenhouse effect and climate change Difference between an alkali and base Production of soluble and insoluble salts Strong and week acids (HT only) Titrations (Sep only)	Organic Chemistry & Atmosphere Acids and Bases	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard
Spring Term	Electrolysis Calculations	Electrolysis of molten ionic substances – link to structure and bonding in terms of ions Manufacture of aluminium Electrolysis of aqueous solutions Half equations (HT only) Use of a mole in chemical measurements and calculations Reacting mass calculations Limiting reagents (HT only) Percentage yield and atom economy (Sep only) Concentration of solutions Volume of gases (Sep only)	Acids & Bases Electrolysis Organic Chemistry	Encourage the use of checklists to identify areas to revise. Routinely self-quiz rather than cram before an assessment. Remind to check Classcharts and Showbie on a regular basis. Complete all homework to a good standard
Summer Term	Revision	AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures	**PAPER 1 :Atomic structure and the periodic table. Structure & Bonding Quantitative chemistry, Chemical changes; and Energy changes** **PAPER 2 : Rates of reactions Organic chemistry; Chemical analysis, Chemistry of the atmosphere; and Using resources**	Print some practice questions/past papers to work through and identify areas to work on.