YEAR 10 CURRICULUM INFORMATION – Chemistry		
	Autumn 1	Autumn 2
What will students be learning?	**C5 - Chemical changes** Students will study the reactions of the metals potassium, sodium, lithium, calcium, magnesium, zinc, iron, and copper with water and acids and should be able to recall and describe these reactions. They will apply their understanding of the reactivity series to displacement reactions and the extraction of metals, as well as introducing higher-tier students to the concepts of oxidation and reduction as the loss and gain of electrons respectively. Students will also learn about salts and how they are prepared, including from metals and acids, acids and bases, and acids and carbonates. Students should be able to prepare a pure, dry sample of a salt from an insoluble metal oxide or carbonate as part of the required practical. Finally, students will learn about the pH scale. Higher-tier students should be able to explain how pH relates to H+(aq) ion concentration and the difference between strong and weak acids.	**C6 – Electrolysis** Students will build upon their knowledge from *C3 Structure and bonding* to explain why ionic compounds can undergo electrolysis when molten or in solution. They should also be able to explain the movement of particles during electrolysis, and the reactions that occur at the electrodes. Students will then apply their understanding of electrolysis to the extraction of aluminium and learn how to investigate the electrolysis of a solution. They should be able to predict the products of electrolysis and higher-tier students should be able to write balanced half equations. **C7 - Energy changes** Students will learn about exothermic and endothermic reactions. They will look into using energy transfers from reactions, bond energy, chemical cells, batteries, and fuel cells.
How will students be assessed?	C5 (Chemical changes) checkpoint Required practical – Prepare a salt from an insoluble metal carbonate or oxide	C6 (Electrolysis) Checkpoint Required practical – Investigate the electrolysis of a solution C7 (Energy changes) checkpoint Required practical – The variables that affect temperature changes in reacting solutions such as acids plus metals, acids plus carbonates, neutralisation, and displacement of metals
Literacy – What keywords will be taught?	Oxidation, Reduction, Reactivity, Unreactive , Electrons, Salt, Base, Insoluble, Soluble, Neutralise, Crystalise, Pure, Aqueous, Solution, pH scale, Ionised, Strong acid, Weak acid	Electrolysis, Electrode, Electrolyte, Molten, Dissolved, Ore, Ion

		Exothermic, Endothermic, Conservation of energy, Temperature, Reaction profile, Activation energy, Bonds, Transfer, Rechargeable, Fuel cell
What employability skills are being developed?	Skills such as investigative and analytical which can lead to careers as: Welder, Chemical metallurgist, Metal extractor, Pharmacist, Toothpaste company, Brewer, Pool maintenance, Environmentalist	Skills such as investigative and analytical which can lead to careers as: Explosives engineer, Chemical manufacturer, Chemical engineer, Research scientist, Gas engineer, Metal extractor, Materials Scientist, Physicist, NASA, Chemical company Skills such as investigative and analytical which can lead to careers as: Hydrogen fuel system engineer, Fuel cell engineer, Materials scientist
Wider Curriculum Links?	Physics (conservation of mass) Design technology (following instructions and food skills)	DT (Production of metals) PE (Use of handwarmers) Food and Physics (Energy transfer) Maths (Interpreting tables and rearranging equations)
What useful websites are there for this topic?	 Free science lessons  Primrose Kitten  Seneca  BBC Bitesize	 Free science lessons  Primrose Kitten  Seneca  BBC Bitesize
What wider reading could be done for this topic?	Textbooks: AQA Chemistry for GCSE Combined Science: Trilogy (Oxford) Textbooks: AQA Chemistry for GCSE Separate Science (Oxford)	Textbooks: AQA Chemistry for GCSE Combined Science: Trilogy (Oxford) Textbooks: AQA Chemistry for GCSE Separate Science
What else can students be doing independently to develop their understanding of this topic?	Exam questions Numeracy practice – ratios Rearrangement of equations	Exam questions Numeracy practice