

Chemistry – Year 11 Separate Science Curriculum

Content (Intent)	Links to prior learning	Skills and Assessment (Implementation)	Expected Learning Outcomes (Impact)
<p>Term 1 The periodic table and calculations</p> <ul style="list-style-type: none"> • Transition metals • Nanotechnology • Titration • % yield and atom economy • Volume of gases • Chemical cells and fuel cells 	<ul style="list-style-type: none"> • Y10 Bonding and calculations • Y10 chemical reactions • Y9 Chemistry (Atomic structure and the periodic table) • Year 8 Periodic Table 	<p>Skills: Practical Skills – RP2 – using titration to investigate reacting volumes Maths skills – rearranging equations, calculating percentages, ratios Literacy</p> <p>Assessment: End of topic test covering content from this topic and previous topics. Test includes multiple choice, structured, closed short answer, and open response questions</p>	<ul style="list-style-type: none"> • Describe and explain the chemical and physical properties of the transition metals • Evaluate the benefits and risks of nanotechnology • Describe how titration can be used to determine the concentration of an acid or alkali • Calculate the volume of a gas at room temperature and pressure • Calculate the % yield and atom economy of a reaction and explain the significance of these values • Describe and explain how chemical cells and fuel cells work
<p>Term 2 Mock – paper 1 – 1hour 45 C1-7</p> <p>Rates and equilibrium</p> <ul style="list-style-type: none"> • The collision theory • The effect of concentration, pressure, temperature, surface area and catalysts on the rate of a reaction • Reversible reactions • Dynamic equilibrium • The effect of changing concentration, pressure and temperature on reaction yields • The Haber process 	<ul style="list-style-type: none"> • Y9 rates of reaction topic 	<p>Skills: Practical Skills – RP5 – investigating the effect of concentration on the rate of reaction Maths skills – rearranging equations, calculating percentages, ratios Literacy</p> <p>Assessment: Mock End of topic test covering content from this topic and previous topics. Test includes multiple choice, structured, closed short answer, and open response questions</p>	<ul style="list-style-type: none"> • Describe and explain the effect of concentration, pressure, temperature, surface area and catalysts on the rate of a reaction, using the collision theory • Describe and explain the significance of dynamic equilibrium for reversible reactions • Describe and explain the effect of changing concentration, pressure and temperature on reaction yields

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Independent learning – The Earth’s Atmosphere <ul style="list-style-type: none"> • Evolution of the earth’s atmosphere • Air pollutants • Climate change 	Y9 the earth’s atmosphere and resources topic		
Term 3 Organic chemistry <ul style="list-style-type: none"> • Alkanes • Alkenes • Alcohols • Carboxylic acids • Esters • Polymers Independent learning - The Earth’s Resources <ul style="list-style-type: none"> • Finite and renewable resources • Potable water • Treating waste water • Extracting metals • Life cycle assessments 	<ul style="list-style-type: none"> • Y10 Covalent bonding • Y9 fractional distillation Y9 the earth’s atmosphere and resources topic Y10 chemical reactions topic Y8 materials topic	Skills: Practical Skills – RP8 purify and test water Maths skills Literacy Assessment: End of topic test covering content from this topic and previous topics. Test includes multiple choice, structured, closed short answer, and open response questions	<ul style="list-style-type: none"> • Describe and explain the properties, reactions and uses of Alkanes, Alkenes, Alcohols, Carboxylic acids and Esters. • Compare addition and condensation polymers, including examples of polymers found in nature
Term 4 Chemical analysis <ul style="list-style-type: none"> • Pure and impure substances • Tests for gases • Chromatography • Tests for positive and negative ions 	Y8&9 elements, compounds & mixtures Y8&9 chromatography	Skills: Practical Skills – RP7 – use chemical tests to identify unknown compounds Maths skills – calculating Rf Literacy	<ul style="list-style-type: none"> • Compare pure substances and formulations, giving examples • the chemical tests used to identify oxygen, hydrogen, carbon dioxide, chlorine and ammonia gases

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<ul style="list-style-type: none"> Instrumental analysis <p>Independent learning – Using Earth’s Resources</p> <ul style="list-style-type: none"> Rusting Alloys Composites Ceramics and Polymers 	<p>Y10 metallic bonding and alloys</p> <p>Y8 materials topic</p>	<p>Assessment:</p> <p>End of topic test covering content from this topic and previous topics.</p> <p>Test includes multiple choice, structured, closed short answer, and open response questions</p>	<ul style="list-style-type: none"> Describe and explain the chemical tests used to identify unknown ionic compounds Evaluate the advantages and disadvantages of instrumental analysis
<p>Term 5</p> <p>Revision</p>	<p>All GCSE topics</p>	<p>Skills:</p> <p>Practical Skills</p> <p>Maths skills</p> <p>Literacy</p> <p>Assessment:</p> <p>Paper 2 mock - 1hour 45 C7-15</p>	<p>To consolidate knowledge and understanding of the course content and exam skills.</p>

Resources and/or activities to support learning

Type of resource	Where to find it	Why?
Textbook	Kerboodle: www.kerboodle.com	Use for research, to consolidate class work, complete summary questions
Revision notes and past paper questions by topic	<p>Physics and Maths tutor https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/</p> <p>Save My Exams https://www.savemyexams.co.uk/gcse/biology/aqa/18/</p>	It saves you time making your own revision notes. Answering questions allows you to apply what you have learned and identify gaps in your knowledge. Also has notes on the required practicals
PiXL KnowITs and GraspITs	Teams	KnowITs contain revision notes and fact recall questions to check your knowledge. GraspITs are exam-style questions that allow you to apply your knowledge
Revision videos/pods	<p>Cognito on Youtube</p> <p>https://youtube.com/playlist?list=PLidqqIGKo</p>	Quick summaries of the content that you can watch/listen to if you are more of a visual/aural learner

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	x7X5UFT-expKluR-i-N3Q1g GCSE pod www.gcsepod.com FreeScienceLessons.co.uk	
Revision notes	CGP Combined Science revision guide (Higher and Foundation versions can be purchased from Amazon)	A good resource to go over the content, look up areas you are unsure about