

**Curriculum Intent:** Students continue to explore new subject content in biology, chemistry, and physics, tackling more challenging concepts at a greater depth than they have done so previously. Students continue to develop scientific skills, directly linked to their required practicals including forming hypotheses, clear written methods, knowledge, and use of scientific equipment as well as presenting and analysing results. The Assessment outcomes are 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, evaluate, make judgements, draw conclusions, develop experimental procedures, and improve experimental procedures.

Year 10	HT1	HT2	HT3	HT4	HT5	HT6
<b>Content, Knowledge &amp; Skills</b>	Unit 1.1: States of Matter Unit 1.2: Structure of the Atom Unit 1.3: Cells  Mathematical skills: $\rho = m/V$ $\Delta E = mc\Delta\theta$ $E = mLv$ $E = mL$ $Mag = I/A$ Standard form  Required practicals: RP – density RP – SHC RP - microscopy RP - osmosis  Guided revision: Unit 1	Unit 1.4: Waves Unit 2.1: Systems of the Human Body Unit 2.2: Plants and photosynthesis (start)  Mathematical skills: Wave speed= frequency x wavelength Period = 1/ frequency $R_f = \text{distance travelled by spot} / \text{distance travelled by solvent}$  Required practicals: RP: wave speed RP: radiation and absorption RP: Food tests RP: Reaction time  Guided revision: Unit 1	Unit 2.2: Plants and photosynthesis Unit 3.1: Lifestyle and Health Unit 3.2 : Radiation and disease.  Mathematical skills: Calculating half-life from graphs. Nuclear equations  Required practicals: RP: Paper chromatography RP: Photosynthesis  Guided revision: Unit 2	Unit 3.3: Preventing, treating and causing disease. Unit 4.1: Earth’s atmosphere  Mathematical skills: Interpreting data. Graph skills  Required practicals: RP: Purifying water  Guided revision: Unit 1 and 2  Careers week: Video of pathways into scientific careers. Career profiles lesson – how to become a ....	Unit 4.1: Earth’s atmosphere Unit 4.2: Ecosystems Unit 4.3 Genetics Unit 4.4: Variation and evolution  Mathematical skills: Interpreting data Use probability, proportion and ratios in relation to inheritance Punnett squares Estimated Pop size = mean pop per m <sup>2</sup> X total area  Required practicals: RP: Field investigations  Guided revision: Unit 3	Unit 5.1: The Periodic table Unit 5.2: Chemical Quantities Revision of units 1 -5, with a particular focus on the required practicals and the skills related to them.  Mathematical skills: Use of ratios, fractions and percentages in Chemistry calculations. Use of relative formula mass to calculate the moles in a given mass and vice versa  Required practicals: Focus on unit 1 RPs  Guided revision: Unit 4
<b>Vocabulary for practicals</b>	Record Calculate Centi-Milli- Micro – Nano – Measure Plot Fraction Percentage Concentration Mass Anomalous determine regular irregular volume mean density predict	Ripple tank evaluate method calculate mean wavelength frequency speed anomalous independent dependent control method Qualitative Interpret Biuret reagent Benedict’s	Measure $R_f$ value unknown Hypothesis Variable Control Mean Graph Inverse Proportions intensity method	Compare water bath estimate calculate mass Indicator pH watch glass accuracy desalination method	Estimate investigate abiotic biotic transect quadrat method	Review of vocabulary from the year

		Iodine Suggest Hypothesis analyse				
<b>Assessment</b>	<p>In class assessments:</p> <ol style="list-style-type: none"> <li>1) Describe the particle model for different states of matter</li> <li>2) Explain how materials are transported in and out of cells.</li> </ol> <p>Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision :</p> <p>–AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.</p>	<p>In class assessments:</p> <ol style="list-style-type: none"> <li>1) Compare aerobic and anaerobic respiration.</li> <li>2) Explain how a plant root is adapted to absorb water and mineral ions.</li> </ol> <p>Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision :</p> <p>–AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.</p>	<p>In class assessments:</p> <ol style="list-style-type: none"> <li>1) Evaluate treatments for coronary heart disease.</li> <li>2) Describe the control of blood sugar level in the body.</li> <li>3) Calculate half life from graphs and from data.</li> </ol> <p>Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision :</p> <p>–AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.</p>	<p>In class assessments:</p> <ol style="list-style-type: none"> <li>1) Use data to identify risk factors for disease.</li> <li>2) Compare the composition of the Earth's early atmosphere to the present atmosphere.</li> </ol> <p>Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision :</p> <p>–AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.</p>	<p>In class assessments:</p> <ol style="list-style-type: none"> <li>1) Explain how carbon is recycled in the atmosphere.</li> <li>2) Calculate the probability of inheriting named phenotypes.</li> </ol> <p>Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision :</p> <p>–AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.</p>	<p>In class assessments:</p> <ol style="list-style-type: none"> <li>1) Compare reactivity in groups 1 and 7.</li> </ol> <p>Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision :</p> <p>–AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.</p>



**Curriculum Intent:** In their final year of study, Year 11 students will develop a deep understanding of scientific ideas making explicit links between topics studied. They will develop independence and gain confidence in working and thinking scientifically. Students continue to develop scientific skills, directly linked to their required practicals including forming hypotheses, clear written methods, knowledge, and use of scientific equipment as well as presenting and analysing results. The Assessment outcomes are 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, evaluate, make judgements, draw conclusions, develop experimental procedures and improve experimental procedures.

Year 11	HT1	HT2	HT3	HT4	HT5	HT6
<p><b>Content, Knowledge &amp; Skills</b></p> <p>Unit 6.1: Forces Unit 6.2: Structure and Bonding Unit 6.3: Magnets and electromagnets Unit 7.1: Forces and Motion</p> <p>Mathematical skills: Weight = m g Work done = F s F = k e Ee= (½) k e 2s = v t a = Δ v/t v<sup>2</sup>- u<sup>2</sup>= 2 a s F = m a F=BIL</p> <p>Required practicals: RP: Force and extension RP: Force and acceleration</p> <p>Guided revision: Unit 1</p>	<p>Unit 7.1: Forces and Motion Unit 7.2: Circuits Unit 7.3: Acids and Alkalis</p> <p>Mathematical skills: F = k e Ee= (½) k e 2s = v t a = Δ v/t v<sup>2</sup>- u<sup>2</sup>= 2 a s F = m a Q=It V= IR P= VIP= I2R E= Pt E= QV</p> <p>Balancing chemical equations Conc =mass/vol</p> <p>Required practicals: RP: IV characteristics RP: Resistance RP: Making a salt RP: Temperature change</p> <p>Guided revision: Unit 2</p>	<p>Unit 7.4: Rates of reaction Unit 7.5: Atoms to Ions</p> <p>Mathematical skills: Using tangents to find the gradient of a graph. Reversible equations</p> <p>Required practicals: RP: rates of reaction RP: electrolysis</p> <p>Guided revision: Unit 3</p>	<p>Unit 8.1: Carbon Chemistry Unit 8.2: Resources and energy</p> <p>Mathematical skills: Energy efficiency calculations</p> <p>Required practicals: Guided revision: Unit 4</p> <p>Careers week: Careers video – different science-based careers.</p>	<p>Unit 8.2: Resources and energy (finish) Revision unit 5-8</p> <p>Mathematical skills: From previous units Required practicals: Review of all</p> <p>Guided revision: Unit 5</p>		

<b>Vocabulary for required practicals</b>	Measure accuracy extension calculate plot identify interpret Limit of proportionality Gradient acceleration mean independent dependent control variable	Range circuits ammeter voltmeter conclusion variables validity interpret Linear relationship series parallel exothermic endothermic hypothesis volume	Hypothesis validity water bath rate indicator pH enzyme electrolysis cathode anode oxidation reduction balance half equations	Allotrope, extraction, oxidation, reduction		
<b>Assessment</b>	In class assessments: 1) Forces as vectors 2) Motion graphs  Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision : –AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.	In class assessments: 1) Work done 2) National grid  Summative assessment will focus on the following as well as key concepts from previous units to aid memory retention and revision : –AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.	In class assessments: 1) Producing a salt method 2) Rates of reaction  Mock exams: <b>P1and 2 : Units 1-4</b>	In class assessments: 1) Allotropes of carbon 2) Extracting metals  Summative assessment will focus on paper 3 and 4 –AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.	In class assessments: 1) paper 1 and 2 2) paper 3 and 4  Summative assessment will focus on paper3 and 4 –AO1, AO2 and AO3 questions with the required ratio for AQA Synergy. Marked using AQA mark scheme.	