



Science	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Year 7</p>	<p>Introduction To Science: Developing the key skills and safety aspects of Science.</p> <p>Cells, tissues and organ systems: Exploring the organization of living things and how they work together.</p>	<p>Particles: Investigating the properties of different materials.</p> <p>Sound: Discovering the properties of sound.</p>	<p>Mixtures and Solutions: Investigating a range of separation techniques.</p> <p>Forces: Exploring how forces affect our everyday life.</p>	<p>Acids and Alkalis: Investigating the reactions of acids and alkalis in the lab and at home.</p>	<p>Reproduction in animals: Looking at how animals reproduce.</p> <p>Energy: Exploring the different energy sources that we use in our day to day lives.</p>	<p>Ecosystems: Investigating the relationships between animals and plants that make up our living planet.</p>
<p>Year 8</p>	<p>Food and Nutrition: Investigating a balanced diet and how our body digests food.</p> <p>Electricity: Exploring the phenomenon of electricity and how we use it.</p>	<p>Plant Reproduction: Discovering the different strategies plants use to reproduce.</p>	<p>Light: Investigating the properties of light and how it behaves.</p> <p>Atoms, elements and compounds: Exploring the building blocks of all materials.</p>	<p>Energy Transfers: Finding out how we use energy and how we can change it into different forms.</p> <p>Muscles and bones: Looking at how our muscles and skeleton function.</p>	<p>Fluids: Exploring the properties and uses of fluids in our day to day lives.</p> <p>Rocks: Finding out about the material under our feet and how different rocks are formed.</p>	<p>Combustion: Exploring the important reaction of combustion. How do we use it and what is the impact it is having on our planet.</p>

<p>Year 9</p>	<p>Metals and their uses: Discovering the properties of metals and how we utilize their unique characteristics.</p> <p>Breathing and respiration: Exploring how our bodies release energy from the oxygen we breathe and the food we eat.</p>	<p>The periodic Table: Exploring the order of the periodic table and the patterns in chemistry it contains.</p>	<p>Unicellular organisms: Exploring life at the most basic level and the range of organisms that can be found.</p> <p>Earth and Space: Discovering the universe and explaining a range of natural phenomenon.</p>	<p>Key Stage 4 Subjects begin.</p>	<p>Key Stage 4 Subjects begin.</p>	<p>Key stage 4 Subjects begin.</p>
<p>Year 10 Combined</p>	<p>AQA GCSE Trilogy –End of Year Mock exam in the form of a previous GCSE Paper 1 for Biology, Chemistry and Physics Trilogy Science.</p> <p>Topics covered: Biology – Cell Structure; Cell Division; Organisation and the Digestive System; Organising Animals and Plants; Respiration; Photosynthesis; Communicable Diseases; Preventing and Treating Diseases; Non-communicable Diseases.</p> <p>Chemistry – Atomic Structure; The Periodic Table; Bonding and Structure; Chemical Changes; Chemical Calculations; Energy changes; Electrolysis; Rates and Equilibrium; Crude Oil and Fuels.</p> <p>Physics – Conservation of Energy; Energy Transfer; Energy Resources; Electrical Circuits; Electricity in the Home; Molecules and Matter; Radioactivity; Forces in Balance; Motion</p> <p>Skills: develop science safety and practical skills. Creativity. Use of terminology. Describing links. Identifying trends.</p>					
<p>Year 10 Separate</p>	<p>AQA GCSE Separate Sciences –End of Year Mock exam in the form of a previous GCSE Paper 1 for Biology, Chemistry and Physics Separate Science.</p> <p>Topics covered: Biology – Cell Structure; Cell Division; Organisation and the Digestive System; Organising Animals and Plants; Respiration; Photosynthesis; Communicable Diseases; Preventing and Treating Diseases; Non-communicable Diseases; The Human Nervous System; Hormonal Coordination; Hormones in Action; Reproduction.</p> <p>Chemistry – Atomic Structure; The Periodic Table; Bonding and Structure; Chemical Changes; Chemical Calculations; Electrolysis; Energy changes; Rates and Equilibrium; Crude Oil and Fuels; Organic Reactions; Polymers.</p> <p>Physics – Conservation of Energy; Energy Transfer; Energy Resources; Electrical Circuits; Electricity in the Home; Molecules and Matter; Radioactivity; Forces in Balance; Motion; Force and Motion; Force and Pressure.</p> <p>Skills: develop science safety and practical skills. Creativity. Use of terminology. Describing links. Identifying trends.</p>					

<p>Year 11 Combined</p>	<p>Paper 1 for Biology, Chemistry and Physics sat before Christmas in Winter Mocks. Paper 2's sat in Spring Mocks. Topics covered: Biology – The Human Nervous System; Hormonal Coordination; Reproduction; Variation; Evolution; Adaptation and Interdependence; Organising an Ecosystem; Effect of Human Interactions on Ecosystems and Biodiversity. Chemistry – Chemical Analysis; The Earth's Atmosphere; The Earth's Resources Physics – Force and Motion; Wave Properties; Electromagnetic waves; Electromagnetism. Numeracy. Required practicals from each subject. Followed by general revision of all topics until the exams. Skills: Develop mathematical skills within the context of science.</p>
<p>Year 11 Separate</p>	<p>Paper 1 for Biology, Chemistry and Physics sat before Christmas in Winter Mocks. Paper 2's sat in Spring Mocks. Topics covered: Biology –Variation; Evolution; Adaptation and Interdependence; Organising an Ecosystem; Effect of Human Interactions on Ecosystems and Biodiversity. Chemistry – Chemical Analysis; The Earth's Atmosphere; The Earth's Resources; Using Our Resources Physics –Wave Properties; Electromagnetic waves; Light; Electromagnetism; Space. Numeracy. Required practicals from each subject. Followed by general revision of all topics until the exams. Skills: Develop mathematical skills within the context of science.</p>

<p>Year 12 Biology</p>	<p>Topics covered: Cell structure, Biological molecules, Nucleotides and nucleic acids, Cell division</p>	<p>Topics covered: Cellular organisation, Exchange surfaces, Enzymes, Biological membranes Skills: Chemical analysis of samples, rates of reactions</p>	<p>Topics covered: Transport in animals, Communicable diseases Skills: Analysis of complex inter-relationships of organisms and how to manage these to promote healthy populations</p>	<p>Topics covered: Biodiversity, Transport in plants</p>	<p>Topics covered: Ecosystems, Classification and Evolution</p>	<p>Topics covered: Ecosystems, Manipulation genomes Skills: Analysis of energy systems and limiting factors effecting photosynthesis.</p>
<p>Year 12 Chemistry</p>	<p>Atomic structure and isotopes, Acids, Redox, Bonding, Amount of substance</p>	<p>Compounds formulae and equations, Electron structure, Periodicity, Bonding, Group 2, Halogens, Qualitative analysis Skills: Bond enthalpy calculations, Feasibility calculations,</p>	<p>Enthalpy change, Reaction Rates, Basic concepts of organic chemistry, Alkanes Skills: Qualitative analysis of Ions, Precipitate tests, Halide tests,</p>	<p>Alkenes, Alcohols, Haloalkanes, Reaction rates., Chemical equilibria</p>	<p>Organic Synthesis, Analytical techniques, Revision and study skills Skills: Spectroscopy, NMR, Formation of nitriles</p>	<p>How far? 7 How fast?, Revision & study skills development</p>

<p>Year 12 Physics</p>	<p>Module 2</p> <ul style="list-style-type: none"> • Development of physics. • Foundations of Physics • Physical quantities • Units • Making measurements • Nature of quantities 	<p>Module 3: Forces and Motion;</p> <ul style="list-style-type: none"> • Work, • Energy, • Power, • Materials, • Newton's Laws of motion and momentum • Motion 	<p>Module 4 - Electrons, Waves and photons</p> <ul style="list-style-type: none"> • Charge and current • Energy, power and resistance <ul style="list-style-type: none"> • Circuits • Waves • Quantum Physics
<p>Year 12 BTEC Applied Science</p>	<p>Unit 1 - principles of science. This will study some aspects of science in more detail than they did at GCSE. Topics include: Cells; Biological Pathways; Quantitative Chemistry; Bonding and Structure; Waves in Sound;</p>	<p>Unit 8 is a separate unit that looks at the organisation of the human body. This is internally assessed as coursework.</p>	

	Electromagnetic Waves. This is externally examined in January					
Year 13 Biology	Manipulating genomes, Ecosystems, Population and sustainability	Communication and Homeostasis, Patterns of inheritance, Cloning and biotechnology	Hormonal and neuronal communication, Respiration, Cellular control	Plant and animal responses, Photosynthesis	Revision	
Year 13 Chemistry	Module 5 – Physical chemistry and transition elements. <ul style="list-style-type: none"> • Reaction rates and equilibrium (quantitative) • pH and buffers • Enthalpy , entropy and free energy • Redox and electrode potentials • Transition elements 		Module 6 – Organic Chemistry and Analysis Electrical Fields <ul style="list-style-type: none"> • Aromatic compounds • Carbonyl compounds • Carboxylic acids and esters • Nitrogen compounds • Polymers • Organic synthesis • Chromatography and spectroscopy (MNR) 		Revision	
Year 13 Physics	Module 5 Newtonian World and Astrophysics. <ul style="list-style-type: none"> • Thermal Physics • Circular Motion • Oscillations • Gravitational Fields • Astrophysics and cosmology 		Module 6 Particles and Medical Physics <ul style="list-style-type: none"> • Capacitors • Electrical Fields • Electromagnetism • Nuclear and Particle physics • Medical Imaging 		Revision	
Year 13 BTEC Applied Science	Unit 1 - principles of science. This will study some aspects of science in more detail than they did at GCSE. Topics include: Cells; Biological Pathways; Quantitative Chemistry; Bonding and Structure; Waves in Sound;		Unit 8 is a separate unit that looks at the organisation of the human body. This is internally assessed as coursework.			