

KS4 Curriculum Overview (Combined SCIENCE Trilogy)

YEAR 11

TERM 1 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
<p style="text-align: center;">Biology</p> <p>Ecology: B15 Adaptations, interdependence, and competition (continued) B16 Organising an ecosystem.</p> <p style="text-align: center;">Chemistry</p> <p>Rates, equilibrium, and organic chemistry: C9 Crude oil and fuels (continued) Analysis and the Earth's resources: C10 Chemical analysis</p> <p style="text-align: center;">Physics</p> <p>Forces in action: P10 Force and Motion (continued) Waves and electromagnetism: P11 Wave properties</p>	<p style="text-align: center;">Biology</p> <p>Data analysis, interpreting population graphs, labelling carbon cycle processes.</p> <p style="text-align: center;">Chemistry</p> <p>Analysis of chromatograms and calculation of R_f values. Testing for gases (hydrogen, oxygen and chlorine).</p> <p style="text-align: center;">Physics</p> <p>Practical techniques to investigate the speed of waves in a string and in water.</p> <p>Geography Link – Climate change, carbon footprint.</p>	<p style="text-align: center;">Career links</p> <p>Biologist, Arboricultural officer, Countryside officer, Environmental consultant, Horticultural manager Crude oil analyst, petrochemical industry worker, formulation chemist, forensic scientist, Sound mixer, audio engineer, acoustic engineer.</p> <p style="text-align: center;">British Values</p> <p>Individual Liberty: There are opportunities for students to work independently and make choices in a safe environment when carrying out investigations.</p>
TERM 2 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
<p style="text-align: center;">Biology</p> <p>Ecology: B16 Organising an ecosystem (continued) B17 Biodiversity and ecosystems</p> <p style="text-align: center;">Chemistry</p> <p>Analysis and the Earth's resources: C11 The Earth's atmosphere</p> <p style="text-align: center;">Physics</p> <p>Waves and electromagnetism: P11 Wave properties (continued)</p>	<p style="text-align: center;">Biology</p> <p>Interpretation of population graphs</p> <p style="text-align: center;">Chemistry</p> <p>Interpretation of carbon dioxide and temperature graphs over time.</p> <p style="text-align: center;">Physics</p> <p>Setting up a standing wave on a string.</p> <p>Geography link – deforestation, global warming, climate change, loss of biodiversity, carbon footprint, Earth's atmosphere.</p>	<p style="text-align: center;">Career links</p> <p>Biodiversity Officer, zoologist, botanist environmental conservation. Meteorologist, climate change analyst.</p> <p style="text-align: center;">British Values</p> <p>The rule of law: illegal deforestation, maintaining biodiversity, problems reducing the carbon footprint.</p> <p>Tolerance: learning about another part of the world and consideration of people's attitudes, e.g., to deforestation and global warming.</p>

TERM 3 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
<p style="text-align: center;">Biology</p> <p>Ecology: B17 Biodiversity and ecosystems Genetics and reproduction: B13 Variation and evolution</p> <p style="text-align: center;">Chemistry</p> <p>Analysis and the Earth's resources: C11 The Earth's atmosphere (continued) C12 The Earth's resources</p> <p style="text-align: center;">Physics</p> <p>Waves and electromagnetism: P12 Electromagnetic waves P13 Electromagnetism</p>	<p style="text-align: center;">Biology</p> <p>Evaluate the benefits and problems associated with genetic engineering in agriculture and medicine.</p> <p style="text-align: center;">Chemistry</p> <p>Interpreting data on percentage of finite reserves. Analysis and purification of water samples.</p> <p style="text-align: center;">Physics</p> <p>Flemings left hand rule to make connections between directions of field, movement and current. Corkscrew rule to make predictions about the direction of a magnetic field round a current carrying wire. Plotting field lines using a plotting compass.</p> <p>Math Link – prefixes, standard form.</p> <p>Geography Link – global warming, greenhouse effect.</p> <p>Psychology Link – Nature and nurture.</p>	<p style="text-align: center;">Career links</p> <p>Journalist, forest warden. Water treatment specialist, recycling operative. Photographer, forensic scientist, medical physicist, doctor, radiographer, motoring engineer, airport security, structural engineer, scrap metal merchant.</p> <p style="text-align: center;">British Values</p> <p>Rule of Law: Regulation of ionizing radiation e.g., gamma ray therapy and X-rays. Deforestation and peat bog destruction. Government protection of Costa Rican rainforests and cloud forests. Taxation, e.g., to reduce human damage to ecosystems and biodiversity. Illegal untreated sewage release into seas and rivers.</p> <p>Individual Liberty: Persuading gardeners to use peat-free compost. Opportunities to discuss breeding programmes for endangered species, recycling resources, genetic engineering.</p>

TERM 4 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
<p>Biology Genetics and reproduction: B14 Genetics and evolution</p> <p>Chemistry Revision program: Paper 1 and Paper 2</p> <p>Physics Revision program: Paper 1 and Paper 2</p>	<p>Biology The binomial naming system and writing scientific names.</p>	<p>Career links nurse practitioner, physician assistant, clinical laboratory technician, social worker ecologist, paleontologist.</p> <p>British Values Mutual tolerance and Respect: Differing ideas of mass extinctions. Students learn about the continual evolution of scientific ideas which occurs through the acceptance that different people have different ideas about a concept, e.g., classification.</p>
TERM 5 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
<p>Biology GCSE Course completed: bespoke revision timetable.</p> <p>Chemistry GCSE Course completed: bespoke revision timetable.</p> <p>Physics GCSE Course completed: bespoke revision timetable</p>	N/A	N/A
TERM 6 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
<p>Biology GCSE Course completed: bespoke revision timetable.</p> <p>Chemistry GCSE Course completed: bespoke revision timetable.</p> <p>Physics GCSE Course completed: bespoke revision timetable.</p>	N/A	N/A