



Combined Science Curriculum Overview 2019-2020

YEAR 10

	Autumn Term	Spring Term	Summer Term	Rationale
Composites	Key concepts, B: Health & Disease, B: Plants, C: Electrolysis, C: Calculations involving maths, P: Waves	P: Electromagnetic spectrum, B: Homeostasis, B: Exchange & Transport, C: The periodic table	C: Rates of reaction, P: Radioactivity, BCP: Key Concepts	<p>The Autumn term addresses key concepts for biology, chemistry and physics, which appear across exam papers. They are visited within our interleaved structure of biology, chemistry and physics topics to ensure all students have a firm foundation upon which to build a more complex understanding with the subsequent more challenging topics. Many of these key concepts are touched upon in year 9 when linked to their topics in order to support students in bridging the gap between KS3 and KS4.</p> <p>The Spring and summer term continues to cycle through interleaved topics from the biology, chemistry and physics units encouraging spaced practise and supporting students in their recall of content.</p> <p>The end of the summer term allows pupils the opportunity to revise in preparation for their mock exam. This allows time for developing students' exam technique and for students to identify effective methods of revising that work for each individual. Through this we aim to inspire students to take a more personalised view of their revision, developing their metacognitive skills on how they learn most effectively.</p>
Key Components	Microscopes, Enzymes, Chemical & Physical barriers, transporting substances, electrolysis, relative atomic mass, types of wave	Electromagnetic spectrum, Blood sugar levels, thermoregulation, respiration, heart structure, periodic table groups, reactivity	Rates of reaction, catalysts, type of reaction, atomic structure, types of radiation	
Tier 3 language	Acrosome, Ribosome, Active Site, Substrate, Communicable, transmission, pathogen, cation, anion, longitudinal, transverse	Glucose, hormone, insulin, osmosis, diffusion, aorta, pulmonary, orbits, electron configuration, reactivity, alkali, halogens, Transverse	Enzyme, collision, activation energy, exothermic, endothermic, alpha, beta, gamma, half life	
Assessment	Biology Paper 1 mock exam Weekly low stakes testing	Chemistry 1 mock exam Weekly low stakes testing	Physics 1 mock exam Weekly low stakes testing	
The best that has been thought and said	Robert Brown, Robert Hooke, Alexander Fleming, Robert Koch,	William Herschel, Dimitri Mendeleev	JJ Thompson, Rutherford, Neils Bohr, Marie Curie,	

YEAR 11

Composites	P: Electromagnetic spectrum, B: Health & disease, B: Plants, C: The Periodic table, P: Radioactivity, B: Homeostasis	B: Exchange & transport, C: Fuels and earth atmosphere, P: Electrical circuits, P: Particle model, B: Ecosystems	Revision	<p>The autumn and spring term continues to cycle through biology, chemistry and physics topics which helps pupils to build on their prior knowledge. The spiral curriculum encourages spaced practice and gives pupils the opportunity to make links between the various different components.</p> <p>During the spring term each class will have a walking talking mock which will be designed to tackle exam technique and how to break questions down. Not properly answering the exam question can be a barrier to many students and so ensuring they can confidently identify command words and directly answer the question is key to exam success.</p> <p>The summer term is a time to re-visit the content most likely to appear in the exams, all key words are in students' long term memory and lots of opportunities for deliberate practice is given to support their recall. Each student will be provided with a revision guide and work book to help them prepare for their examinations.</p>
Key Components	Electromagnetic uses and dangers, communicable diseases, STI, Photosynthesis, Types of radiation, controlling glucose, Hormones	Respiration, gas exchange, heart structure, global warming, crude oil, series and parallel circuits, states of matter, food webs, mutualism	Preparation for GCSE examinations. Deliberate Practice & Retrieval Practice of key knowledge.	
Tier 3 language	Electromagnetism, wavelength, communicable, non-communicable photosynthesis, chloroplast, catalyst, half life, alpha, insulin, hormone	Diffusion, osmosis, plasma, pulmonary vein, haemoglobin, alkane, alkene, saturation, distillation, current, voltage, resistance, parasites, mutualist		
Assessment	Paper 1 mock exams Weekly low stakes testing	Paper 2 mock exams Walking Talking Mocks	GCSE Exams	
The best that has been thought and said	Neils Bohr, Charles Darwin	Greta Thurnberg, David Attenborough		