




<p>Year 13: Biology</p>	<p>Curriculum Intent: Students follow the two-year OCR A-Level (A) Biology specification. Students build on their knowledge from Year 12 and develop their mathematical skills throughout the course. Pupils study Module 5 and 6 of the OCR specification before taking their external examinations. Learning is supported by practical work and students will complete a range of practical assessments (PAGs) during the year which count towards their final qualification. Students are taught by 2 teachers</p>			
	<p>Module 5 Communication, homeostasis, and energy</p>	<p>Module 6 Genetics and ecosystems</p>	<p>Revision</p>	<p>A – level examinations</p>
<p>Key ideas</p>	<ul style="list-style-type: none"> • Communication and homeostasis • Excretion as an example of homeostatic control • Neuronal communication • Hormonal communication • Plant and animal responses. • Photosynthesis • Respiration 	<ul style="list-style-type: none"> • Cellular control • Patterns of inheritance • Manipulating hormones • Cloning and biotechnology 	<ul style="list-style-type: none"> • Students will undertake a period of revision in lessons for their external examinations 	<p>Students undertake their final Exams during the Summer exam series.</p>
<p>Sequence of Learning -</p>	<ul style="list-style-type: none"> • The need for communication systems and homeostasis. • Temperature control and endotherms and exothermic. • Roles of sensory receptors. • The structure and function of neurons. • Action potentials and transmission of nerve impulses, including actions at synapses. • The mammalian nervous system and the brain. • Reflex actions and coordinating responses, 	<ul style="list-style-type: none"> • Gene mutations and the regulation of gene expressions. • Genetic control and body plan development. • Genetic variation, including discontinuous and continuous variation. • Monogenic and dihybrid inheritance, including multiple alleles, sex linkage, codominance, autosomal linkage and epistasis. • Calculations using Chi-squared and Hardy-Weinberg principle • Isolating mechanisms. • Artificial selection. • DNA sequencing 		

	<p>including controlling the heart rate.</p> <ul style="list-style-type: none"> • Muscles and muscle contraction. • Excretion • Structure and function of the liver. • Structure and function of the kidney, including osmoregulation and kidney failure. • Endocrine communication. Including the adrenal glands and the pancreas. • Role of the pancreas in the regulation of blood glucose and diabetes. • Photosynthesis and factors affecting photosynthesis. • Cellular respiration and the energy values of different respiratory substrates. • Factors affecting the rate of respiration. 	<ul style="list-style-type: none"> • DAN profiling and the polymerase chain reaction. • Electrophoresis • Genetic engineering • Gene therapy • Cloning in plants and animals. • Biotechnology • Microorganism cultures. • Immobilised enzymes. 		
Vocabulary	The list of key words is too numerous for inclusion here. The recommended course textbook provides a complete Glossary of key words			
Practical Skills (relevant PAGs)	<ul style="list-style-type: none"> • PAG 6.3 Chromatography • PAG 12.1 Research respiration in yeast. • Microscopy to investigate histology of liver and kidney tissue. • Investigating factors affecting photosynthesis. • Investigating factors affecting the rate of respiration. 	<ul style="list-style-type: none"> • PAG 7.1 Microbiological Techniques 		

	<ul style="list-style-type: none"> Investigating plant responses: tropisms 			
<p>Assessment (Related to mastery grids)</p>	<p>Pupils will be assessed through completion of tests, practical work and other assignments.</p>	<p>Pupils will be assessed through completion of tests, practical work and other assignments.</p>		