

Year 13: Biology

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	5A Photosynthesis and respiration 5B Energy transfer and ecosystems 7A Genetics 7B Populations and evolution Focus: 5A- Photosynthesis and respiration 5B- energy and ecosystems, nutrient cycles 7A- Inheritance 7B- Populations, evolution may lead to speciation	5B Energy transfer and ecosystems 6A Stimuli and responses 7B Populations and evolution 7C Populations in ecosystems Focus: 5B- energy and ecosystems, nutrient cycles 6A- Survival and response, Receptors and Control of heart rate 7B- Populations, evolution may lead to speciation 7C- Populations in ecosystems	6C Homeostasis 8A Mutation and gene expression Focus: 6C- Nerve impulses, synaptic transmission, skeletal muscles 8A- Alteration of the sequence of bases in DNA, gene expression and cancer, regulation of transcription and translation,	6C Homeostasis 8B Genome project and technology Focus: 6C- Principles of homeostasis, control of blood glucose, control of blood water potential 8B- Using genome projects, recombinant DNA technology, DNA probes, Genetic fingerprinting	End of year revision Focus: Exam technique, maths skills	End of year revision Focus: Exam technique, maths skills
Assessments	5A mini assessment 7A mini assessment	Mock- paper 1	6A and 6B mini assessment 7C mini assessment	Mock- Paper 2 (without 6C and 8B)	Mock- paper 2 and paper 3	
Building on Prior Learning	<p>Substantive Knowledge – Key concepts from GCSE Biology and first year of A level Biology will be further explored and developed at a biochemical level. Knowledge in particular organ systems will be expanded and the new key biological processes, cycles and technology will be understood through rational of latest scientific evidence.</p> <p>Disciplinary/procedural Knowledge – Drawing upon application skills at GCSE and first year of A level Biology students will continue to apply knowledge to novel ideas. Practical skills will be developed further with an emphasis on analysing and evaluating experiments along with the development and use of technical language of scientific enquiry. Math skills will be advanced to solve more complex solutions and apply statistical tests to experimental evidence.</p>					
Cultural Capital	<p>There is cultural capital in abundance in this programme of study: Students will learn about the development of biological research over time whilst also being aware of new innovative research and latest findings. Current ideas of vaccines (Covid-19) and DNA technology are discussed and reflected on in lessons.</p>					
Mastery	<p>In terms of mastery students will be guided, through modelling, of how to apply their biological knowledge to varied and complex contexts and scenarios. Students will be given a range of opportunities to practice this thinking and demonstrate ability both in lesson and in formal assessments. The use of specific technical language will be evident in the communication of answers. By the end of the year students can start to make synoptic links between topics to help strengthen understanding.</p>					
Development of Character	<p>A wide range of virtues are covered through the teaching of Biology: The intellectual virtues of curiosity and resilience are explored through the teaching of key biological concepts. Collaborative working and honesty are important to the scientific method and acceptance of new ideas.</p>					
Extra-Curricular opportunities	<p>In School: Medic live event Outside of School: Science Live A level event, trip to Worcester University</p>					
Metacognitive Learning	<p>Metacognitive learning will build through second order concepts. Students will learn through expert modelling, the ways to approach biological knowledge to new concepts. They will then individually practice this and be reflective on their progress, students will then set personal targets based on strengths and weaknesses to plan success in future assessments.</p>					