

Year 13 Curriculum Grid

BIOLOGY

Year/term	Unit of work	Intent
Overall		<ul style="list-style-type: none"> To inspire students, nurture a passion for Biology and lay the groundwork for further study in courses like biological sciences and medicine. To facilitate students in bringing the core biological concepts alive in contextualised applications To provide numerous opportunities to use practical experiences to link theory to reality and equip students with the essential practical skills they need for future scientific study.
Autumn	Energy transfers	<ul style="list-style-type: none"> To identify environmental factors that limit the rate of photosynthesis and discover agricultural practices to overcome these To know, in detail the main stages of aerobic and anaerobic respiration and efficiency in terms of ATP production To explain the role nutrients play when recycled in the natural ecosystem
	Organisms response to changes	<ul style="list-style-type: none"> To appreciate the ways different organisms respond to stimuli in their surrounding to increase their chances of survival To predict and explain the mechanisms of drug action in the nervous system, usually at the synapses To understand and annotate the mechanisms controlling heart rate control, blood glucose regulation and kidney function.
Spring	Genetics, populations and evolution	<ul style="list-style-type: none"> To apply the chi-squared test to investigate the significance of differences between expected and observed phenotypic ratios and use the Hardy-Weinberg principle to predict generational allele frequencies To explain how natural selection and isolation may result in change in the allele and phenotype frequency and lead to the formation of a new species To evaluate evidence and data concerning the need to manage the conflict between human needs and conservation in order to maintain the sustainability of natural resources
	Control of gene expression	<ul style="list-style-type: none"> To discuss and evaluate the use of stem cells in treating human disorders. To interpret information relating to the way in which an understanding of the roles of oncogenes and tumour suppressor genes could be used in the prevention, treatment and cure of cancer To seek and find balance for the ethical, financial and social issues associated with the use and ownership of recombinant DNA technology in agriculture, in industry and in medicine
Summer	A-level exams	<ul style="list-style-type: none"> To prepare students with good exam technique To encourage wider reading and practise essay writing skills for Paper 3



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Ongoing		<ul style="list-style-type: none">• To prepare students for public examinations and provide opportunities for Year 12 subject knowledge recall and review• To take a holistic approach to the facts, figures and ethics of many biological advances through teaching of the curriculum
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