Year 13 Curriculum Grid

Biology

Year/Term	Unit	Intent
Curriculum purpose		To inspire students, nurture a passion for Biology, lay the groundwork for further study in Biology related courses whilst providing 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	• 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	• To appreciate the ways different organisms respond to stimuli in their surroundings 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, blood glucose regulation and kidney function
Spring	Genetics, Population and Evolution	• 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 changes to 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	• 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	• To prepare students with good exam technique • To prepare students for public examinations