



Year 12 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	Biological Molecules	<ul style="list-style-type: none"> To illustrate the structures of a variety of biological molecules including carbohydrates, proteins and lipids and relate these to their functions To describe biochemical tests for the different biomolecules Explain how these polymers can be converted to/from monomers To identify the double helix structure of DNA, state the stages of replication and appreciate the evidence for semi-conservative replication
	Cells	<ul style="list-style-type: none"> To apply knowledge of cellular features to help explain the adaptations of prokaryotic and eukaryotic cells To explain how surface area, number of channel or carrier proteins and differences in gradients of concentration or water potential affect the rate of movement across cell membranes Know the different cell types involved in a cell-mediated immunity response and their roles played
Spring	Genetic Information	<ul style="list-style-type: none"> To be able to intrinsically link the dependant relationship between DNA, mRNA, amino acids and proteins To explain the different outcomes of mitosis and meiosis and stages within each cell division process To annotate the stages of transcription, translation and splicing
	Organisms Exchange Information with Their Environment	<ul style="list-style-type: none"> To interpret information regarding gas exchange in different types of organisms and issues with lung disease To narrate the process of mass transport in plants and animals in providing efficient movement of substances over large distances To discover the mechanisms for the absorption of the products of digestion by cells lining the ileum
Summer	Variation and Relationships Between Organisms	<ul style="list-style-type: none"> To calculate an index of diversity and interpret the significance of the calculated value Recognise and describe methods for studying genetic diversity within or between species To secure foundation knowledge in core cell biology, ecology and genetics to build further upon in Year 13