

KS5 Curriculum Overview 2023/24

Department: Biology

Description of KS5 Curriculum:

Biology at Advanced Level is a fascinating and demanding subject building on concepts that have been introduced at GCSE. Studying Biology at Advanced Level gives a greater understanding of Biochemistry, Digestion, Circulation, DNA technology, Nervous System, Environment, Microbes and Disease and the study of Plant Physiology.

Biology at Advanced Level provides a framework for further study on a number of Undergraduate Courses at University and future employment.

Underpinning Advanced Level Biology is also the consideration of 'How Science Works' and topics to the relevance of Biology in Society.

Sequence of Teaching:

KS5	Term 1 Content	Term 2 Content	Term 3 Content
Year 12	<p>Module 3.2</p> <ul style="list-style-type: none"> Structure of Eukaryotic cells Structure of Prokaryotic cells Methods of studying cells All cells arise from other cells Transport across cell membranes <p>Module 3.1</p> <ul style="list-style-type: none"> Monomers and polymers Lipids Proteins Many proteins are enzymes ATP 	<p>Module 3.2</p> <ul style="list-style-type: none"> Cell recognition & immune system <p>Module 3.3</p> <ul style="list-style-type: none"> Surface area to volume ratio Gas Exchange Digestion & absorption Mass Transport in animals <p>Module 3.1</p> <ul style="list-style-type: none"> Water Inorganic ions Structure of DNA and RNA <p>Module 3.4</p> <ul style="list-style-type: none"> DNA, genes and chromosomes Protein synthesis Genetic variation due to mutation and meiosis Genetic diversity and adaptation 	<p>Module 3.3</p> <ul style="list-style-type: none"> Mass transport in plants <p>Module 3.4</p> <ul style="list-style-type: none"> Species and taxonomy Biodiversity within a community P1 Investigating diversity P1 Biodiversity within a community P2 Investigating diversity P2

<p>Year 13</p>	<p>Module 3.5</p> <ul style="list-style-type: none"> • Nutrient cycles • Respiration <p>Module 3.6</p> <ul style="list-style-type: none"> • Principles of homeostasis & negative feedback • Control of blood glucose • Control of blood water potential • Skeletal muscles are stimulated to contract by nerves and act as effectors <p>Module 3.7</p> <ul style="list-style-type: none"> • Populations and ecosystems <p>Module 3.5</p> <ul style="list-style-type: none"> • Energy and ecosystems • Photosynthesis <p>Module 3.6</p> <ul style="list-style-type: none"> • Survival & response • Nerve impulse 	<p>Module 3.7</p> <ul style="list-style-type: none"> • Inheritance • Populations • Evolution may lead to speciation <p>Module 3.8</p> <ul style="list-style-type: none"> • Most of a cell's DNA is not translated • Recombinant DNA technology • Gene therapy <p>Module 3.6</p> <ul style="list-style-type: none"> • Receptors • Control of heart rate <p>Module 3.8</p> <ul style="list-style-type: none"> • Alteration of the sequence of bases in DNA • Regulation of transcription and translation • Gene expression and cancer • Using genome projects • Genetic fingerprinting 	<p>Module 3.8</p> <ul style="list-style-type: none"> • Gene therapy – P2
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