



VISION: At KS5 we build upon the strong foundation in Biology formed at GCSE in order to further explore the world around us. Wherever possible real-world examples and the relevance of Biology to modern society is emphasised. We recognise that students taking A-level Biology do so for a variety of reasons and we aim that no matter what the pathway post-18 our students leave with a strong appreciation for Biology's place in the world and the scientific method. In a similar manner to KS4, retrieval, deliberate practice and exam question practice are used extensively. Formal mock examinations are conducted frequently so that students are well aware of their strengths and weaknesses within the subject. Study skills, revision schedules and exam practice classes are all part of our regular curriculum.

	Foci	Assessment	Knowledge Organiser
AS Content			
Unit 1	Cell Structure <ul style="list-style-type: none">Types and Uses of MicroscopesPlant and Animal UltrastructureEukaryotic and Prokaryotic CellsMeasurements and Calibrations	End of topic test	Knowledge Organisers provided on School Hub
Unit 2	Biological Molecules <ul style="list-style-type: none">Qualities of WaterMonomers and PolymersHydrolysis and Condensation ReactionsStructure and testing of:<ul style="list-style-type: none">CarbohydratesLipidsProteinsInorganic Ions	End of topic test	Knowledge Organisers provided on School Hub
Unit 3	Nucleic Acids <ul style="list-style-type: none">NucleotidesATPPolynucleotides and DNAPurifying DNADNA ReplicationProtein SynthesisGenesTranscription and Translation	End of topic test	Knowledge Organisers provided on School Hub
Unit 4	Enzymes <ul style="list-style-type: none">Enzyme Action and StructureFactors affecting Enzyme Rates of ReactionCalculation of GradientsInduced Fit Model Vs. Lock and KeyEnzyme Inhibition	End of topic test	Knowledge Organisers provided on School Hub



Unit 5	Biological Membranes <ul style="list-style-type: none">• Membrane Structure• Types and Functions of Membranes• Permeability• Use of colorimeter• Cell Signalling• Diffusion• Facilitated Diffusion• Osmosis	End of topic test	Knowledge Organisers provided on School Hub
Unit 6	Cell Division, Diversity and Organisation <ul style="list-style-type: none">• Cell Cycle• Mitosis• Meiosis and Reproduction• Stem Cells• Differentiation and Specialised Cells• Tissues, Organs and Systems	End of topic test	Knowledge Organisers provided on School Hub
Unit 7	Exchange Surfaces <ul style="list-style-type: none">• Specialised Exchange Surfaces• Gas Exchange in Mammals• Ventilation in Mammals• Gas Exchange in Fish and Insects• Dissection of Fish	End of topic test	Knowledge Organisers provided on School Hub
Unit 8	Communicable Diseases, Prevention and Immune System <ul style="list-style-type: none">• Pathogens and Disease• Animal and Plant Defences• Immune Responses• Immune Signalling• Antibody Production and Structure• Primary and Secondary Responses• Immunity• Vaccination• Antibiotics	End of topic test	Knowledge Organisers provided on School Hub
Unit 9	Transport in Animals <ul style="list-style-type: none">• Circulatory System• Blood Vessels• Heart Structure and Function• Cardiac Cycle• Electrical Activity of the Heart• Haemoglobin• Dissociation Curves	End of topic test	Knowledge Organisers provided on School Hub
Unit 10	Biodiversity <ul style="list-style-type: none">• Investigating Biodiversity• Species Richness and Evenness• Simpson's Index of Diversity• Genetic Diversity• Factors Affecting Biodiversity• Conservation	End of topic test	Knowledge Organisers provided on School Hub



Unit 11	Transport in Plants <ul style="list-style-type: none">• Xylem and Phloem• Plant Dissection• Transport of Water• Transpiration• Use of Potometers• Hydrophytes and Xerophytes• Translocation	End of topic test	Knowledge Organisers provided on School Hub
Unit 12	Classification and Evolution <ul style="list-style-type: none">• Classification• Kingdoms• Classification Systems• Variation• Spearman's Rank Coefficient• Adaptation• Convergent Evolution• Theory of Evolution• Evidence to Support Evolution	End of topic test	Knowledge Organisers provided on School Hub
Unit 13	Photosynthesis <ul style="list-style-type: none">• Photosynthesis and Respiration• Chloroplast Structure and Functions• Photosynthetic Pigments• Photosystems• Light Dependent Reaction• Light Independent Reaction• Uses of TP	End of topic test	Knowledge Organisers provided on School Hub
Unit 14	Communication and Homeostasis <ul style="list-style-type: none">• Need for Communication System• Cell Signalling• Homeostasis• Thermoregulation• Ectomorphs and Endomorphs	End of topic test	Knowledge Organisers provided on School Hub
A2 Content			
Unit 15	Excretion as an Example of Homeostatic Control <ul style="list-style-type: none">• Excretion• Metabolism• Homeostasis• Liver Structure and Function• Deamination and Detoxification• Kidney Structure and Function• Histology• Kidneys and Water Potential• Kidney Failure and Treatment	End of topic test	Knowledge Organisers provided on School Hub



Unit 16	<p>Plant and Animal Responses</p> <ul style="list-style-type: none">• Tropism and Response to Stimuli• Role of Plant Hormones• Auxin and Gibberellin Experiments• Commercial Use of Plant Hormones• Mammalian Nervous System• Reflex Actions• Brain• Nervous and Endocrine Coordination• Muscles and Contraction	End of topic test	Knowledge Organisers provided on School Hub
Unit 17	<p>Hormonal Communication</p> <ul style="list-style-type: none">• Endocrine System• Adrenal Glands• Pancreas and Histology• Regulation of Blood Glucose Levels• Diabetes	End of topic test	Knowledge Organisers provided on School Hub
Unit 18	<p>Respiration</p> <ul style="list-style-type: none">• Need for Respiration• Mitochondria Structure and Function• Glycolysis• Link Reaction• Krebs Cycle• Oxidative Phosphorylation• Chemiosmotic Theory• Respiratory Substrates and Quotients	End of topic test	Knowledge Organisers provided on School Hub
Unit 19	<p>Cellular Control</p> <ul style="list-style-type: none">• Gene Mutations and effects• Regulation of Gene Expression• Transcriptional Control of Gene Expression• Post-Transcriptional Control• Body Plans• Mitosis• Apoptosis	End of topic test	Knowledge Organisers provided on School Hub
Unit 20	<p>Cloning and Biotechnology</p> <ul style="list-style-type: none">• Cloning Plants• Cloning Animals• Microorganisms in Biotechnology• Culturing• Batch Fermentation• Immobilised Enzymes	End of topic test	Knowledge Organisers provided on School Hub
Unit 21	<p>Patterns of Inheritance</p> <ul style="list-style-type: none">• Phenotype and Variation• Sexual Reproduction and Variation• Genetic Diagrams• Codominance• Dihybrid Crosses• Epistasis• Autosomal Linkage• Chi Square Test• Populations and Gene Pools• Hardy-Weinberg Equilibrium• Speciation• Artificial Selection• Selective Breeding	End of topic test	Knowledge Organisers provided on School Hub



Unit 22	Ecosystems <ul style="list-style-type: none">• Factors affecting Ecosystems• Abundance and Distribution• Biomass Transfers• Nutrient Cycling• Succession	End of topic test	Knowledge Organisers provided on School Hub
Unit 23	Populations and Sustainability <ul style="list-style-type: none">• Population Size• Population Interactions• Conservation and Preservation• Sustainability• Human Impact on Biodiversity	End of topic test	Knowledge Organisers provided on School Hub
Unit 24	Manipulating Genomes <ul style="list-style-type: none">• Gene Sequencing• Restriction Enzymes• PCR• Sequencing Methods• Gel Electrophoresis• Genetic Profiling• In Vivo Gene Cloning and Modification• Ethics of Gene Cloning• Gene Therapy• Gene Editing	End of topic test	Knowledge Organisers provided on School Hub