



Biology: Curriculum Overview
Year 12

Half Term	Teacher 1		Teacher 2		How will I be assessed?
	Topic studied	What will I learn?	Topic studied	What will I learn?	
Year 12 Autumn 1	Topic 2 Cells: Cell structure	Eukaryotic cell structure Cell specialism Prokaryotes Viruses Methods of studying cells Microscopy Mitosis The cell cycle Cancer Bacterial division	Topic 1 Biological Molecules: Monomers and polymers	Principles of biological hydrolysis and condensation reactions to produce monomers/polymers, Carbohydrates, Lipids, Proteins Enzymes including scientific modelling, specificity, rates	Part paper exam questions <u>Assessed practical 1</u> <u>Assessed practical 2</u> 4-week short answer test
Year 12 Autumn 2	Cells: Transport across the membrane Cells: Cell recognition and the	Membrane structure Diffusion Osmosis Active transport and co- transport Cholera Phagocytosis T-Cells B-Cells Antibodies	Nucleic acids are important information- carrying molecules ATP Water Inorganic ions	Structure of DNA and RNA DNA replication ATP structure, functions, uses, importance Water properties related to functions of organism Ions in cytoplasm and body fluids -concentrations and properties.	Past paper questions <u>Assessed practicals 3 and 4</u> Midterm test Past paper questions

	immune system	Vaccination HIV			
Year 12 Spring 1	Topic 3: Organisms exchange substances with their environment: Exchange	Gas exchange in insects and fish Gas exchange in plants Gas exchange in humans Spirometry Lung disease Digestion	Topic 4 Genetic information, variation and relationships between organisms: DNA and protein synthesis	DNA structure, including genes and chromosomes, Features of the code, Transcription, Splicing, Translation, Use of DNA, mRNA, tRNA for protein synthesis, including the role of ribosomes and ATP.	<u>MC test on topic 1 and 2</u> Past paper questions <u>Assessed practical 5</u>
Year 12 Spring 2	Organisms exchange substances with their environment: Mass transport.	Haemoglobin Oxygen transport and dissociation Circulatory system and the heart Cardiac cycle	Genetic diversity arising from meiosis or mutation Diversity and adaptation Species and Taxonomy	Base sequence changes, Meiosis causing variation, Non-disjunction, Genetic diversity and adaption leading to diversity, Mutation leading to directional selection and evolution, Species and courtship, Phylogenetic classification, Evolutionary relationships, Immunology and genome sequencing for clarification.	<u>Long answer paper on topic 1 and 2</u> Past paper questions <u>Assessed practical 6</u>
Year 12 Summer 1	Organisms exchange substances with their environment: Mass transport	Heart disease Vessels and tissue fluid Exercise and the heart Transport in plants	Biodiversity within a community Investigating biodiversity	Biodiversity within range of habitats, Richness and abundance, Index of diversity calculation, Farming techniques vs conservation,	Past paper questions <u>MC on topic 3 and 4</u>

				Quantitative investigations using random sampling, Calculating and interpreting means and standard deviations.	
Year 12 Summer 2		Stats Field trip Rat dissection	Ecology introduction, Succession	Features of seres, including abiotic and biotic, Primary to climax community, Primary and secondary with types, Example of sand dunes. Conservation to advance or hold back seres.	<u>End of year exam Topics 1</u> <u>-4</u> <u>Assessed practical 12</u>