

Year 12

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	summer
Topics covered	Module 3.1 Biological Molecules. Topics: 3.1.1 Monomers and Polymers 3.1.2 Carbohydrates 3.1.3 Lipids, 3.1.4 Proteins Module 3.2 Cells Topics: 3.2.1 Cell Structure 3.2.2 All Cells Arise from other Cells	Module 3.1 Biological molecules. Topics: 3.1.5 Nucleic Acids 3.1.6 ATP 3.1.7 Water 3.1.8 Inorganic ions Module 3.2 Cells Topics: 3.2.2 All cells arise from other cells – cont. 3.2.3 Cell transport across membranes	Module 3.4 Genetic information, variation and relationship between organisms Topics: 3.4.1 DNA, genes and chromosomes 3.4.2 Protein synthesis 3.4.3 Genetic diversity can arise as a result of mutations or during meiosis. Module 3.2 Cells Topics: 3.2.4 Cell recognition & The Immune System – cont.	Module 3.4 Genetic information, variation and relationship between organisms Topics: 3.4.4 Species diversity & adaptation 3.4.5 Species & Taxonomy Module 3.3 Organisms exchange substances with their environment Topics: 3.3.1 Surface area to Volume 3.3.2 Gas Exchange 3.3.3 Digestion and Absorption Mass transport	Module 3.4 Genetic information, variation and relationship between organisms Topics: 3.4.6 Biodiversity within a community Module 3.3 Organisms exchange substances with their environment Topics 3.3.4 Mass transport – cont. 3.4.7 Investigating diversity	Module 3.5 Energy transfers in and between organisms Topics: Introduction to Respiration Introduction to Photosynthesis Module 3.3 Genetic information, variation and relationship between organisms Topics: 3.3 finish unit Data question practice	Summer holiday project set The aim of which is to consolidate year 12 learning and introduce year 13 learning.
Assessments	Baseline Test Formative assessment Summative Assessment EOT Biological Molecules 3.1.1 – 3.1.4	Formative assessment Summative Assessment EOT Biological molecules 3.1.5 – 3.1.8 Cells 3.2.1 - 3.2.3	Formative assessment Summative Assessment EOT Genetic information, variation and relationship between organisms 3.4.1 & 3.4.3 Cells 3.2.4	Formative assessment Summative Assessment EOT Genetic information, variation and relationship between organisms 3.4.4-3.4.6	Formative assessment Summative Assessment EOT Genetic information, variation and relationship between organisms 3.4.7	Formative assessment Summative Assessment EOT End of Year Exam	
Homework	<i>Weekly by topic</i> Pre-reading weekly by topic	<i>Weekly by topic</i> Pre-reading weekly by topic	<i>Weekly by topic</i> Pre-reading weekly by topic	<i>Weekly by topic</i> Pre-reading weekly by topic	<i>Weekly by topic</i> Pre-reading weekly by topic	<i>Weekly by topic</i> Pre-reading weekly by topic	
Practical work	RP1 – Temperature & Enzyme Activity RP2 – Mitosis Others: Reducing and non-reducing sugars. Preparing specimens to be	RP3 - Using a calibration curve to identify water potential RP4 - The effect of ethanol on membrane permeability.	RP5 – Dissection of animal or plant mass transport system.	RP6 – Using aseptic techniques to investigate the effect of antimicrobial substances on microbial growth.			

	viewed under the light Microscope Identification of starch, proteins and lipids.					
Key Skill	Use of microscope Biological drawings Use of microscope Math skills: Magnification calculations Conversion of units Use of Logarithms	Biological drawings Math skills: Error bars and standard deviation Rate calculations Dilution calculations Ratio	Math skills: Surface area to volume ratio calculations Error bars and standard deviation Conversion of units Graph drawing	Risk assessments Dissection procedures Graph drawing Math skills: Error bars and standard deviation Conversion of units	Using aseptic techniques Math skills: Logarithms Error bars and standard deviation Simpsons Index of Diversity calculation	Math skills: Rate calculations Rearranging equation Statistical tests Extended project research and writing to extend curriculum

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topics covered	Module 3.5 Energy transfers in and between organisms Topics: 3.5.1 Photosynthesis 3.5.2 Respiration 3.5.3 Energy & Ecosystems 3.5.4 Nutrient cycles Module 3.7 Genetics, populations, ecosystems and evolution 3.7.1 Inheritance	Module 3.6 Organisms respond to changes in their internal and external environments Topics: 3.6.1 Stimuli both internal and external are detected and lead to a response. 3.6.2 Nervous coordination Module 3.7 Genetics, populations, evolution and ecosystems 3.7.2 Populations 3.7.4 Populations in Ecosystems	Module 3.6 Organisms respond to changes in their internal and external environments Topics: 3.6.2 Nervous coordination continued 3.6.3 skeletal muscle is stimulated to contract by nerves and lead to a response Module 3.8 The control of gene expression Topics 3.8.1 Alterations of DNA 3.8.2 Gene expression	Module 3.6 Organisms respond to changes in their internal and external environments Topics: 3.6.4 Homeostasis is the maintenance of a stable environment Module 3.8 The control of gene expression Topics 3.8.3 Using Genome projects 3.8.4 Gene Technologies	Module 3.8 The control of gene expression – 3.8.4 Gene Technologies – cont. <i>Paper 3 synoptic question practice & exam preparation.</i>	EXAMS
Assessments	Formative assessment Summative Assessment EOT Energy transfers in and between organisms 3.5.1 – 3.5.4	Formative assessment Summative Assessment EOT Organisms respond to changes in their internal and external environments 3.6.1 – 3.6.3 Genetics, populations, ecosystems and evolution 3.7.1 & 3.7.2 MOCK EXAMS SET 1	Formative assessment Summative Assessment EOT Organisms respond to changes in their internal and external environments 3.6.4 Genetics, populations, evolution and ecosystems 3.7.4	Formative assessment Summative Assessment EOT The control of gene expression 3.8.1 – 3.8.3 MOCK EXAMS SET 2	Summative Assessment EOT Gene Technologies 3.8.4	

Homework	Weekly by topic Pre-reading weekly by topic	Weekly by topic Pre-reading weekly by topic	Weekly by topic Pre-reading weekly by topic	Weekly by topic Pre-reading weekly by topic	Weekly by topic Pre-reading weekly by topic

Practical work	RP7 – Investigation of pigments present in leaves RP8 – The effects of different factors on the rate of dehydrogenase activity RP 9 -Investigation into the effect of a named variable on the rate of respiration of yeast.	RP10 – Investigation into the effect of an environmental variable on the movement of an animal (Choice chambers or a maze).	RP11- Production of a series dilution and use of colorimetry to produce a calibration curve to identify different concentrations of glucose in unknown urine sample.	RP12 – Investigation into the effect of a named variable on the distribution of a given species.		
Key skills	Math skills: Error bars and standard deviation Rate calculations Dilution calculations Ratio Conversion of units Graph drawing	Biological drawings Math skills: Error bars and standard deviation Ratio Conversion of units Graph drawing Statistical tests	Biological drawings Math skills: Error bars and standard deviation Statistical tests Ecological measurements	Extended writing Math skills: Error bars and standard deviation Statistical tests	Extended writing	