

BIOLOGY LEARNING PATHWAY

BIG IDEAS	Year 7	Year 8		Y9 Spring	Y9 Summer	Year 10 Autumn	Year 10 Spring	Year 10 Summer	Year 11 Autumn	Year 11 Spring	Year 11 Summer
Cells and cellular processes	B1.1 Cell structure	B2.1 Health and lifestyle	T1: Eukaryotic and prokaryotic cells	T1: Transporting substances	T2: Cell division		T6: Photosynthesis	T6: Photosynthesis (B)		T8: Respiration	Revision
	Cells and organisation	Nutrition and digestion	Cells and organisation	Cells and organisation	Cells and organisation		Gas Exchange Systems	Gas Exchange systems		Cellular respiration	Revision
		Health					Nutrition and digestion	Nutrition and digestion			Revision
							Photosynthesis	Photosynthesis			Revision
							T8: Respiration				
							Cellular respiration				
Biological systems for life	B1.2 Body systems	B2.3 Adaptations and inheritance	T1: Digestion and enzymes		T2: Nervous system	T5: Health and disease	T5: Health and disease (B)		T7: Hormones and homeostasis	T8: Gas exchange	Revision
	The skeletal and muscular systems	Inheritance, chromosomes, DNA and genes	Nutrition and digestion		Cells and organisation	Health	Health		Reproduction	Gas Exchange systems	Revision
	Gas Exchange Systems										
	B1.3 Reproduction					T1: Calorimetry and food tests (B)					s
	Reproduction					Nutrition and digestion					
	Relationships in an ecosystem					T2: Brain and eye (B)					
					T2: Protein synthesis						
					Cells and organisation						
Organisms and their interactions with the environment		B2.2 Ecosystem processes			T3: Genetics	T4: Natural selection and gene modification	T4: Natural selection and gene modification (B)	T9: Ecosystems	T9: Ecosystems (B)		o
					Inheritance, chromosomes, DNA and genes	Inheritance, chromosomes, DNA and genes	Inheritance, chromosomes, DNA and genes				
		Gas Exchange Systems				T3: Multiple alleles and sex linkage (B)		Photosynthesis	Photosynthesis		n
		Nutrition and digestion				Inheritance, chromosomes, DNA and genes		Relationships within an ecosystem			
		Photosynthesis									
	Cellular respiration										
	Relationships within an ecosystem										
Chemistry	Combustion, Acids, word equations, symbol equations, diffusion	Filtration, chromatography, Polymers, testing for carbon dioxide, Carbon cycle, rock cycle, fossils, endo/exothermic reactions	Filtration and Chromatography				fertilisers, reversible reactions and equilibrium		Rate of Reaction inc catalysts, Global Warming, alcohols, carboxylic acids, polymers, fermentation	SA:V Ratio	
Physics											
Math skills	Interpret data, graphs, process collected data, drawing graphs/tables	Interpreting data, graphs - bar/line/histogram, mean, range, mode, median, freq tables, units and equations	standard form, converting units (microscopy), rates of reaction (enzymes), mean, range, plotting and interpreting graphs	% change, plotting graphs, interpreting graphs/data	Interpret/process data, Probability, ratios, %, mean, mode, median, range, frequency tables, histograms, continuous/discontinuous data, amino acid calcs	energy in food calcs, Probability, ratios, %, mean, mode, median, range, frequency tables, histograms, continuous/discontinuous data, area of clear zones, amino acids calcs	area of clear zones, inverse square law, potometer calcs, tangents	interpreting kite diagrams, inverse square law, potometer calcs	interpreting kite diagrams	ficks law	
Prac skills	Prepare onion/cheek cells, diffusion using teabags/potassium permanganate, lung volume, chicken leg demo, forces hinge prac, muscle fatigue prac, flower dissection, mass on time taken for seeds to fall	Biological molecules food tests, effect of pH on enzyme activity, designing experiments - variables, stomata under microscope, starch leaf test, effects of exercise on breathing/heart rate, reaction time	Prepare onion/cheek cells, Biological molecules food tests, pH and enzyme activity	Osmosis in plant cells	Designing experiment, DNA extraction, reaction time	Calorimetry, biological molecules food tests	aseptic technique, light intensity prac, use of potometer, stomata under microscope, leaf starch test	light intensity prac, use of potometer, stomata under microscope, systematic and random sampling	kidney dissection	respiration prac, heart dissection	

Key	
(B)	Sep Sci