

Stage: KS4

Subject: Biology and Trilogy

NB:

- -Bold indicates separate science Biology content only
- -Topics vary in length and may be delivered over multiple half terms, please see curriculum maps.
- -'Organisation' has been delivered to year 10 last year
- Future year groups will begin 'Energy' in year 10

KS4: Yr 10 & 11	4.1 Cell Biology	4.2 Organisation	4.3 Infection & Response	4.4 Bioenergetics	4.5 Homeostasis and Response	4.6 Inheritance, variation and evolution	4.7 Ecology
Yr 9	Year 9 half - term 3						
Yr 10			Yr 10 unit 1	Yr 10 unit 2	Yr 10 unit 3	Year 10 unit 4	
Yr 11						Year 11 unit 1	Year 11 unit 2
Aim of Unit	The aim of this	The aim of this	The aim of this	The aim of this	The aim of	The aim of this	The aim of this
	topic is to build	topic is to	topic is to build	topic is to build	this topic is to	topic is to	topic is to build
	on the	build on the	on knowledge	on the topic	build on	build on the	on the
	Organisms-	Organisms-	from KS3 and	Ecosystems	knowledge	Evolution and	Ecosystems
	Cells topic from	Breathing and	further develop	from KS3 and	from KS3 and	Inheritance	topic from KS3
	KS3 and further	Digestion	the knowledge	further develop	further	topics from	and further
	develop the	topics from	and understanding	the knowledge	develop the	KS3 and	develop the

	knowledge and understanding around cells in organisms. It will also prepare pupils for the required disciplinary knowledge though the required practical activities.	KS3 and further develop the knowledge and understanding around Organisation. It will also prepare pupils for the required disciplinary knowledge through the required practical activities.	of our body's immune-response. It will also prepare pupils for the required disciplinary knowledge through the required practical activities.	and understanding around Respiration and Photosynthesis. It will also prepare pupils for the required disciplinary knowledge through the required practical activities.	knowledge and understanding around our body's response to internal and external changes. It will also prepare pupils for the required disciplinary knowledge through the required practical activities.	further develop the knowledge and understanding around how evolution takes place, how we inherit characteristics and how variation occurs. It will also prepare pupils for the required disciplinary knowledge through the required practical	knowledge and understanding around interdependence between humans and other organisms. It will also prepare pupils for the required disciplinary knowledge through the required practical activities.
Composite Knowledge (a task that requires several building blocks or components)	Pupils will extend their understanding of key points and applications relating to Cells.	Pupils will extend their understanding of key points and applications relating to Organisation.	Pupils will extend their understanding of key points and applications relating to Infection and Response.	Pupils will extend their understanding of key points and applications relating to Bioenergetics.	Pupils will extend their understanding of key points and applications relating to Homeostasis and Response.	activities. Pupils will extend their understanding of key points and applications relating to Inheritance, Variation and Evolution.	Pupils will extend their understanding of key points and applications. relating to Ecology
Component Knowledge (the building blocks that	4.1.1.1 Eukaryotes and prokaryotes	4.2.1 Principles of organisation	4.3.1.1 Communicable (infectious) diseases	4.4.1.1 Photosynthetic reaction	4.5.1 Homeostasis 4.5.2 The human	4.6.1.1 Sexual and asexual reproduction 4.6.1.2 Meiosis	4.7.1.1 Communities 4.7.1.2 Abiotic factors

together, when	4.1.1.2 Animal	4.2.2.1 The	4.3.1.2 Viral	4.4.1.2 Rate of	nervous	4.6.1.3	4.7.1.3 Biotic
known, allow successful	and plant cells	human	diseases	photosynthesis	system 4.5.2.1	Advantages	factors
performance of a	4.1.1.3 Cell	digestive	4.3.1.3 Bacterial	4.4.2.1 Aerobic	Structure and	and	4.7.1.4
complex task)	specialisation	system	diseases	and anaerobic	function	disadvantages	Adaptations
	4.1.1.4 Cell	4.2.2.2 The	4.3.1.4 Fungal	respiration	4.5.2.2 The	of sexual and	4.7.2.1 Levels of
	differentiation	heart and	diseases	4.4.2.2	brain	asexual	organisation
	4.1.1.5	blood vessels	4.3.1.5 Protist	Response to	4.5.2.3 The	reproduction	4.7.2.1 Required
	Microscopy	4.2.2.3 Blood	diseases	exercise	eye	4.6.1.4 DNA	practical 9: Field
	4.1.1.6	4.2.2.4	4.3.1.6 Human	4.4.2.3	4.5.2.4	and the	investigations
	Culturing	Coronary heart	defence systems	Metabolism	Control of	genome	4.7.2.2 How
	microorganisms	disease: a non-	4.3.1.7		body	4.6.1.5 DNA	materials are
	(separates only)	communicable	Vaccination		temperature	structure	cycled
	4.1.2.1	disease	4.3.1.8		4.5.3.1 Human	4.6.1.6 Genetic	4.7.2.3
	Chromosomes	4.2.2.5 Health	Antibiotics and		endocrine	inheritance	Decomposition
	4.1.2.2 Mitosis	issues	painkillers		system	4.6.1.7	4.7.2.3
	and the cell	4.2.2.6 The	4.3.1.9 Discovery		4.5.3.2	Inherited	Required
	cycle	effect of	and development		Control of	disorders	practical 10:
	4.1.2.3 Stem	lifestyle on	of drugs		blood glucose	4.6.1.8 Sex	Decay
	cells	some non-	4.3.2.1		concentration	determination	4.7.2.4 Impact
	4.1.3.1 Diffusion	communicable	Producing		4.5.3.3	4.6.2.1	of
	4.1.3.2 Osmosis	diseases	monoclonal		Maintaining	Variation	environmental
	4.1.3.3 Active	4.2.2.7 Cancer	antibodies (HT		water and	4.6.2.2	change (HT
	transport	4.2.3.2 Plant	only)		nitrogen	Evolution	only)
		organ system	4.3.2.2 Uses of		balance in the	4.6.2.3	4.7.3.1
		4.2.3.1 Plant	monoclonal		body 4.5.3.4	Selective	Biodiversity
		tissues	antibodies (HT		Hormones in	breeding	4.7.3.2 Waste
		4.2.3.2 Plant	only)		human	4.6.2.4 Genetic	management
		organ system	4.3.3 Plant		reproduction	engineering	4.7.3.3 Land use
			disease (biology		4.5.3.5	4.6.2.5	4.7.3.4
			only) 4.3.3.1		Contraception	Cloning	Deforestation
			Detection and		4.5.3.6 The	4.6.3.1 Theory	4.7.3.5 Global
			identification of		use of	of evolution	warming
			plant diseases		hormones to	(biology only)	4.7.3.6
					treat infertility	4.6.3.2	Maintaining
					(HT only)	Speciation	biodiversity

			4.3.3.2 Plant		4.5.3.7	4.6.3.3 The	4.7.4.1 Trophic
			defence		Negative	understanding	levels
			responses		feedback (HT	of genetics	4.7.4.2
			responses		only) 4.5.4	4.6.3.4	Pyramids of
					Plant	Evidence for	biomass
					hormones	evolution	4.7.4.3 Transfer
					4.5.4.1	4.6.3.5 Fossils	of biomass
						4.6.3.6	4.7.5.1 Factors
					Control and		
					coordination	Extinction	affecting food
					4.5.4.2 Use of	4.6.3.7	security
					plant	Resistant	4.7.5.2 Farming
					hormones	bacteria	techniques
					(HT only)	4.6.4	4.7.5.3
						Classification	Sustainable
						of living	fisheries
						organisms	4.7.5.4 Role of
							biotechnology
Rationale	Builds on KS3	Builds on KS3	Builds on KS3 in	Builds on KS3	Builds on KS3	Builds on KS3	Builds on KS3 in
(why?):	in Organisation	in Organisation	Organisation 1	in Ecosystems	in	in Organisation	Organisation 1
Links to	1 and 2. This	1 and 2. This	and 2. This unit	1 and 2. This	Organisation 1	1 and 2. This	and 2. This unit
prior &	unit prepares	unit prepares	prepares pupils	unit prepares	and 2. This	unit prepares	prepares pupils
future	pupils for	pupils for	for continuing	pupils for	unit prepares	pupils for	for continuing
learning	continuing	continuing	energy at KS5 in	continuing	pupils for	continuing	energy at KS5 in
	energy at KS5 in	energy at KS5	A level units such	energy at KS5	continuing	energy at KS5	A level units
	A level units	in A level units	as 'Cells'. It	in A level units	energy at KS5	in A level units	such as
	such as 'Cell'. It	such as	offers	such as 'Energy	in A level	such as 'The	'Genetics
	offers	'Organisms'-	opportunities to	transfers in and	units such as	control of	populations,
	opportunities to	exchange	explore Stem	between	'Organisms	gene'	evolutions and
	explore Stem	substances	careers in	organisms'. It	respond to	expression. It	ecosystems'. It
	careers in Cell	with their	Virology and	also offers	their	offers	offers
	biology.	environment.	Immunology.	opportunities to	environment'.	opportunities	opportunities to
		It offers		explore Stem	It offers	to explore	explore Stem
		opportunities		careers such as	opportunities	Stem careers in	careers in
		to explore		Physiotherapy.	to explore	climate change	genetics and
		Stem careers in			Stem careers	and Zoology.	fertility.

		Physiology and			such as		
		Medicine.			Neuroscience.		
Assessment	End of topic	End of topic	End of topic	End of topic	End of topic	End of topic	End of topic
Task	assessment.	assessment.	assessment.	assessment.	assessment.	assessment.	assessment.
	(Foundation or	(Foundation	(Foundation or	(Foundation	(Foundation	(Foundation	(Foundation or
	Higher). H/W	or Higher).	Higher). H/W	or Higher).	or Higher).	or Higher).	Higher). H/W
	quiz on SMH	H/W quiz on	quiz on SMH	H/W quiz on	H/W quiz on	H/W quiz on	quiz on SMH
	every week to	SMH every	every week to	SMH every	SMH every	SMH every	every week to
	retain	week to retain	retain	week to retain	week to	week to retain	retain
	knowledge	knowledge	knowledge	knowledge	retain	knowledge	knowledge
	(Interrupt the	(Interrupt the	(Interrupt the	(Interrupt the	knowledge	(Interrupt the	(Interrupt the
	forgetting	forgetting	forgetting	forgetting	(Interrupt the	forgetting	forgetting
	curve).	curve).	curve).	curve).	forgetting	curve).	curve).
					curve).		
Enrichment	Practical	Practical	Practical lessons	Practical	Practical	Practical	Practical
	lessons applied	lessons	applied to	lessons	lessons	lessons	lessons applied
	to everyday	applied to	everyday	applied to	applied to	applied to	to everyday
	scenarios.	1		arramridari	arramridari		scenarios.
		everyday	scenarios.	everyday	everyday	everyday	
	Utilising GCSE	scenarios.	Utilising GCSE	scenarios.	scenarios.	scenarios.	Utilising GCSE
		scenarios. Utilising	Utilising GCSE POD or other	scenarios. Utilising	scenarios. Utilising	scenarios. Utilising	
	Utilising GCSE POD or other online	scenarios.	Utilising GCSE POD or other online providers	scenarios.	scenarios.	scenarios.	Utilising GCSE POD or other online
	Utilising GCSE POD or other online providers to	scenarios. Utilising	Utilising GCSE POD or other	scenarios. Utilising	scenarios. Utilising GCSE POD or other	scenarios. Utilising GCSE POD or other	Utilising GCSE POD or other online providers to
	Utilising GCSE POD or other online providers to facilitate	scenarios. Utilising GCSE POD or other online	Utilising GCSE POD or other online providers	scenarios. Utilising GCSE POD or other online providers to	scenarios. Utilising GCSE POD	scenarios. Utilising GCSE POD or other online	Utilising GCSE POD or other online providers to facilitate
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