

# Long Term Plan: Biology Year 13 (Teacher One)

Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Link to subject ethos and driver (rename)	Anticipated misconceptions	Links to previous KS	Opportunity for stretch for high prior attainers	SMSC & British Values	Cultural Capital	Career Link
One	Response	<p>Types of response, including practical investigation of plants and animals</p> <p>The nervous system, including action potential transmission and synapses</p> <p>The Eye as an example of a receptor</p> <p>Control of Heart Rate</p>	<p>Level three technical and practical skills, including use of advanced glassware to carry out a wide range of investigations.</p> <p>Practical Microscopy and drawing of scientific diagrams</p> <p>Accurate measurement of substances using a variety of equipment.</p>		Confusion between charges and direction of ion movement during an action potential.	This unit builds on from work done on homeostasis at KS4. Students should already have an understanding of the structure of the nervous system and its role in maintaining body conditions.	Quantitative analysis of an action potential	<p>Safe working in a lab, and respecting each other's working space.</p> <p>Ethical issues surrounding the use of biological samples, including the use of live samples.</p>	The ubiquity of biology allows for examples to be taught in a wide variety of familiar and unfamiliar contexts	<p>An A-level in biology opens to doors to a wide range of STEM field careers.</p> <p>The topics covered in this unit would build the foundations for students to study a range of biomedical and healthcare courses or to enter these fields through employment</p>

			<p>Safe handling of corrosive and toxic chemicals, including cellular stains</p> <p>Presenting and interpreting data in graphical and tabular form</p> <p>Extended writing, including producing formal lab write ups with references and citations</p> <p>Following written methods</p>							
Two	Response	<p>Homeostasis</p> <p>The control of blood sugar and water potential</p> <p>The second messenger model</p> <p>Diabetes</p>	<p>Level three technical and practical skills, including use of advanced glassware to carry out a wide range of investigations.</p> <p>Practical Microscopy and drawing of</p>		<p>Confusion between positive and negative feedback loops</p> <p>Confusion between types of diabetes</p>	<p>Students will have previously studied the control of blood sugar as an overview and this section of the unit will look at this in more detail before extending by looking at</p>	<p>Quantitative analysis of feedback loops.</p>	<p>Safe working in a lab, and respecting each other's working space.</p> <p>Ethical issues surrounding the use of biological samples, including the use of live samples.</p>	<p>The ubiquity of biology allows for examples to be taught in a wide variety of familiar and unfamiliar contexts</p>	<p>An A-level in biology opens to doors to a wide range of STEM field careers.</p> <p>The topics covered in this unit would build the foundations for students to study a range of</p>

			<p>scientific diagrams</p> <p>Accurate measurement of substances using a variety of equipment.</p> <p>Safe handling of corrosive and toxic chemicals, including cellular stains</p> <p>Presenting and interpreting data in graphical and tabular form</p> <p>Extended writing, including producing formal lab write ups with references and citations</p> <p>Following written methods</p>			control of water potential as a second example of negative feedback				biomedical and healthcare courses or to enter these fields through employment
Three	Genetics, Variation and Evolution	Gene linkage and epistasis	Level three technical and practical skills,		Changing the subject of an equation and	Although this unit follows on from where Y12	Multi-step genetics calculations	Safe working in a lab, and respecting each	The ubiquity of biology allows for examples to	An A-level in biology opens to doors to a

		<p>Chi Squared and Hardy-Weinberg Principle.</p> <p>Practical investigation of allele distribution</p>	<p>including use of advanced glassware to carry out a wide range of investigations.</p> <p>Accurate measurement of substances using a variety of equipment.</p> <p>Safe handling of corrosive and toxic chemicals, including cellular stains</p> <p>Presenting and interpreting data in graphical and tabular form</p> <p>Extended writing, including producing formal lab write ups with references and citations</p> <p>Following written methods</p>		<p>converting units</p> <p>Confusion between dominant and co-dominant, especially when combined with epistatic mechanisms</p>	<p>study of genetics left off, most of the content covered will be new to students, though they will already be familiar with simple genetics terminology such as allele, dominant and heterozygous</p>		<p>other's working space.</p> <p>Ethical issues surrounding the use of biological samples, including the use of live samples.</p>	<p>be taught in a wide variety of familiar and unfamiliar contexts</p>	<p>wide range of STEM field careers.</p> <p>The topics covered in this unit would build the foundations for students to study a range of biomedical and healthcare courses or to enter these fields through employment</p>
--	--	--	---	--	---	---	--	---	--	--

			Mathematical skills, including changing the subject of an equation, multi step problem solving, percentages, graph drawing, drawing tangents to a curve, ratios, using standard form, fractions and working with powers.							
Four	Genetics, Variation and Evolution	Speciation  Ecological succession  Sampling techniques and practical investigation of species distribution	Level three technical and practical skills, including use of advanced glassware to carry out a wide range of investigations.  Accurate measurement of substances using a variety of equipment.  Safe handling of corrosive and toxic		Definition of a species.  Use and application of different sampling techniques.	This unit follows directly on from student's previous study of ecology at the end of Y12	At what point does speciation occur?	Safe working in a lab, and respecting each other's working space.  Ethical issues surrounding the use of biological samples, including the use of live samples.	The ubiquity of biology allows for examples to be taught in a wide variety of familiar and unfamiliar contexts	An A-level in biology opens to doors to a wide range of STEM field careers.  The topics covered in this unit would build the foundations for students to study a range of conservation or ecology courses or to enter these fields through employment

			<p>chemicals, including cellular stains</p> <p>Presenting and interpreting data in graphical and tabular form</p> <p>Extended writing, including producing formal lab write ups with references and citations</p> <p>Following written methods</p>							
Five	Revision and preparation for A-Level exams									
Six	Revision and preparation for A-Level exams									