



Curriculum Map

Subject: Triple Science Biology (**GCSE Biology ONLY content in RED**)

Year Group: 11

	Autumn 1/Autumn 2	Autumn 2	Autumn 2/Spring 1	Spring 2	Summer
Content	<p>1 Review of Year 10 topics</p> <p>2 Human Nervous System Principles of homeostasis Structure and Function of the Nervous System Reflex Actions</p> <p>Structure and functions of the brain -Imaging techniques to identify brain function and disorders -Structure and function of the eye - Accommodation and eyesight problems - Control of body temperature Maintaining water and nitrogen balance in the body -Control and coordination of plant hormones and their uses in agriculture and horticulture</p>	<p>1 Hormonal Control Principles off hormonal control Glucose control and diabetes Hormones and the menstrual cycle</p> <p>2 Reproduction Types of reproduction Cell division in sexual reproduction DNA and inheritance Genetic disorders Sex determination Screening for genetic disorders</p> <p>Advantages and disadvantages of sexual and asexual reproduction - -DNA Structure Genetic engineering -Cloning - Theory of evolution - Speciation -The understanding of genetics</p>	<p>1 Variation and Evolution Variation Evolution by natural selection Selective breeding Genetic engineering and new technologies</p> <p>2 Genetics and Evolution Evidence for evolution Fossils and extinction Antibiotic resistant bacteria classification</p>	<p>1 Adaptation, Interdependence and Competition Communities and their importance Distribution and abundance Competition in animals and plants Adaptation</p> <p>2 Biodiversity and ecosystems Biodiversity Human population explosion and its effect on the earth's resources Land, water and air pollution Deforestation and peat destruction Global warming Maintaining biodiversity</p>	<p>Review and Revise</p>
Skills	<p>Use appropriate apparatus to record time. -Selecting appropriate apparatus and techniques to measure the process of reaction time. -Safe and</p>	<p>Apply scientific knowledge and understanding to explain how hormones control glucose levels in the blood,</p>	<p>Consider ethical issues relating to biology topics and medical treatments. - Extract and interpret information from charts, graphs and</p>	<p>Analysing and interpreting tables of data and graphs to explain the effects of human activity and human population explosion on the earth's resources</p>	

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	<p>ethical use of humans to measure physiological function of reaction time and responses to a chosen factor. -Translate information between numerical and graphical forms. -Use appropriate apparatus to record length and time. - - Plan experiments to make observations to explore the phenomena of plant responses. Present observations as tables, graphs or drawings.</p>	<p>Explain the problems diabetes can cause, and understand the treatments available. Be able to use and interpret and use punnet squares. Translate information between numerical and graphical forms.</p>	<p>tables -Understand how scientific methods and theories develop over time Translate information between numerical and graphical forms.</p>		
Key questions	<p>What is homeostasis and why is it important? Why do we need a nervous system? How does the nervous system work? What are reflexes and how do they work? How can hormones be used to treat fertility issues? -What is osmoregulation? -How do plants respond to external stimuli?</p>	<p>What is the endocrine system and how does it work? What are hormones? How is our blood glucose level controlled? How is diabetes treated? How do hormones control changes in our bodies at puberty? How do hormones control the menstrual cycle? How do different artificial ways of controlling fertility work? How do infertility treatments work?</p>	<p>What makes us different to the rest of our family? How does natural selection work and how does evolution happen? What is selective breeding and what are the benefits and risks? What is genetic engineering and what are the benefits and problems associated with it in agriculture and medicine? What is the evidence for the origins of life on earth?</p>	<p>What are stable communities? How are organisms adapted to the conditions they live in? What are some of the factors that affect communities? How can we measure the distribution of living things in their natural habitats? Why do animals compete and why do plants compete? What makes an animal a successful competitor? What do organisms need to survive?</p> <p>What is biodiversity? How has the human population explosion affected the earth's resources? How have human activities polluted the land, sea and air?</p>	

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		What is the difference between asexual and sexual reproduction? How does meiosis work? What is the role of DNA in inheritance? How does inheritance work? How do we screen for genetic disorders?	What can we learn from fossils? How do species become extinct? How does antibiotic resistance develop? What are the basic principles of classification and the system developed by Linnaeus? What are the new systems of classification?	What is acid rain and what effects does it have? What is deforestation and what effects does it have on biodiversity.	
Assessment	Formative 'low stakes' assessments to take place more frequently throughout the term. This could be in the form of a range of methods: Quiz Homework task Microsoft Forms short tests In class short tests Questions and answer sessions Spelling tests Group work tasks Peer assessments Literacy and numeracy activities End of term summative assessments		Formative 'low stakes' assessments to take place more frequently throughout the term. This could be in the form of a range of methods: Quiz Homework task Microsoft Forms short tests In class short tests Questions and answer sessions Spelling tests Group work tasks Peer assessments Literacy and numeracy activities End of term summative assessments		
Literacy/ Numeracy/ SMSC/ Character	Literacy -Appropriate use of tier three vocabulary. -Develop extended answers through practice of 6 mark questions. -Plan experiments or devise procedures to make observations -Development of comprehension skills through research using a		Literacy Consider ethical issues relating to biology topics and medical treatments. Numeracy Extract and interpret information from charts, graphs and tables – SMSC Evaluating the use of genetic engineering and discussion of the ethical issues surrounding its use -		

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	<p>variety of sources.</p> <p>Numeracy</p> <ul style="list-style-type: none"> -Calculating means -Translating numerical data into graphical forms <p>SMSC</p> <ul style="list-style-type: none"> -Safe and ethical use of humans and living organisms in scientific investigations -Discussion of ethical issues surrounding kidney transplants -Discussion of ethical issues surrounding fertility treatments and IVF <p>Character</p> <ul style="list-style-type: none"> -Tolerance - Showing tolerance towards others views considering fertility treatments -Confidence - Building confidence in practical skills with the completion of two/three required practicals. -Resilience & Initiative -Resolving difficulties in practical techniques 		<p>Discussion surrounding which species conservation efforts should focus on - Evaluating the use of selective breeding and discussion of the ethical issues surrounding its use -Discussion surrounding scientific theories and religious beliefs</p> <p>Understand how scientific methods and theories develop over time</p> <p>Character -Tolerance -Showing tolerance towards others views considering genetic engineering and selective breeding -Integrity -Demonstrating sensitivity when considering the effect of genetic disorders.</p>		