

Year 9 Triple Biology Curriculum Plan								
Unit	Core		Hinterland		NC Coverage	Assessment	Whole Education Opportunities	
	Knowledge	Skills	Knowledge	Skills				
Biology	SB1 - Key Concepts in Biology	<ul style="list-style-type: none"> Microscopes Organelles found in plants and animal cells and their structure Specialised plant and animal cells Bacteria Enzymes in nutrition, how they work and activity levels Testing foods Methods of Transporting Substances (osmosis, diffusion and active transport) 	<ul style="list-style-type: none"> Using a microscope, preparing a slide Calculating magnification Following scientific methods in practical work Using SI units Using Standard form (H) 	<ul style="list-style-type: none"> Quantum microscopes – looking at a microscope that uses quantum physics to trace atoms. This helps look at cell structure. Microorganisms survive harsh environments – students discover the wonderful world of extremophiles 	<ul style="list-style-type: none"> Discussion and debate on how quantum microscopes can further our understanding of cells. Discussion and debate on how extremophiles can be used in technology to help humankind. apparatus diagrams 	B1.1 to B1.17	End of topic assessment (35 marks) PR points use mixed topic assessments	<ul style="list-style-type: none"> SMSC – Should we drink milk? - debate around lactose intolerance Careers – The work of biochemists, biotechnologists, perfume chemist RSHE- Access to gluten foods
	SB2 - Cells and Control	<ul style="list-style-type: none"> Mitosis Growth in animals and plants Stem cells The brain and spinal cord problems The nervous system components Spinal injuries and brain scans (H) The eye Neurotransmission speeds and impulses 	<ul style="list-style-type: none"> Describing trends in graphs Understand and use percentiles 	<ul style="list-style-type: none"> Tracking growth of human babies using graphs Zebrafish can repair their own hearts – the applications for human medicine How do drugs affect the brain? 	<ul style="list-style-type: none"> Interpreting data Application to real world problems (heart disease) 	B2.1 to B2.17	End of topic assessment (35 marks) PR points use mixed topic assessments	<ul style="list-style-type: none"> SMSC – human development and growth SMSC – is it right to use embryonic stem cells for research/ treatment? SMSC – Why are drugs so addictive? Careers – Neurologist Careers – Social worker/ therapists for addictions RSHE – why are stem cell donations decreasing?
	SB3 - Genetics	<ul style="list-style-type: none"> Asexual and sexual reproduction Meiosis DNA structure and extraction Protein synthesis Alleles Inheritance Multiple alleles Genetic mutations Inherited and environmental variation 	<ul style="list-style-type: none"> Comparing and contrasting Modelling Drawing and interpreting genetic diagrams, punnet squares and pedigree charts Drawing bar graphs (continuous and non-continuous data) Considering trends and patterns 	<ul style="list-style-type: none"> Why is it so difficult for a Panda to become impregnated? Is this why they are endangered? Epigenetics – how your environmental influences can change your DNA, and effect what you pass on to the next generation (cell memory) 	<ul style="list-style-type: none"> Critical thinking. Application to real world problems (Biodiversity) Self-awareness 	B3.1 to B3.23	End of topic assessment (35 marks) PR points use mixed topic assessments	<ul style="list-style-type: none"> SMSC – anti-bullying and racism using genetic arguments Careers - Forensic Science Career – Family Pedigree RSHE – Sex-Linked Genetic Diseases
	SB4 - Natural Selection and Genetic Modification	<ul style="list-style-type: none"> Evidence for human evolution Darwin's theory of natural selection Classification of organisms Breeds and varieties Tissue culture Genes used in agriculture and medicine (genetic engineering (H)) GM and agriculture Fertilisers and biological control 	<ul style="list-style-type: none"> Comparing and contrasting Observing Following processes Reading and interpreting data. Considering trends and patterns 	<ul style="list-style-type: none"> The science behind producing domesticated animals, pets e.g. Pedigree Dogs. Quorn, the soil mould that has that produces our meat alternatives. 	<ul style="list-style-type: none"> Awareness/application of science in the world around them. Critical thinking 	B4.1 to B4.13	End of topic assessment (35 marks) PR points use mixed topic assessments	<ul style="list-style-type: none"> SMSC – If we can genetically modify crops to be perfect, can we do the same to humans? SMSC – Is it ethical to genetically screen embryos and terminate those that carry genetic diseases? Careers – Taxonomist Careers – Agriculture/Farming RSHE – The Science behind attraction.