

Year 9 Biology Curriculum Plan							
Unit	Core		Hinterland		NC Coverage	Assessment	Whole Education Opportunities
	Knowledge	Skills	Knowledge	Skills			
Key Concepts in Biology (CB1)	<ul style="list-style-type: none"> Microscopes Organelles found in plants and animal cells and their structure Specialised plant and animal cells Bacteria Testing foods Enzymes in nutrition, how they work and activity levels 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 Core practical – pH and enzymes Core practical – Osmosis in potato slices 	<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. 	4WD2 4WD3 4WD4 4WD5 4WV1 4WV2 4WV3 4BG2 4BC1 4BC3 4BC4	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
Cells and Control	<ul style="list-style-type: none"> Mitosis Growth in animals and plants Stem cells The brain The nervous system components The eye Neurotransmission speeds and impulses 	<ul style="list-style-type: none"> Describing trends in graphs 	<ul style="list-style-type: none"> Tracking growth of human babies using graphs 	<ul style="list-style-type: none"> Interpreting data 	4WD2 4WD3 4WD4 4WV1 4WV2 4BC2	End of topic assessment (35 marks) PR points use mixed topic assessments	<ul style="list-style-type: none"> SMSC – human development and growth
Genetics	<ul style="list-style-type: none"> Sexual and asexual reproduction Meiosis DNA structure and extraction Genetic variants and phenotypes Gregor Mendel Alleles Inheritance Multiple and missing alleles Genetic mutations 	<ul style="list-style-type: none"> Genetic diagrams and pedigree charts Drawing bar graphs (continuous and non-continuous data) 	<ul style="list-style-type: none"> Forensic Science Variation leading to discrimination 	<ul style="list-style-type: none"> 	4WD2 4WD3 4WD4 4WV1 4WV2 4WA1a 4BG8 4BI1 4BI2 4BI4 4BI5 4BI6 4BI7	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

	<ul style="list-style-type: none"> Inherited and environmental variation 						
Natural Selection and Genetic Modification	<ul style="list-style-type: none"> Evidence for human evolution Darwin's theory of natural selection Development of Darwin's theory Classification of organisms Breeds and varieties Tissue culture Genes used in agriculture and medicine (genetic engineering) Fertilisers and biological control 	<ul style="list-style-type: none"> How theories change with time and evidence 	<ul style="list-style-type: none"> Genetic engineering in farming and medicine 	<ul style="list-style-type: none"> Morals and ethics in regards to genetic engineering 	4WD1 4WD2 4WD3 4WD4 4WV1 4WV2 4BG9 4BI3 4BI8 4BI9 4BI10 4BI11 4BI12	End of topic assessment (35 marks) PR points use mixed topic assessments	<ul style="list-style-type: none"> Philosophy and Ethics – debating morals and ethical impacts of scientific processes