Bishop Stopford's School

Curriculum Map Year 13 **Biology**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	Section 5 Energy transfer in and between organisms Photosynthesis Section 6 Organisms respond to changes in their environment Response to stimuli		Section 7 Genetics, populations, evolution and ecosystems Inherited change	Section 8 The control of gene expression	Revision	Revision and Exams
Core Skills	• Enquiry • Communication (literacy) • Develop extended writing • Critical thinking • Analysis • Critical evaluation • Make judgements • Make arguments • Draw informed decisions • Synthesis of information • Inference • Numeracy		• Enquiry • Communication (literacy) • Develop extended writing • Critical thinking • Analysis • Critical evaluation • Make judgements • Make arguments • Draw informed decisions • Synthesis of information • Inference • Numeracy	• Enquiry • Communication (literacy) • Develop extended writing • Critical thinking • Analysis • Critical evaluation • Make judgements • Make arguments • Draw informed decisions • Synthesis of information • Inference • Numeracy	• Enquiry • Communication (literacy) • Develop extended writing • Critical thinking • Analysis • Critical evaluation • Make judgements • Make arguments • Draw informed decisions • Synthesis of information • Inference • Numeracy	• Enquiry • Communication (literacy) • Develop extended writing • Critical thinking • Analysis • Critical evaluation • Make judgements • Make arguments • Draw informed decisions • Synthesis of information • Inference • Numeracy
Core Knowledge	Section 5 Energy transfer in and between organisms Photosynthesis • Overview of photosynthesis • The light-dependant reaction • The light independent reaction Respiration • Glycolysis • Link reaction and Krebs cycle • Oxidative phosphorylation • Anaerobic respiration Section 6 Organisms respond to changes in their environment Response to stimuli • Survival and response • Plant growth factors • A reflex arc • Receptors • Control of heart rate	Section 5 Energy transfer in and between organisms Energy & Ecosystems • Productivity Nutrient Cycles • N Cycle • P Cycle Section 6 Organisms respond to changes in their environment Nervous coordination and muscles • Neurones and the nervous system • The nerve impulse • Passage of an action potential • Speed of the nerve impulse • Structure and function of synapses • Transmission across a synapse • Structure of skeletal muscle • Contraction of skeletal muscle Homeostasis • Principles of homeostasis • Feedback mechanisms • Hormones and the regulation of blood glucose concentration • Diabetes and its control • Control of blood water potential – structure of the nephron • Role of the nephron in osmoregulation • The role of hormones in osmoregulation	Section 7 Genetics, populations, evolution and ecosystems Inherited change • Studying inheritance • Monohybrid inheritance • Probability and genetic crosses • Dihybrid Inheritance • Codominance and multiple alleles • Sex-Linkage • Autosomal Linkage • Epistasis • The chi-squared test Populations and evolution • Population genetics • Variation in phenotype • Natural selection • Effects of different forms of selection on evolution • Isolation and speciation Populations in ecosystems • Populations in ecosystems • Variation in population size • Competition • Predation • Investigating populations • Succession • Conservation of habitats	Section 8 The control of gene expression • Gene expression • Gene mutations • Stem cells and totipotency • Regulation of transcription and translation • Epigenetic control of gene expression • Gene expression and cancer • Genome projects Recombinant DNA Technology • Producing DNA fragments • In Vivo gene cloning – the use of vectors • In vitro gene cloning – the polymerisation chain reaction • Locating genes, genetic screening and counselling • Genetic fingerprinting		Revision and Exams
Assement & Feedback	Formative HL Tasks set on each topics lesson schedule to include preparing presentations, CPAC assessments and presentations End of topic test at end of each unit of study Summative Assessments in October and March					
Link to prior learning	Mono and Polysaccharide formation, role of mitochondria and chloroplasts, enzyme activity, cell membrane structure and function, transport across membranes	Photosynthesis & respiration, specialised cells, active transport, transport across membranes.	DNA structure, Protein synthesis, selection pressures, directinal and stabilising selection, GCSE knowledge of ecosystems and ecology practicals.	DNA structure, Protein Synthesis, Enzymes - co-factors	Section 1 Biological Molecules Section 2 Cells Section 3 Organisms exchange substances with their environment Section 4 Genetic Information, variation and relationships between organisms	Section 1 Biological Molecules Section 2 Cells Section 3 Organisms exchange substances with their environment Section 4 Genetic Information, variation and relationships between organisms