Biology Year 10

Intent : Science curriculum intent: As a school our curriculum inspires students to want to know more, understand more and be able to do more. In science we intend to harness the innate desire in young people to want to know more about the world and use this to help them understand how the strands of science learning fit into the big picture. We intend to help the students develop into learners who can see a problem and work both independently and together to find a solution. We recognise that all young people are scientists, and we aim to enable them to develop these skills. At the start of year 10 students will have already made a strong start on the key concepts that underpin their GCSE courses and they will end the year having covered all of the topics from "paper 1" in each subject.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10 combined Biology Units	CB2 – Cells and control CB3 - Genetics	CB3 – Genetics CB4 natural selection and genetic modification	CB5 health, disease and the development of medicine	CB7 Animal co-ordination, control and homeostasis	CB6 Plant structures and their functions	CB6 Plant structures and their functions End of year 10 exams
Key Content	**Cells and Control** Mitosis and cell cycle Growth and differentiation Stem cells and their applications Nervous system and reflex arcs Percentile charts, correlation analysis	**Genetics** DNA structure and genome Inheritance and genetic diagrams Variation and mutation Probability, ratios, pedigree analysis **Natural Selection and Genetic Modification** Darwin's theory and fossil evidence Antibiotic resistance Selective breeding and genetic engineering Genetic engineering stages, ethical evaluation	**Health, Disease and Medicines** Communicable and non-communicable diseases Pathogens and immune response Antibiotics and drug development BMI calculations, lifestyle impact analysis	**Animal Coordination and Homeostasis** Hormones and endocrine system Menstrual cycle and contraception Blood glucose regulation and diabetes Negative feedback, ART, glucagon regulation	**Plant Structures and Functions** Photosynthesis and limiting factors Transport systems: xylem and phloem Transpiration and environmental effects Inverse square law, rate calculations	
Literacy	Key word sheets CB2 and CB3	Key word sheets CB3 and CB4	Key word sheets CB5	Key word sheets CB7	Key word sheets CB6	
Knowledge organiser	CB2 – Cells and control CB3 - Genetics	CB3 – Genetics CB4 natural selection and genetic modification	CB5 health, disease and the development of medicine	CB7 Animal co-ordination, control and homeostasis	CB6 Plant structures and their functions	
Assessment	Assessment one will cover cells and control.	Assessment two will cover Genetics and natural selection and genetic modification	Assessment three will cover health, disease and the development of medicine	Assessment four will cover Animal co-ordination, control and homeostasis	End of year 10 assessment	

GCSE AO Link (or other) if applicable	In science the assessment objectives are: AO1 Demonstrate knowledge and understanding. AO2 Apply knowledge and understanding. AO3 Analyse information and ideas. These are all covered in each block of three modules.					
Homework	One piece of homework, set on Seneca, each week following a rotation of biology, chemistry, physics. This should take up to 45 minutes.					
CEIAG – STEM careers that relate to these topics.	CB2 – Cells and Control •Neuroscientist •Geneticist •Stem Cell Researcher •Developmental Biologist	CB3 – Genetics •Genetic Counsellor •Forensic Scientist •Bioinformatician •Molecular Biologist CB4 – Natural Selection and Genetic Modification •Evolutionary Biologist •Agricultural Scientist •Biotech Engineer •Ethics Advisor (Science)	CB5 – Health, Disease and Medicines •Doctor •Pharmacologist •Epidemiologist •Public Health Analyst	CB7 – Animal Coordination and Homeostasis •Endocrinologist •Reproductive Health Specialist •Diabetes Educator •Medical Practitioner	CB6 – Plant Structures and Functions •Botanist •Agricultural Consultant •Environmental Scientist •Horticulturist	
Enrichment						