Biology KS5 Curriculum Intent, Implementation and Impact Overview

	Year: 13 Subject: Biology IMPLEMENTATION					
INTENT (**OCR A Biology specification coverage** key concepts and skills ('Big ideas')	**Half Term 1** **Context:** Chapter 13 – Neuronal Communication Chapter 19 – Genetics of living systems Chapter 20 – patterns of inheritance **Key Vocabulary:** Neurones, transducer, resting potential, depolarisation, synapse, neurotransmitter, peripheral, somatic, autonomic, cerebrum, cerebellum, hypothalamus, myofibrils, sarcomere, myosin, sarcoplasm, mutations, epigenetics, transcription, translation, homeobox, chlorosis, homozygous, heterozygous, monogenic, dihybrid, phenotype, **Prior Learning / LTM:** GCSE Biology - microscopy, cell biology, transport of substances, organ systems Y12 Biology – Unit 2 foundations of biology **Cultural Capital:** Effects of drugs on synapses Ontology	**Half Term 2** **Context:** Chapter 14 – Hormonal Coordination Chapter 21 – manipulating genomes **Key Vocabulary:** Endocrine, steroid, adrenal cortex, pancreas, Islets of Langerhans, diabetes, glycogenolysis, gluconeogenesis, baroreceptors, PCR, genome, proteomics, spliceosomes, **Prior Learning / LTM:** GCSE Biology - microscopy, cell biology, transport of substances, cell division, diabetes, blood Y12 Biology – Unit 2 foundations of biology **Cultural Capital:** Histological techniques and diagnoses Synthetic life	**Half Term 3** **Context:** Chapter 15 - Homeostasis Chapter 16 – Plant Responses Chapter 22 – Cloning and biotechnology **Key Vocabulary:** Homeostasis, ectotherms, endotherms, thermoregulation, hepatocytes, deamination, nephron, medulla, ultrafiltration, reabsorption, osmoregulation, auxin, gibberellins, synergism, antagonism, pheromones, tropisms, horticulture, micropropagation, invertebrates, vertebrates, somatic, totipotent, **Prior Learning / LTM:** GCSE Biology - microscopy, cell biology, enzymes, transport of substances, cell division, plant hormones, homeostasis, water regulation **Cultural Capital:** Cirrhosis of liver	**Half Term 4** **Context:** Chapter 17 – Energy for biological processes Chapter 18 – Respiration Chapter 23 - Ecosystems Chapter 24 – populations and sustainability **Key Vocabulary:** Exothermic, endothermic, chemiosmosis, chlorophyll, oxidative phosphorylation, pigment, autotrophic, heterotrophic, dehydrogenation, glycolysis, pyruvate, coenzymes, oxidative phosphorylation, anaerobic respiration, fermentation, biotic, abiotic, trophic, biomass, decomposition, denitrification, ammonification, succession, population, migration, interspecific, intraspecific, conservation, preservation, sustainable, ecosystem, **Prior Learning / LTM:** GCSE Biology - microscopy, cell biology, enzymes, transport of substances, cell division, photosynthesis, respiration **Cultural Capital:**	**Half Term 5** **Context:** Revision and Retention	**Half Term 6** **Context:** Revision and Retention

				Small-scale and large-scale adaptations to low oxygen environments .		
All material in the Universe is made of very small particles	x	X	x	x		
Objects can affect other objects at a distance						
Changing the movement of an object requires a net force to be acting on it						
The total amount of energy in the Universe is always the same	x			x		
Organisms are organised on a cellular basis	x	x	x	x		
Organisms require a supply of energy and materials	x	x	x	x		
Genetic information is passed down from one generation of organisms to another	x	x	x	x		
The diversity of organisms, living and extinct, is the result of evolution	x	x	x	x		
Apply knowledge and understanding to explain observations.	x	x	x	x	x	x
Use different types of scientific enquiry to answer scientific questions.	x	x	x	x	x	x
Use technical terminology with confidence accurately and precisely.	x	x	x	x	x	x
Apply mathematical knowledge to scientific understanding.	x	x	x	x	x	x
Awareness of some of the social and economic implications of science	x	x	x	x	x	x
IMPACT	Assessment: Formal assessment 1 Practice exam questions **Progression to Post 18:** Foundations for degree study. Mathematical skills. How Science Works 1-8 (HSW code key at bottom of sheet)*	Assessment: Practice exam questions Y13 trials **Progression to Post 18:** Foundations for degree study. Mathematical skills. How Science Works 1-8 (HSW code key at bottom of sheet).	Assessment: Formal assessment 2 Practice exam questions **Progression to Post 18:** Foundations for degree study. Mathematical skills. How Science Works 1-8 (HSW code key at bottom of sheet).	Assessment: Formal assessment 3 Practice exam questions **Progression to Post 18:** Foundations for degree study. Mathematical skills. How Science Works 1-8 (HSW code key at bottom of sheet).	Assessment: External exams **Progression to Post 18:** Foundations for degree study. Mathematical skills. How Science Works 1-8 (HSW code key at bottom of sheet).	Assessment: External exams **Progression to Post 18:** Foundations for degree study. Mathematical skills. How Science Works 1-8 (HSW code key at bottom of sheet).

Cultural Capital is the body of knowledge a student needs so that they can flourish in the future and not be left behind. LTM = Long Term Memory.

*HSW Key for Progression to Post 18 skills:

HSW1	Use theories, models and ideas to develop scientific explanations
HSW2	Use knowledge and understanding to pose scientific questions, define scientific problems, present scientific arguments and scientific ideas
HSW3	Use appropriate methodology, including information and communication technology (ICT), to answer scientific questions and solve scientific problems
HSW4	Carry out experimental and investigative activities, including appropriate risk management, in a range of contexts
HSW5	Analyse and interpret data to provide evidence, recognising correlations and causal relationships
HSW6	Evaluate methodology, evidence and data, and resolve conflicting evidence
HSW7	Know that scientific knowledge and understanding develops over time
HSW8	Communicate information and ideas in appropriate ways using appropriate terminology
HSW9	Consider applications and implications of science and evaluate their associated benefits and risks
HSW10	Consider ethical issues in the treatment of humans, other organisms and the environment
HSW11	Evaluate the role of the scientific community in validating new knowledge and ensuring integrity
HSW12	Evaluate the ways in which society