

Science KS4 Curriculum Intent, Implementation and Impact Overview

Year: 10 Subject: Biology IMPLEMENTATION							
	Half Term 1 (7)	Half Term 2 (7)	Half Term 3 (7)	Half Term 4 (6)	Half Term 5 (5)	Half Term 6 (6)	
<p style="text-align: center;">INTENT</p> <p style="text-align: center;">(AQA GCSE Biology (9-1) GCSE specification coverage key concepts and skills (‘Big ideas’)</p>	<p>Context: B1 Cells</p> <p>Key Vocabulary: Prokaryote, eukaryote, magnitude, electron microscope, differentiation, specialised, mitochondria, ribosome, diffusion, osmosis, active transport</p> <p>Prior Learning / LTM: Y8 Organisms, Y8 Genes, Y7 Organisms, Y9 Bio 1</p> <p>Cultural Capital: Calculating orders of magnitude and estimating sizes of objects. Exchange surfaces and SA:V ratios</p>	<p>Context: B1 Cells, B2 Organisation</p> <p>Key Vocabulary: Mitosis, stem cell, aseptic, disinfectant, enzymes, digestion, non-communicable, pH, trachea, alveoli, platelet, plasma, artery, vein, capillary, atrium, ventricle</p> <p>Prior Learning / LTM: Y8 Organisms, Y8 Genes, Y7 Organisms, Y9 Bio 1</p> <p>Cultural Capital: Healthy diet – nutritional, sport science diet and health. Therapeutic stem cell therapy</p>	<p>Context: B2 Organisation B3 Infection and Response</p> <p>Key Vocabulary: Cancer, malignant, benign, xylem, phloem, transpiration, translocation, infectious, virus, bacteria</p> <p>Prior Learning / LTM: Y8 Organisms, Y7 Organisms, Y9 Bio 1</p> <p>Cultural Capital: Different forms of cancer and treatment. Diagnosing and treating infectious diseases.</p>	<p>Context: B3 Infection and Response B4 Bioenergetics</p> <p>Key Vocabulary: Fungi, protist, immune, vaccination, antibody, antigen, antibiotics, monoclonal antibody, deficiency, photosynthesis, endothermic</p> <p>Prior Learning / LTM: Y8 Ecosystems, Y9 Bio 1, Y9 Bio 2</p> <p>Cultural Capital: Diagnosing and treating infectious diseases. Vaccination – COVID-19. Antibiotics vs painkillers. Alexander Fleming.</p>	<p>Context: B4 Bioenergetics B5 Homeostasis</p> <p>Key Vocabulary: Photosynthesis, limiting factor, respiration, anaerobic, aerobic, metabolism, central nervous system, reflex, neuron, motor, sensory</p> <p>Prior Learning / LTM: Y8 Ecosystems, Y8 Genes, Y7 Genes, Y9 Bio 2</p> <p>Cultural Capital: Aerobic vs anaerobic respiration in sport. Metabolism – what is it and effects on the body. Reflexes and reaction times.</p>	<p>Context: B5 Homeostasis</p> <p>Key Vocabulary: <u>Combined:</u> Hormones, endocrine, diabetes, glucose <u>Separate:</u> Lens, cornea, ciliary muscles, cerebral cortex, cerebellum</p> <p>Prior Learning / LTM: Y8 Genes, Y7 Genes, Y9 Bio 2</p> <p>Cultural Capital: <u>Combined:</u> Reaction times and starting times in sport. Hormones and impact on the body. Diabetes. <u>Separate:</u> The brain and brain damage. The eye and correcting vision. Phineas Gage.</p>	
	All material in the Universe is made of very small particles	X	X				
	Objects can affect other objects at a distance						X
	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	
	The composition of the Earth and its atmosphere						
	Our solar system is a very small part of one of millions of galaxies in the Universe						
	Organisms are organised on a cellular basis	X	X	X	X	X	X

Organisms require a supply of energy and materials	x	x	x	x	x	x
Genetic information is passed down from one generation of organisms to another					x	x
The diversity of organisms, living and extinct, is the result of evolution						
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
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
IMPACT	<p>Assessment: Paper 1 assessment.</p> <p>Magnification and Transport MP.</p> <p>Maths skills 1</p> <p>Progression to KS5: 2.2 Basic components of living things. 2.5 Plasma membranes.</p> <p>Scientific enquiry.</p>	<p>Assessment: B1 multiple choice quiz.</p> <p>Breathing and circulatory system MP.</p> <p>Maths skills 2</p> <p>Progression to KS5: 2.6 Cell division 2.4 Enzymes 3.7 Exchange surfaces and breathing 3.8Transport in animals</p> <p>Scientific enquiry.</p>	<p>Assessment: Paper 1 assessment.</p> <p>B2 multiple choice quiz.</p> <p>Maths skills 3</p> <p>Progression to KS5: 3.9 Transport in plants 4.12 Communicable diseases</p> <p>Scientific enquiry.</p>	<p>Assessment: B3 multiple choice quiz.</p> <p>Drug trials MP.</p> <p>Maths skills 4</p> <p>Progression to KS5: 4.12 Communicable diseases 5.17 Energy for biological processes</p> <p>Scientific enquiry.</p>	<p>Assessment: B4 multiple choice quiz.</p> <p>Photosynthesis required practical MP.</p> <p>Maths skills 5</p> <p>Progression to KS5: 5.17 Energy for biological processes 5.18 Respiration 5.13 Neuronal communication</p> <p>Scientific enquiry.</p>	<p>Assessment: Trial exam - Paper 1</p> <p>B5 multiple choice quiz.</p> <p>Progression to KS5: 5.13 Neuronal communication 5.14 Hormonal communication 5.15 Homeostasis</p> <p>Scientific enquiry.</p>

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.