## Biology Overview

Year 10							
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6	
Topic	· Key concepts in Biology	· Cells and Control	· Genetics	· Natural Selection and Genetic Modification	· Health, Disease and the Development of Medicine	· Health, Disease and the Development of Medicine	
Key Concept	Cells and Cellular Processes	Cells and Cellular Processes	Organisms and their interactions with the environment	Organisms and their interactions with the environment	Biological systems for life	Biological systems for life	
Learning Objectives	· Describe the developments in microscopy. · Identify and state the role of subcellular structures in plant, animal and bacteria cells. · Explain digestion using enzyme action. · Conduct food tests and calorimetry. · Show that substances are carried by diffusion, osmosis and active transport.	· Describe the stages of mitosis. · State the importance of mitosis in growth, repair and asexual reproduction. · Explain the process of cell specialisation. · Explain how the nervous system works including the specialised cells involved. · Evaluate the workings of the human eye.	· State the importance of meiosis. · Compare and contrast sexual and asexual reproduction. · Describe the structure of DNA. · Show the process of protein synthesis. · Discuss the causes of genetic variation. · Describe how the inheritance of some characteristics occurs in families.	· Describe the theory of evolution. · Show how different organisms are classified. · Evaluate selective breeding and genetic engineering. · State why tissue culture, GMOs, fertilisers and biological control are used in agriculture.	Define the term health.     Describe diseases caused by named pathogens and strategies to reduce or prevent their spread.     Describe the lifecycle of viruses.     Discuss plant and human defence mechanisms.	· Describe aseptic technique. · Show the stages in the development of new medicines.	
Scaffolding SEND	glossaries, targeted questions, knowledge	glossaries, targeted questions, knowledge	glossaries, targeted questions, knowledge	glossaries, targeted questions, knowledge	glossaries, targeted questions, knowledge	glossaries, targeted questions, knowledge	

	organisers, recall	organisers, recall	organisers, recall	organisers, recall	organisers, recall	organisers, recall
	quizzes	quizzes	quizzes	quizzes	quizzes	quizzes
Key Vocabulary	magnification, resolution, eukaryotic, prokaryotic, gametes, precipitate, denatured, active site	mitosis, asexual reproduction, haploid, diploid, differentiation, meristems, elongation, cerebellum, medulla oblongata, cerebral cortex, neurotransmission, reflex arc	clones, meiosis, zygote, daughter cells, adenine, thymine, cytosine, guanine, transcription, translocation, alleles, homozygous, heterozygous, punnet square	evolution, Ardi, binomial system, resistance, pentadactyl limb, classification	communicable disease, non- communicable diseases, pathogens, immune system, malnutrition, cirrhosis, stent, cardiovascular, lytic pathway, lysogenic pathway, immunisation	communicable disease, non- communicable diseases, pathogens, immune system, malnutrition, cirrhosis, stent, cardiovascular, lytic pathway, lysogenic pathway, immunisation
Formative Assessment	6 mark question with teacher	6 mark question with teacher	6 mark question with teacher	6 mark question with teacher	6 mark question with teacher	6 mark question with teacher
Summative Assessment	feedback End of unit test	feedback End of unit test	feedback End of unit test	feedback End of unit test	feedback End of unit test	feedback End of unit test
Careers	Equine dentist, forensic scientist, hydro therapist. marine biologist, neuroscientist, optician, paramedic.	Forensic scientist, lab technician, marine biologist, neuroscientist, optician paramedic	Botanist, conservationist, marine biologist	Immunologist, marine biologist, neuroscientist, zoologist	Journalist, lab technician, marine biologist, urologist, zoologist	Journalist, lab technician, marine biologist, urologist, zoologist
Links	To build on the use of a microscope. In addition, describe the cell structure and adaptations.  To prepare for	To build on how cells divide and the structure of plant and animal cells.  To prepare for describing how the	To build on the difference between environmental and inherited variation.  To prepare for stating that a zygote	To build on how DNA contains instructions for characteristics of organisms.  To prepare for	To build on the causes of obesity and deficiency diseases.  To prepare to state that recreational	To build on the causes of obesity and deficiency diseases.  To prepare to state that recreational
	describing the use	nervous system helps to coordinate	is formed by two gametes fusing. In	stating how Darwin devised a theory to	drugs can affect	drugs can affect

	of enzymes in	actions in the	addition, the	explain how	behaviour, health	behaviour, health
	digestion.	human body.	location of DNA in	organisms change	and life processes.	and life processes.
			a eukaryote.	over time.		