

NINE	Cells and Transport Building on cells from Yr7 – structure and function Microscope skills	Heart and blood Introduction to circulatory system. Blood vessels, components of blood	Digestive system and enzymes Picking up on digestive system from Yr7 – specific enzymes	Respiration Picking up on respiration from Yr8 – introduction of anaerobic respiration	Adaptations, interdependence and competition Practical skills - quadrats Building on relationships between organisms met in Yr7			
TEN	Plants and photosynthesis Introduction to the biochemistry of photosynthesis Practical skills for measuring photosynthesis	Evolution and speciation Links back to variation from Yr7 Historical figures in evolution	Health and non-communicable disease Links to health and lifestyle choices	Communicable disease Examples of communicable disease Use of antibiotics and analgesics	Plant disease Communicable disease in plants- project based learning Includes work on monoclonal antibodies	DNA inheritance and Mendel Links to cells and evolution Real life examples Sex determination	Organisation of an ecosystem Links to topics in Yr9 and 7 Relationships between living organisms	Using living organisms Living organisms used by humans for favourable outcomes- food production, farming techniques
ELEVEN	Cell division and specialisation Building on knowledge from Yr7/9 Applying more detail and linking structures of the cell to biological processes Relating cell division to asexual and sexual reproduction		Metabolism, nerves and homeostasis Introduction to the nervous system Basics structure of the nerves. Experiments to investigate reaction times Eye and brain		Hormones and reproduction Real life implications and examples- including control of reproduction and menstrual cycle.		Revision	
TWELVE	Cell structure Detailed structure and function of prokaryotic and eukaryotic cells Use of microscopes	Cell division and inheritance Building on information met at Yr7 Mitosis and Meiosis studied in detail	Communicable disease Studying real life examples of disease (cause, spread, treatment) Use of antibiotics and antibiotic resistance	Classification and evolution History of classification and examination of different methods Theory of evolution linking to the genetics of mutation.	Biodiversity The importance of biodiversity Methods of measuring biodiversity Introduction of statistics to calculate	Ecosystems Introduction to ecosystems and the concept of symbiotic relationships between organisms Nitrogen cycle Carbon cycle	Populations and sustainability Both human and animal populations Carrying capacity Case studies of different environments	

				Natural selection- links to antibiotic resistance	and compare biodiversity	Succession Sampling	
	Biological molecules The biochemistry of important biological molecules Chemical testing for biological molecules	Enzymes Structure and function of enzymes	Exchange surfaces SA:V Ratio Lungs including histology Gas exchange in insects and fish- opportunity for dissection	Animal transport The need for transport. Components of the blood Structure and function of blood vessels Tissue fluid The heart	Plant transport Xylem and Phloem Transpiration and translocation Experiments to investigate transpiration rates Stem dissection	Ecosystems Introduction to ecosystems and the concept of symbiotic relationships Nitrogen cycle Carbon cycle Succession Sampling	Revision
THIRTEEN	Respiration Building the biochemistry of respiration Aerobic and anaerobic respiration Respiration in different organisms	Communication and homeostasis/excretion as an example of homeostasis Homeostasis and body temperature Principles of homeostasis Liver and kidney structure and function	Hormonal communication Control of blood sugar levels Histology of the pancreas	Neuronal communication Structure and function of motor, sensory and relay neurones Action and resting potential Voltage graphs	Animal responses The organisation of the mammalian nervous system The brain Coordination of response- heart rate Muscles- sliding filament theory.		
	Photosynthesis Building the biochemistry of photosynthesis Experiments investigating the rate of photosynthesis and wavelengths of light Thin layer chromatography	Genetics Application of genetic theories Patterns of inheritance Including dihybrid inheritance, codominance, epistasis Statistical tests to evaluate genetics	Cellular control Homeobox and apoptosis Mutations Lac Operon as an example of cellular control Transcription factors, splicing and cyclic AMP	Gene Tech Real world application and techniques PCR Genetic engineering Gel Electrophoresis Sequencing DNA, uses of sequencing DNA profiling Gene therapy	Biotechnology and Cloning Cloning techniques in plants and animals Using and growing microorganisms Aseptic technique Immobilised enzymes		