

	Term	1	2	3	4	5	6
3 rd Form study P1 for terms 1-3, then P2 for terms 4-6. 4 th & 5 th from study P2 then P1.	Title	(P1)Cell Biology (P1)Cell Organisation	(P1)Bioenergetics and disease (P1)Infections and response	(P2)Biological responses	(P2)Ecology	(P2)Inheritance, Variation and Evolution	
	Prior Knowledge	Understand the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms, and thus describe and explain the functions of the organs in the skeleton-muscular, digestive, reproductive and gaseous organ system.	Recall factors that can affect the organ systems and describe the effects of those factors. Understand some of the responses in the immune system.	Know the organs in the organ systems.	Explain the interdependence of organisms in an ecosystem.	Describe the process by which genetic information is transmitted from one generation to the next, and how variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection.	
	Core Knowledge	Describe cells as the basic structural unit of all organisms; adaptations of cells related to their functions; the main sub-cellular structures of eukaryotic and prokaryotic cells. Explain the importance of cellular respiration; the processes of aerobic and anaerobic respiration. Describe enzymes and factors affecting the rate of their reactions. Describe the need for transport systems in multicellular organisms, including plants.	Explain the relationship between health and disease. Describe the meaning of communicable and non-communicable diseases including examples, the pathogens that cause them and how to reduce or prevent the spread of infectious diseases in animals and plants. Explain body defences against pathogens and the role of the immune system against disease. Describe the process of discovery and development of new medicines	Explain homeostasis. Describe the principles of nervous coordination and control in humans Explain the relationship between the structure and function of the human nervous system. Describe the principles of hormonal coordination and control in humans, hormones in human reproduction, hormonal and non-hormonal methods of contraception.	Describe the process of photosynthesis and the factors affecting it. Explain the levels of organisation within an ecosystem, some abiotic and biotic factors which affect communities; the importance of interactions between organisms in a community. Describe methods of identifying species and measuring distribution, frequency and abundance of species within a habitat.	Understand how the genome, and its interaction with the environment, influence the development of the phenotype of an organism, and how most phenotypic features being the result of multiple, rather than single, genes Describe and explain the genetic variation in populations of a species, the process of natural selection leading to evolution and the evidence for evolution. Consider the uses of modern biotechnology including gene technology; some of the practical and ethical	

						considerations of modern biotechnology.
	By the end of KS4 students are able to:	<ul style="list-style-type: none"> • Be able to explain everyday and technological applications of science; evaluating associated personal, social, economic and environmental implications; and making decisions based on the evaluation of evidence and arguments. • Describe cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling life processes to be performed more effectively, and explain that life processes depend on molecules whose structure is related to their function • Describe communicable and non-communicable diseases, the pathogens that cause them and how to reduce or prevent the spread of infectious diseases in animals and plants. Explain the body defences against pathogens and the role of the immune system against disease. • Explain how living organisms may form populations of single species, communities of many species and ecosystems, interacting with each other, with the environment and with humans in many different ways. The living organisms are interdependent and show adaptations to their environment. • Describe and explain the genetic variation in populations of a species, the process of natural selection leading to evolution and the evidence for evolution. 				