Year Group: 12	Subject: Biology	Term: Spring 2022

Topic	Key Learning points	Assessment
Nucleic acids	*End Point: To understand the nature of DNA, how it is replicated and how it is used to produce proteins* • Understand the structure of DNA including the structure of the nucleotides within it • Explain the process of DNA replication • Describe the process of Transcription and Translation in the production of proteins • Understand and describe the nature of DNA code	Students will be formatively assessed during each topic by past paper questions completed in lesson time. • Students will complete homework assignments as ongoing assessment of understanding. • Teachers will provide students with targeted feedback, based on their test performance. At the end of the term students will have a summative assessment. This will be a 60-mark exam paper which will be marked by their teacher.
Cell Structure	*End Point: To understand the intracellular structure of eukaryotic and prokaryotic cells and how they can be viewed using a microscope* • Explain the structure and roles of subcellular structures within eukaryotic cells • Explain how to prepare and view different cell types under a microscope • Compare different types of microscopes • Explain the structure and roles of subcellular structures within prokaryotic cells	
Cell Division	*End Point: To understand the cell cycles including the processes or mitosis and meiosis. To understand the roles of specialised and unspecialised cells in the body and medicine* • Describe the how living organisms are organised in terms of cells • Describe the cell cycle including the process of mitosis • Describe the process and role of meiosis in reproduction • Understand the role of different specialised cells in organisms • Understand the role of stem cells in organisms and in medical research	
Exchange Surfaces and Breathing	*End Point: To understand ventilation and gas exchange systems in mammals, bony fish and insects as examples of the properties and functions of exchange surfaces in animals.* • Calculate and compare SA:Vol for different organisms. • Understand the need for specialised exchange surfaces in multicellular organisms. • Describe the general features of specialised exchange surfaces. • Describe the mechanism of ventilation in mammals. • Describe structures and functions of gas exchange system in mammals, fish and invertebrates.	
Transport in Plants	*End Point: To understand that as plants become larger and more complex, transport systems become essential to supply nutrients to, and remove waste from, individual cells and that the supply of nutrients from the soil relies upon the flow of water through a vascular system, as does the movement of the products of photosynthesis.* • Describe the structure and function of vascular systems in plants. • Describe the process of transpiration and understand the link with gaseous exchange. • Explain how environmental factors can affect transpiration rate. • Describe the mechanism of translocation. • Describe how plants have adapted to a range of habitats. • Explain how differing morphology or physiology allows plants to survive in extreme environments.	