Year Group: 13	Subject: Biology	Term: Spring 2022

Topic	Key Learning points	Assessment
Manipulating genomes	*End Point: To understand the biochemical reactions of photosynthesis and respiration and appreciate the importance of these reactions for living organisms.* • Understand the processes and applications of DNA sequencing and profiling • Understand the process and applications of Genetic engineering • Understand how the processes mentioned can be used in gene therapy	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.
Regulation of animal and plant responses	*End Point: To understand how animal responses are coordinated using hormones and the nervous system and understand responses within plants are regulated and how these processes can be investigated* • Describe the structure of the nervous system including the neurones within it • Explain how signals are passed along neurones and across synapses • Understand how hormones and the nervous system work together to coordinate the heart • Understand how the nervous system works to coordinate muscle movement • Describe the types of responses that happen within plants • Explain how plant hormones work to regulate plant responses • Understand how the action of plant hormones can be investigated	
Energy for Biological processes	*End Point: To understand the biochemical reactions of photosynthesis and respiration and appreciate the importance of these reactions for living organisms.* • Describe how ATP is formed through phosphorylation. • Know the structure of a mitochondrion and where the stages of respiration take place in the cell. • Understand that a molecule of glucose is manipulated through a series of reactions in respiration to produce ATP. • Be able to describe glycolysis, link reaction, Krebs cycle and the electron transport chain in terms of what is produced i.e. CO2, NADH, ATP and H2O. • Know the structure for a chloroplast and where the different reactions of photosynthesis occur in the chloroplast. • Be able to describe the light-dependent reaction and light-independent reaction in photosynthesis. • Know the limiting factors in photosynthesis and how they limit the rate of photosynthesis. • Be able to identify adaptations of extremophile plants and explain how those adaptations help them to survive in extreme environments.	