YEAR 11 OVERVIEW 2020/21 - BIOLOGY

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 11	**Inheritance**	**Inheritance**	**Ecology**	**Ecology**	**Exam Preparation**	
	Reproduction can be sexual or asexual. Sexual reproduction involves gametes which are produced by meiosis. Variation is introduced in this process. Gametes contain DNA in their nucleus – this is a molecule containing the code to produced and order amino acids into protein. Proteins give people characteristics inherited from their parents. Offspring inherit their biological sex from their parents as well as, in some circumstances, medical conditions such as cystic fibrosis form their parents.	Variation can be caused by genes and the environment. Sometimes variation can be caused by mutations in DNA. Mutations that cause variation over a long period of time can contribute to the process of 'Natural Selection' which can lead to the evolution of a species. Fossils and resistant bacteria provide evidence for evolution. Humans can also select genes to breed in a species and can use genetic engineering to insert specific genes into DNA to alter the characteristics of an organism. Variation in organisms (in both phenotype and in their DNA) allows biologists to classify them into groups and to trace common ancestors for species. ***SEPARATE SCIENCE:*** Cloning is a technique performed through tissue culture, cuttings, embryo transfers and adult cell cloning.	Abiotic and biotic factors affect communities living within ecosystems. Some organisms show adaptations that help them to compete and survive in their communities. Within an ecosystem, materials can cycle through the abiotic and biotic components, for example carbon and water. Biodiversity ensures the stability of an ecosystem and can be influenced by several factors including: waste management, land use, and deforestation. ***SEPARATE SCIENCE:*** Temperature, water and oxygen availability can affect the rate of decay of biological material. Organisms within an ecosystem occupy different trophic levels. Biomass is transferred through the trophic levels of an ecosystem; this can be represented through a pyramid of biomass.	High levels of carbon dioxide and methane can contribute towards Global Warming. Global warming has many biological consequences; these can be countered by measures that aim to maintain biodiversity. These include: • Breeding programmes • Regeneration of habitats. • Reducing deforestation.	Extensive and explicit recall of knowledge to facilitate effective rehearsal of exam technique. Links between different sections of knowledge are embedded further.	