Curriculum Map Year II Separate Science - Biology

Topic Name	Term	Skills developed with link to NC Subject content	Reflection on previous link in the curriculum	Progress to future link in the curriculum
Inheritance and genetics	Autumn HT1	Understanding of: DNA structure and the role of genes and chromosomes The human genome project Protein synthesis using mRNA Mutations and their effect on protein structure Asexual and sexual reproduction Meiosis Gregor Mendel and genetic terminology Inheritance and genetic diseases	Year 6: Evolution and inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind but normally offspring vary and are not identical to their parents	Year 12: Biological molecules
Inheritance and genetics Variation and evolution Mock exam preparation (if mocks at this time)	Autumn HT2	Understanding of: Family trees and ethics Inheritance of gender Adaptation and variation Darwin vs. Wallace Fossil evidence of evolution Evolutionary trees Speciation Selective breeding Brief recap and review of content, particularly paper 1 content.	Year 6: Evolution and inheritance Recognise that living things have changed over time and that fossils provide information about things that lived millions of years ago. Recognise that living things produce offspring of the same kind but normally offspring vary and are not identical to their parents Year 4: Classification Recognise that living things can be grouped in various ways; explore/use classification keys to help group, identify, name various living things in the local/wider environment;	Year 13: Inheritance

			 recognise that environments can change and that this can sometimes pose dangers to living things Year 6: Classification Describe how living things are classified into broad groups according to common observable characteristics & based on similarities/differences, incl. microorganisms, plants & animals; Give reasons for classifying plants/animals based on specifics 	
Variation and evolution Ecology in action	Spring HT3	Understanding of: Genetic engineering GM crops Cloning Extinction Ecosystems, biotic and abiotic factors Food chains, webs and feeding relationships Biomass and pyramids The carbon cycle Decay Land use	Year 2: Food chains and feeding relationships • Describe how animals obtain their food from plants/other animals using the idea of a simple food chain. • Identify/name different sources of food	 Ecosystems and their organisation. Abiotic and biotic factors affect population size in an ecosystem. Predator - prey relationships, interand intra-specific competition. Investigating populations, sampling methods. Year 13: Gene technology Sequencing projects such as the human genome project and its role in understanding genetics. Understanding the proteome. Techniques to make DNA fragments, such as reverse transcriptase, restriction endonucleases and gene machines. Amplifying DNA fragments using PCR. Recombinant DNA technology, gene therapy, gene probes and their uses. Genetic fingerprinting.
Ecology in action	Spring HT4	 Understanding of: Deforestation and peat bogs Pollution and global warming Waste management Monitoring pollution Maintaining biodiversity Maintaining food security Using biotechnology 		 Year 13: Ecology and ecosystems. Ecosystems and their organisation. Abiotic and biotic factors affect population size in an ecosystem. Predator - prey relationships, interand intra-specific competition. Investigating populations, sampling methods.
Reflection and preparation for examinations	Summer HT5	Recap and reflection on content learnt during year 10 & 11 Exam question focus Application question focus Mathematical skills focus Scientific skills focus	Y10 and Y11 content	

Examination Period	Summer	
	HT6	