Year 12 **Miss Robottom**	Autumn – 1a	Autumn – 1b	Spring – 2c	Spring – 2d	Summer – 3e	Summer – 3f
Content	Biology OCR - Exchange Surfaces (3.1) and Transport in Animals (3.2)	Biology OCR - Transport in plants (3.3)	Biology OCR - Communicable Disease (4.1)	Biology OCR - Biodiversity (4.2)	Biology OCR - Classification and Evolution (4.3)	Biology OCR - Revision and start of Y2 delivery after exam
Skills including links with KS2 (Golden thread)	Practical skills Dissections, Microscopy, Scientific drawing, use of data loggers Exam questions Calculations – surface area to volume ratio Rates of reaction	Practical skills Dissections, Microscopy, Scientific drawing, use of data loggers Exam questions Calculations – surface area to volume ratio Rates of reaction	Practical skills Microscopy, growing microbes Exam questions	Practical Skills Sampling, quadrats, transect lines Exam questions Calculations – Simpsons index	Exam questions Maths skills Stats to include; t-test, standard deviation, correlation coefficient	
Why we have chosen this curriculum…	Core skills and principles taught early to ensure greater chance to revisit and check retention. Animals are more relatable for students linking back to KS2 and KS3 so this is a good place to start	Builds on previous unit and ensures repeat of practical skills as well as meeting key required practicals. Carry out experimental and investigative activities, including appropriate risk management, in a range of contexts	The opportunity to analyse and interpret data to provide evidence, recognising correlations and causative relationships which builds on KS4.	Conditions are favourable for practicals involving biodiversity. We can use the new environments and Kingsmead such as the copse as well as the wild meadow. A chance to practice to analyse and interpret data to provide evidence.	A chance to evaluate the ways in which society uses science to inform decision making. Have the opportunities to use and analyse theories, models and ideas to develop scientific explanations	A chance to challenge students to check recall and retrieval. Opportunities for students to identify gaps in their knowledge and plan routes to rectify these.
Assessment	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units 50 mark test (+10 multiple choice) for units	End of year Exam – past paper
Links	Collins Biology OCR Textbook pages 168 - 204	Collins Biology OCR Textbook pages 206-224	Collins Biology OCR Textbook pages 226-250	Collins Biology OCR Textbook pages 251-274	Collins Biology OCR Textbook pages 276-300	

Year 12 **Miss Reid**	Autumn – 1a	Autumn – 1b	Spring – 2c	Spring – 2d	Summer – 3e	Summer – 3f
Content	Biology OCR - Cell Structure (2.1)	Biology OCR - Biological Molecules (2.2)	Biology OCR - Nucleic Acids and Enzymes (2.3, 2.4)	Biology OCR - Biological Membranes (2.5)	Biology OCR - Cell division, diversity and differentiation (2.6)	Revision and start of Y2 delivery after exam
Skills including links with KS2 (Golden thread)	Practical skills Microscopy, scientific drawing Exam questions Calculations- surface area to volume ratio	Practical skills Qualitative and quantitative analysis of unknowns TLC Exam questions Maths skills – calibration curves	Practical skills Factors affecting rates of enzyme controlled reactions Exam questions Maths skills – rates of reaction	Practical Skills Factors affecting permeability of membranes Exam questions Maths skills - rates	Exam questions Microscopy, scientific drawing Exam questions Maths skills – microscopy, scales	
Why we have chosen this curriculum…	A good place to start as this introduces core structures which relate to molecules and cells as they get larger. This is a good starting point for students and builds on KS4 / KS3 and KS2 work. There is a familiarity for students which gets them settled and identifies the level of detail and the mathematics so students ensure they are clear of the demands of Biology A level.	Great opportunity to complete practicals amongst the theory of the work taught. Students evaluate methodology, evidence and data, and resolve conflicting evidence. Students are able to understand proteins and the biochemical way these are constructing which allows for the Spring 2C unit on enzymes to be given some context	Built on KS3/4 work. Opportunities to consider ethical issues around the use of technologies to solve diseases. A closer look into theories, models and ideas to develop scientific explanations. Carry out experimental and investigative activities, including appropriate risk management, in a range of contexts	Builds on ethical issues and medical conditions discussed in Spring 2c and links with enzymes and proteins from Autumn 1b. The flow of the units ensures good chance for recall and retrieval to be checked as students' progress their learning. Biological membranes is followed with biological processes. An understanding of the structure is needed before looking at active transport in any greater detail.	A chance for students to delve deeper into KS4 basic cell division, diversity and differentiation. This comes at this stage of the curriculum following the rest of the year's build up to this. A clear understanding of cells, biological molecules, DNA and membranes allow for students to analyse unit 2.6.	A chance to challenge students to check recall and retrieval. Opportunities for students to identify gaps in their knowledge and plan routes to rectify these.

				Connections with Year 11 ensures a level of continuity.		
Assessment	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units 50 mark test (+10 multiple choice) for units	End of year Exam – past paper
Links	Collins Biology OCR AS Textbook pages 22-44	Collins Biology OCR AS Textbook pages 48-82	Collins Biology OCR AS Textbook pages 84-124	Collins Biology OCR AS Textbook pages 126-142	Collins Biology OCR AS Textbook pages 144-166	

Year 13 **Miss Reid**	Autumn – 1a	Autumn – 1b	Spring – 2c	Spring – 2d	Summer – 3e	Summer – 3f
Content	Biology OCR - Communication and homeostasis, Excretion (5.1-5.2)	Biology OCR - Neurones and Hormones	Biology OCR - Cellular Control + Patterns of inheritance (6.1-6.2)	Biology OCR - Patterns of inheritance (6.2)	Biology OCR - Manipulating Genomes	Biology OCR - Revision for final examinations
Skills including links with KS2 (Golden thread)	Practical skills Dissections, Microscopy, Scientific drawing, use of data loggers Exam questions	Practical skills Dissections, Microscopy, Scientific drawing, use of data loggers Exam questions	Practical skills Breeding *Drosophilia melanogaster* Exam questions Maths skills	Practical Skills Breeding *Drosophilia melanogaster* Exam questions Maths skills	Practical skills Transformation of *E.coli* Exam questions	

			Hardy-Weinberg, fractions, ratios, percentages, chi squared	Hardy-Weinberg, fractions, ratios, percentages, chi squared		
Why we have chosen this curriculum…	The students study communication and homeostasis, excretion. These leads into neurones and hormones for the next half term. This is a good introduction into these topic areas.	The nervous system enables humans to react to their surroundings and to coordinate their behaviour. It comprises millions of neurones and uses electrical impulses to communicate very quickly. This follows communication and helps explain 5.1-5.2. This is the finer detail that helps to link t	The Year 12 work on cells and DNA interconnect to help lead into this unit. The previous units in this year on communication, neurones and hormones helps to feed off this unit.	The unit on inheritance follows the concepts of cellular control and before genetic technology and manipulating genomes. This unit comes first to set solid foundation for discussions key ethical considerations in the next unit.0	This unit draws together the whole year and examines how the core communicative systems within the body can go wrong and what we can do. We analyse whether we should and take time to consider what is next for biology and society as we continue to learn more. At what point should we consider the potential ramifications of our influence on the environment /o n life? If we have the technology, the knowledge and the skills shouldn't we advance ourselves? Is this not what we previously did?	
Assessment	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units 50 mark test (+10 multiple choice) for units	End of year Exam – past paper
Links	Collins Biology OCR A2 Textbook pages 8-42	Collins Biology OCR A2 Textbook pages 44-76	Collins Biology OCR A2 Textbook pages 160-212	Collins Biology OCR A2 Textbook pages 176-212	Collins Biology OCR A2 Textbook pages 214-238	

Year 13 **Mr Reynolds**	Autumn – 1a	Autumn – 1b	Spring – 2c	Spring – 2d	Summer – 3e	Summer – 3f
Content	Biology OCR – Plant and animal responses (5.5)	Biology OCR – Photosynthesis and respiration (5.6-5.7)	Biology OCR – Cloning and Biotechnology (6.4)	Biology OCR – Ecosystems (6.5)	Biology OCR – Populations and sustainability (6.6)	Biology OCR - Revision
Skills including links with KS2 (Golden thread)	Practical skills Microscopy, Scientific drawing Plant responses Exam questions	Practical skills Factors affecting photosynthesis, research (PAG 12) Exam questions	Practical skills Cloning plants, culture plating, serial dilutions Exam questions Maths Skills – logs	Practical Skills Sampling, quadrats, transect lines Exam questions Calculations – Simpsons index	Practical Skills Sampling, quadrats, transect lines Exam questions Calculations – Simpsons index	
Why we have chosen this curriculum…	Complements the other teacher led unit 1. Sets the foundation for the next unit on photosynthesis and respiration. Gives an opportunity to explore how we have discovered the processes using practicals.	Links well with KS4 and even KS3 understanding. Links to 5.5 and follows on nicely. Photosynthesis and respiration complement each other well. Photosynthesis is broken into the independent and dependent cycles. This is often taught one after the other to ensure that the range of key words are not mixed up. Respiration follows a pattern from the initial production of glycolysis and how this is efficiently broken down at each stage.	Summarises key points about plant cloning, natural and artificial methods, the advantages and disadvantages of the process and growing genetically identical crops, and the process of tissue culture. Animal cloning is explored through natural methods, techniques and purposes of artificial animal cloning. We explore the advantages and disadvantages	Explores ecosystems of different types, the biomass transfers through ecosystems and recycling within ecosystems. The process of primary succession in the development of an ecosystem and how the distribution and abundance of organisms are measured and sampled. This allows the core knowledge and skills needed for the next unit 6.6 to be introduced.	Ties together all previous units to explore the factors that determine size of a population, interactions and management of ecosystems. The reasons for, and differences between, conservation preservation are investigated. The study of populations and sustainability gives another opportunity to cover and incorporate practical and mathematical skills for examples PAG3 (sampling techniques) and PAG10 (investigation using computer skills)	
Assessment	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units	50 mark test (+10 multiple choice) for units 50 mark test (+10 multiple choice) for units	End of year Exam – past paper
Links	Collins Biology OCR A2 Textbook pages 78-112	Collins Biology OCR A2 Textbook pages 112-158	Collins Biology OCR A2 Textbook pages 240-266	Collins Biology OCR A2 Textbook pages 268-282	Collins Biology OCR A2 Textbook pages 288-306	
