Fairfield High School for Girls

GCSE Biology - Year 11

Long-Term Plan 2024-2025

Calendar	Topic	Assessment	Sequencing and Coherence *concepts - themes - skills*	Literacy *reading - vocabulary - oracy - writing*
Autumn **Half Term 1**	B12 (Continued) Reproduction: Genetics and Inheritance, Genetic Crosses, Expressing outcomes of genetic crosses as proportions and ratios, Punnett Squares, Sex Inheritance, Family Trees, Genetic Disorders – Polydactyly and Cystic Fibrosis, Screening for Genetic Disorders B13 Variation and Evolution: Variation, Evolution by Natural Selection, Selective Breeding, Genetic Engineering, Ethics of Genetic Technologies	B12 Online mid-unit test set on Educake (L1-L4) – instantly marked and direct question feedback through Educake. B12, working scientifically and synoptic content from B1-B12. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised. B13 Online test set on Educake – instantly marked and direct question feedback through Educake. B13, working scientifically and synoptic content from B1-B13. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	Explain why this topic is being taught at this point. This could focus on the specific content knowledge being taught, subject themes within the topic or subject skills that weave through the curriculum. Students build on genetics knowledge taught at KS3 and KS4 on DNA, genes and chromosomes and their role in cells. This builds on knowledge taught in year 9 during the B2 – Cell Division Topic. Students need an understanding of mitosis when learning about asexual reproduction. They also know the function of ribosomes from the B1 topic taught at the start of year 9, and how amino acids join to form proteins covered when teaching enzymes during B3. Knowledge of mutations as genetic changes that cause cancer covered in B7 are useful when considering genetic mutations. Students build on their prior knowledge on variation at KS3 and in particular environmental variation when covering B7 – Non-communicable diseases. Student cover natural selection in year 8 and need to know recent content from B13 on meiosis and sexual reproduction and the evolution of antibiotic resistance to progress to B14. When learning about genetic engineering students learn the example of producing insulin. Students have prior knowledge on the role of insulin to treat diabetes in B11- Hormonal Coordination (Y10) and they know of inherited disorders from B13 above.	Include details of challenging texts and reading strategies, keyword glossary sheets, oracy opportunities and key disciplinary writing tasks. Debating pros and cons of embryo screening Explaining punnett square cross Extended writing Explaining evolution using VARG Extended writing

Autumn **Half Term 2**	B14 Genetics and Evolution: Evidence for Evolution, Fossils and Extinction, Antibiotic Resistant Bacteria, Classification, New Systems of Classification	B12,13 & 14 End of topic test GCSE style questions FT and HT. B14, working scientifically and synoptic content from B1-B14. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	This unit relies on prior knowledge of genetics and how to predict the results of genetic crosses from B13 above. It also needs to be taught after B14 where natural selection is introduced to discuss theories of evolution and accepting Darwin's ideas. Students need knowledge from B1 (Year 9) on prokaryotic cells when learning new systems of classification. Evolution and fossils are also introduced at KS3 in year 8.	Discuss classification of random objects Discuss merits of Woese vs Linneaus Extended writing
Spring **Half Term 3**	B15 Adaptation, Interdependence and Competition: The Importance of Communities, Organisms in their Environment, Distribution and Abundance, Sampling Required Practical Competition in Animals and Plants, Adaptations in Animals and Plants	B15 Online test set on Educake – instantly marked and direct question feedback through Educake. B15, working scientifically and synoptic content from B1-B15 Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	Students start to learn about ecology at KS3 in year 8 during the Ecosystems unit. KS3 students have the opportunity to use quadrats and undertake different sampling techniques. Within this unit students learn more about bacteria, protists and fungi initially introduced during B5 communicable disease. When considering adaptations of animal's students link knowledge on surface are to volume ratios taught in B1. When considering adaptations of plants students link knowledge on plant transport and transpiration taught in B4.	Talk tactics using animal adaptation cards top trumps Extended writing

Spring **Half Term 4**	B16 Organising an Ecosystem: Feeding Relationships, Materials Cycling, The Carbon Cycle	B16 Online test set on Educake – instantly marked and direct question feedback through Educake. B16, working scientifically and synoptic content from B1-B16.Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised.	Students start to learn about food chains and the carbon cycle at KS3 in year 8 during the Ecosystems unit. When teaching the carbon cycle students rely on their prior knowledge on respiration (B9) and photosynthesis (B8). When discussing the water cycle student reply on prior knowledge of transpiration (B4). Cycling materials is also covered with the Chemistry GCSE and in chemistry lessons in Year 8.	Discuss 6 mark answers for carbon cycle
Summer **Half Term 5**	B17 Biodiversity and Ecosystems: The Human Population Explosion,		Students begin to learning about the human impact on climate change at KS3 in both Chemistry and Biology lessons. This topic strongly links to B17 and contains many synoptic links to topics covered in the curriculum and students have knowledge gained from outside of the classroom.	Think, pair, share of why human population has increased and its effects. Extended writing
Summer **Half Term 6**	B17 Biodiversity and Ecosystems (Continued): Land and Water Pollution, Air Pollution, Deforestation and Peat Destruction, Global Warming GCSE Revision Programme	B17, working scientifically and synoptic content from B1-B17. B15,16 &17 End of topic test GCSE style questions FT and HT. Teacher marked, feedback though model answer mark scheme and follow up exam style questions on areas of weakness – personalised. Use of Mastery Booklets and past papers to assess progress.	When teaching global warming and the greenhouse effect students need to understand how plants use carbon dioxide (B8) and also how changes in temperature affect the distribution of animals covered in B16. When teaching the importance of biodiversity student are reminded of content covered in B14 on inbreeding. Students drawn pyramids of biomass and clearly demonstrate species interdependence introduced in B17 and how this leads to a stable ecosystem. Reteaching key concepts from paper 1 on the run up to the first May exam, including the 4 Required Practicals for Separate Sciences per subject. There will also be a specific focus on Working Scientifically skills in this period. Focus will then move to paper 2 topic content and the remaining Required Practicals for this paper.	Extended writing