St Cuthbert Mayne School Curriculum Map 2021-2022

Department: Science

Year 12

Autumn Term 1						
Topic/Unit	Biology - Cells	Biology - Biological Molecules	BTEC Applied science			
Knowledge (Content covered)	● Cell structure ● All cells arise from other cells ● Transport across membranes ● Cell recognition and the immune system	● Monomers and polymers ● Carbohydrat es ● Lipids ● Proteins ● Nucleic acids ● ATP ● Water ● Ions	Waves Cells Physical chemistry			

Skills	Investigation microscopy techniques Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Building from the fundamentals of GCSE Developing higher level analysis skills			
Assessment	End of unit exam based assessment	End of unit exam based assessment	End of unit exam based assessment			
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Research scientist Microbiologist Virologist	Biochemist Molecular Biologist	Research scientist			

Autumn Term 2						
Topic/Unit	Biology A-level	Biology A-level	BTEC Applied science			
Knowledge (Content covered)	Cells: • Transport across cell membranes • Cell recognition and the immune system	Biological Molecules: • Nucleic Acids • ATP • Water • Inorganic Ions	Waves Cells Physical chemistry			

Skills	Investigation microscopy techniques Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Building from the fundamentals of GCSE Developing higher level analysis skills			
Assessment	End of unit exam based assessment Practical assessment	End of unit exam based assessment Practical assessment	End of unit exam based assessment			
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Research scientist Microbiologist Virologist	Biochemist Molecular Biologist	Research scientist			

Spring Term 1						
Topic/Unit	Biology	Biology	BTEC applied Science	BTEC applied Science		
Knowledge (Content covered)	Organisms exchange substances with their	Genetic Information, variation and relationships	Anatomy and Physiology skeletal, muscular,	Analytical techniques Learning		

	environment - Surface area to volume ratio - Gas exchange	between organisms - DNA, genes and chromosomes - Protein Synthesis - Genetic Diversity arising from mutations or during meiosis - Genetic Diversity and Adaptation	lymphatic and vascular systems	experimental techniques used in industry		
Skills	Investigation microscopy techniques Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Development of practical skills Embedding mathematics in science		
Assessment	End of unit exam based assessment Practical assessment	End of unit exam based assessment Practical assessment	Coursework	Coursework		

Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Research scientist Microbiologist Virologist	Biochemist Molecular Biologist	Nursing Physiotherapy	Research scientist Analytical Chemist		

Spring Term 2						
Topic/Unit	Biology	Biology	BTEC applied Science	BTEC applied Science		
Knowledge (Content covered)	Organisms exchange substances with their environment -Digestion and absorption -Mass transport	Genetic Information, variation and relationships between organisms - Species and taxonomy - biodiversity within a community - Investigating biodiversity	Anatomy and Physiology skeletal, muscular, lymphatic and vascular systems	Analytical techniques Learning experimental techniques used in industry		
Skills	Investigation microscopy techniques Application of GCSE concepts	Application of GCSE concepts and development of higher level	Application of GCSE concepts and development of higher level	Development of practical skills Embedding mathematics in science		

	and development of higher level thinking	thinking	thinking			
Assessment	End of unit exam based assessment Practical assessment	End of unit exam based assessment Practical assessment	Coursework	Coursework		
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Research scientist Microbiologist Virologist	Biochemist Molecular Biologist	Nursing Physiotherapy	Research scientist Analytical Chemist		

Summer Term 1						
Topic/Unit	A-level Biology	A-level Biology	BTEC applied Science	BTEC applied Science		
Knowledge (Content covered)	Gas exchange Digestion Cardiac cycle Mass flow	DNA Protein synthesis Genetic Diversity Biodiversity	Anatomy and Physiology skeletal, muscular, lymphatic and vascular systems	Analytical techniques Learning experimental techniques used in industry		

Skills	Investigation microscopy techniques Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Development of practical skills Embedding mathematics in science		
Assessment	End of unit exam based assessment Practical assessment	End of unit exam based assessment Practical assessment	Coursework	Coursework		
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Dietician	Ecologist, Environmentalist	Nursing Physiotherapy	Research scientist Analytical Chemist		

Summer Term 2						
Topic/Unit	A-level Biology	A-level Biology	BTEC applied Science	BTEC applied Science		
Knowledge (Content covered)	Gas exchange Digestion Cardiac cycle Mass flow	DNA Protein synthesis Genetic Diversity	Anatomy and Physiology skeletal, muscular,	Analytical techniques Learning		

		Biodiversity	lymphatic and vascular systems	experimental techniques used in industry		
Skills	Investigation microscopy techniques Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Application of GCSE concepts and development of higher level thinking	Development of practical skills Embedding mathematics in science		
Assessment	End of unit exam based assessment Practical assessment	End of unit exam based assessment Practical assessment	Coursework	Coursework		
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Dietician	Ecologist, Environmentalist	Nursing Physiotherapy	Research scientist Analytical Chemist		