Applied Science Double Award KS5 Curriculum Intent, Implementation and Impact Overview

	Year: 13 Subject: Applied Science – Double Award IMPLEMENTATION					
INTENT (**OCR Cambridge technicals Level 3 Applied Science specification coverage** key concepts and skills ('Big ideas')	**Half Term 1 (7)** **Context:** 5.1 The importance of Meiosis 5.2 Genetic Cross Techniques 3.1 Mathematical techniques to analyse data **Key Vocabulary:** Meiosis, Haploid, Diploid, Chromatids, Recombination, Phenotype, Genotype, Homozygous, Heterozygous, mean, median, mode, significant, standard form, rate, uncertainty, error, deviation **Prior Learning / LTM:** GCSE: B13 Reproduction B14 Variation and Evolution B15 Genetics and Evolution GCSE Maths in science, C8 rates of reaction. Y12 Unit 1 Reaction **Cultural Capital:** The understanding of heritability and links within families. Application of mathematical skills	**Half Term 2 (7)** **Context:** 5.3 Whole genome sequencing 3.2 Use graphical techniques to analyse data 3.3 Use keys for analyses **Key Vocabulary:** Restriction endonuclease, genomics, annealing, histogram, scatter, kite diagram, intercept, continuous, discontinuous, interpolation, key **Prior Learning / LTM:** GCSE: B13 Reproduction Y12 Unit 2: Laboratory skills GCSE B15: Classification GCSE Maths in science **Cultural Capital:** The human genome project and the impact of genome sequencing on science History of classification systems, changing ideas about science	**Half Term 3 (7)** **Context:** 5.4 Impact of innovation in genomics 10.3 Titration 3.3 Use keys for analyses 3.4 Analyse and evaluate quality of data **Key Vocabulary:** Application, genome, conservation, ecological, medical, binomial, genus, species, accuracy, precision, uncertainty, anomalies**,** repeatability and reproducibility **Prior Learning / LTM:** GCSE: B13 Reproduction GCSE: C4 Quantitative chemistry GCSE B15: Classification Y12 Unit 2: Laboratory skills **Cultural Capital:** The human genome project and the impact of genome sequencing on science	**Half Term 4 (6)** **Context:** 10.3 Titration 10.5 Data analysis 3.5 Draw justified conclusions from data 3.6. Analytical procedures **Key Vocabulary:** Analyte, Indicator, Titration, Standard, Complexometric, Redox, conclusion, primary, secondary, staining, gram stain, bacteria, chromatography, TLC **Prior Learning / LTM:** GCSE: C4 Quantitative chemistry Y12 Unit 2: Laboratory skills Y12 Unit 8: Cell Biology Y13 Unit :18 Microbiology **Cultural Capital:** Health and Safety in the Lab Understanding of stats and data allowing quality of information to be scrutinised with a critical eye.	**Half Term 5 (5)** **Context:** 3.7 Record, report and review Unit 3 Revision and retention **Key Vocabulary:** Peer review, method, record, data, reporting, analysis, evaluation **Prior Learning / LTM:** GCSE English Y12 and Y13 Applied science units **Cultural Capital:** Scientific report writing and writing for an audience. Importance of peer review and collaboration	**Half Term 6 (6)** **Context:** Unit 3 Revision and retention
All material in the Universe is made of very small particles	X	X	X	X	X	
Objects can affect other objects at a distance				x	x	

Changing the movement of an object requires a net force to be acting on it						
The total amount of energy in the Universe is always the same	x	x				
Organisms are organised on a cellular basis	X	X		X		
Organisms require a supply of energy and materials		x		X		
Genetic information is passed down from one generation of organisms to another	X	X	x			
The diversity of organisms, living and extinct, is the result of evolution	X	X	x			
Apply knowledge and understanding to explain observations.	X	X	X	X	X	X
Use different types of scientific enquiry to answer scientific questions.	X	X	X	X	X	X
Use technical terminology with confidence accurately and precisely.	X	X	X	X	X	X
Apply mathematical knowledge to scientific understanding.	x	X	X	X	X	X
Awareness of some of the social and economic implications of science	X	X	X	X	x	x
IMPACT	Assessment: Coursework Unit 3 Review - Rates Progression to Post 18: Understanding of genetics is important as baseline knowledge for many biology based degree courses. Application of mathematical techniques - transferable skills	Assessment: Coursework Unit 3 Assessment 1 Progression to Post 18: Whole genome sequencing is a growing industry, having a good understanding of the basics is an essential for work in this sector	Assessment: Coursework Unit 3 Assessment 2 Progression to Post 18: Understanding impacts of these technologies is a desirable attribute for employers	Assessment: Coursework Unit 3 Assessment 3 Progression to Post 18: Provides experience of carrying out titrations and handling chemicals which will be useful in lab based work. Data analysis is applicable to any form of research and opens many doors in all industries	Assessment: Coursework Unit 3 Assessment 3 Progression to Post 18: Pathways to higher education for further science study, careers in sport, nutrition and healthcare.	Assessment: **Unit 3 external examination June** Progression to Post 18: Pathways to higher education for further science study, careers in sport, nutrition and healthcare.

Cultural Capital is the body of knowledge a student needs so that they can flourish in the future and not be left behind. LTM = Long Term Memory.