Long Term Plan: Applied Human Biology Year 12 (Teacher Two)

ARCHBISHOP SENTAMU ACADEMY
Church of England

"Science is simply the word we use to describe a method of organising our curiosity."

Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Anticipated misconceptions	Links to previous KS	Opportunity for stretch for high prior attainers
One	Pathogens	The structure and classification of: Bacteria Viruses Fungi Protists Prions The virulence factors of the above	Extended writing - including writing full lab reports with references and citations Drawing and labelling scientific diagrams Interpreting data presented in tabular and graphical format	Confusion between the different types of pathogens Difference between a pathogen and a microorganism	Students will have studied the basics of communicable diseases at KS4, and so will be familiar with the various types of pathogens and modes of transmission.	Are viruses alive? Evaluation of classification systems
SMSC & British Values	Safe working in a lab and respecting each other's working space. Ethical issues surrounding the use of biological samples, including the use of live samples.					
Cultural Capital	The ubiquity of biology allows for examples to be taught in a wide variety of familiar and unfamiliar contexts					
Career Link	A BTEC in Applied Human Biology opens to doors to a wide range of STEM field careers. The topics covered in this unit would build the foundations for students to study a range of biomedical and healthcare courses or to enter these fields through employment					
Two	Human Disease - Case Studies	Classification of diseases Methods of disease prevention Students need to study the cause, symptoms/progression and treatment of the following diseases: Tuberculosis Meningitis	Extended writing - including writing full lab reports with references and citations Drawing and labelling scientific diagrams Interpreting data presented in tabular and graphical format	Students often struggle with the correct format for recording references and citations. They may arrive with misconceptions based on causes and treatments of diseases/illnesses.	Students will have studied the basics of communicable diseases at KS4, and so will be familiar with the various types of pathogens and modes of transmission.	Evaluation of possible treatment and prevention methods

		Chlamydia Cholera HIV Ebola Nora virus Influenza SARS Ring worm Mucormycosis Candidiasis CJD Kuru Malaria Giardia Dysentery Roundworm Pediculosis Current issues in infectious disease, including the rise of antibiotic resistance, hospital acquired infections and the use of experimental treatments				
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Three	Studying Microorganisms	Aseptic technique, including correct use of PPE and sterilisation equipment Safe culturing of microorganisms, including production of street and spread plates Determining microorganism number including use of haemocytometer and turbidimetric methods	Practical microbiology skills - both producing and analysing a variety of plates Extended writing - including writing full lab reports with references and citations Drawing and labelling scientific diagrams Interpreting data presented in tabular and graphical format	Students who studied separate sciences - often known as triple - will be familiar with aseptic technique, which forms the starting point for the deeper study of practical microbiology in this unit.	Students who have studied GCSE Biology will have carried out a required practical on aseptic techniques. (Others will have learnt this as part of the KS3 curriculum) Microscopy is a required practical for all students	This unit could be scaffolded up or down depending on how much of the practical work is pre-prepared by technicians Evaluation of different microbiology methods

		Analysing plates using a microscope Staining techniques			doing GCSE Science or GCSE Biology	
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Four	Microbiology - Mini Dissertation	In this unit students will use the knowledge they learnt in Half term 3 to plan their own investigation into the effect of various antimicrobial agents on the growth of E. coli bacteria	Practical microbiology skills - both producing and analysing a variety of plates Extended writing - including writing full lab reports with references and citations Drawing and labelling scientific diagrams Interpreting data presented in tabular and graphical format	This unit follows directly on from HT3 and allows students to apply their newly learnt knowledge of practical microbiology to an investigation of their own.	Students who have studied GCSE Biology will have carried out a required practical on aseptic techniques. (Others will have learnt this as part of the KS3 curriculum)	Complexity of investigation
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Five	Support Teacher 1 with revision for Unit 1 exam (Coordinate the curriculum coverage) **Revision and preparation for BTEC Unit 1 exam**					

	Revisit to subject knowledge from across the course & use of PLC to ensure that students have a good grasp of all aspects of the specification Use of retrieval quizzes and activities to identify gaps in SK and misconceptions Support students in developing summary notes, flash cards etc to aid retrieval of key facts Ensure that students have the necessary skills for effective revision Review the wider reading that students have been doing to support their preparation for the exam Focus on past exam questions and papers – command words and application of knowledge					
One	Public Health This half term includes external examinations for other subject areas as well as Y12 Work Experience. (This topic may need to be completed at the start of Y13)	The use of public health messages, vaccinations and antibiotics to reduce the spread of disease The impact of lifestyle on health STIs Genetic disorders and genetic screening Drug development	Extended writing - including writing full lab reports with references and citations Drawing and labelling scientific diagrams Interpreting data presented in tabular and graphical format	Confusion between the different stages of drug development The difference between a risk factor and a cause	The content of this unit will be new to students, although background knowledge of disease transmission from year 12 will be helpful.	Comparison of public health interventions and use of real data
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