Yr12 Medical Science – Unit 3

MAGHULL HIGH SCHOOL – CURRICULUM MAP

	Sequence		
TOPIC (S) **Interpretation Analysis and Evaluation**	1. Investigating substances that inhibit the growth of microorganisms 2. Antimicrobial susceptibility testing 3. Data Collection	4. Presenting data 5. **Sources of error in data** 6. Drawing conclusions and evaluating data	7. Limitations of an investigative method 8. Identifying areas of further research
Knowledge & Skills development	• Carry out practicak work to investigate substances that inhibit the growth of microorganisms • Carry out antimicrobial susceptibility testing to include disenfectants antiseptics and natural compounds eg garlic, essential oils. • Carry out antimicrobial susceptibility testing to include effects of concentration of named substances and also bactericidal and bacteriostatic antibiotics • Be able to measure and calculate zones of inhibition • Be able to effectively collect data demonstrate an awareness of anomalous data, repeats and validity. • Be able to identify and present it in various formats including graphs, tables and statistics as appropriate, including an understanding of the calculation and use of standard deviation and the use and interpretation of error bars on graphs. • Identify sources of error in data.		• Using critical thinking skills to draw valid conclusions in relation to the purpose of the investigation questioning relevance of data and challenging own biases • Be able to break information/data into parts and identify trends and patterns • Identify strengths and/or weaknesses and significance of information/data • Be able to draw conclusions supported by structured reasoning and evidence. • Identify common limitations, to include false susceptibility or resistance to antibiotic due to nonstandard confluent growth, use of old disks, disks not stored at 4°C, depth of agar • Identify inconsistent resulting in non-standard diffusion of the antibiotic, incorrect growth conditions for the bacteria. • Be able to identify potential areas for further research and development identified.
Assessment / Feedback Opportunities	**Formative Assessment** Teacher questioning Discussions		**Summative assessment** Final Assignment Submission
Personal Development (Including British Values, RSE, Citizenship)	• **Healthy Lifestyles** : Understanding the importance of diet • **Personal Development:** Collaborative problem solving • **Respect and Tolerance:** conflict of interest and other concepts with regards to ethical issues in Biology		

Literacy/Reading Opportunities	Subject specific vocabulary introduced before reading of related texts Word etymology from Latin and Greek roots Reading of simple and complex sentences, paragraphs, articles Scientific writing for coursework assignments
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error, Antimicrobial, Bacteriocidal, Bacteriostatic, Anomaly,
Cross-Curricular Links	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators Sport – Understanding processes within the human body Health and Social Care – Understanding how disorders impact everyday life, Human Lifespan
Careers Opportunities	Forensics, , Archaeology, Biological Scientists, Microbiology, Biochemistry, Medicine, Pathology, Nursing, Health Visitor, Health Care Assistant, Paramedic Radiologist,