



	Lessons Sequence					
TOPIC (S) Infection & Response	1. Communicable diseases 2. Viral diseases 3. Bacterial diseases 4. Fungal diseases 5. Protist diseases		6. Human defence systems 7. Vaccination 8. Antibiotics & painkillers 9. Drug discovery & development		10. Monoclonal antibodies 11. Uses of monoclonal antibodies 12. Plant disease 13. Plant defence responses	
Knowledge & Skills development	<ul style="list-style-type: none"> Definition of a communicable disease. Examples of viral diseases; Measles, HIV and TMV Examples of bacterial diseases: Salmonella and Gonorrhoea Black Rose Spot as an example of a fungal disease. Malaria as an example of a protist disease. Treatment of these diseases using different drugs. Details of vaccination and what effect this has on the immune system including graph reading. The difference between an antibiotic and a painkiller. Outline the stages in drug discovery and explain what each stage is tested for. 			<ul style="list-style-type: none"> Define monoclonal antibodies, outline how they are made including advantages. Detail how monoclonal antibodies are used in pregnancy tests, measuring levels of hormones in labs, research to locate molecules, cancer treatment. How to detect plant diseases including how to identify the disease the plant is suffering from. Physical and chemical responses of a plant to infection. Mechanical adaptations of plants. 		
Assessment / Feedback Opportunities	Targeted questioning throughout topic	Teacher assessment of practical skills during investigation - verbal	Knowledge recall quick quizzes	Deep marking of written task in students books	Topic Test	Targeted exam questions – teacher or self-assessed
Cultural Capital	<ul style="list-style-type: none"> Differing cultural views on using animals. Discussion of differing cultures and views on homosexuality. Possible visit from STEM ambassador that works in fields above. Possible visit to local vaccine producers on Speke Blvd eg Glaxo Smith 					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	<ul style="list-style-type: none"> The stigmatism historically of HIV Malaria & Red Nose Day. Vaccination programmes. Sexually transmitted infections and safer sex. Working in groups during practicals or research tasks 					
Recommended Reading	<ul style="list-style-type: none"> NHS leaflets/website Vaccination news articles Recommended Read: The Immune System: A very short introduction (Paul Klenerman) 					

Key Vocabulary	<p>Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest</p> <p>Communicable, Immune system, Phagocytes, Antibody, Antigen, Antitoxin, Immunity, Vaccination, Pathogen, Vector, Toxin, Salmonella, monoclonal, hormones, pregnancy tests, hybridoma cell, lymphocytes, Gonorrhoea, condoms, Protists, Rose black spot, Antibiotics. MRSA, Aspirin, Penicillin, Double blind trial, Placebo, sexually transmitted, malaria,</p>
Digital Literacy	<p>SharePoint resources including topic quizzes</p> <p>Possible use of excel to plot graphs and analyse data, powerpoint, word, etc to present information, internet for research</p>
Cross-Curricular Links	<p>PHSCE</p> <p>Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators</p>
Careers	<p>Nursing, Public Health England, drug development scientist, quality assurance, sexual health worker.</p>