**UNIT OVERVIEW:** Communicable disease

**ENQUIRY: how does planning and evaluation of disease prevention and control programs aid in the detection of common-source outbreaks**

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| **Unit intention:**  In KS4 you would have learnt the unit human defence mechanism, Now you will be looking at specific and non specific immune response and the benefits and risks of certain medications, and in Year 13 this will correlate to the topic cellular control. | | | |
| **Success criteria:** | 🗸 | X |
| 1. the different types of pathogen that can cause communicable diseases in plants and animals 2. the means of transmission of animal and plant communicable pathogens 3. plant defences against pathogens 4. the primary non-specific defences against pathogens in animals 5. the structure and mode of action of phagocytes 6. the structure, different roles and modes of action of B and T lymphocytes in the specific immune response 7. the structure and general functions of antibodies 8. the principles of vaccination and the role of vaccination programmes in the prevention of epidemics 9. the benefits and risks of using antibiotics to manage bacterial infection. |  |  |
| **Unit summative and formative assessment details:**  Weekly Seneca, factual re-call  Extended writing  End of unit test | | | |
| **Home Learning (What and how often):**  Homework once a week (flip learning and Seneca)  Revisit class content (make notes)  Research activities for practical | | | |
| **Topic Sequence**  Pathogens and communicable diseases  Animal and plant diseases  Transmission of disease  Plant defences  Non-specific defence  Specific immune system  Preventing and treating disease  Revision  End of unit assessment | **Recommended reading:**  <http://www.histologyguide.org/Slide_Box/Slide_Box.html>  <http://www.saps.org.uk/secondary/teaching-resources/871-medicines-and-drugs-from-plants-trumps-card-game>  HPA Recommended biological dictionary: <http://www.biologyreference.com/>  **Places to visit:**  Natural History Museum  Horniman Musuem  Centre of the cell | |

**End of Unit EVALUATION**

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| **Success criteria** – Have you met them? Show your evidence in the boxes below. |
| **1.** |
| **2.** |
| **3.** |
| **4.** |
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| **6.** |
| **How will you improve your work?** |

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| **Unit intention:**  Knowledge of how enzymes function and the factors that affect enzyme action has improved our understanding of biological processes and increased our use of enzymes in industry. Enzymes are studied at GCSE. Most students beginning A Level will understand the nature of enzymes, the mechanism of enzyme action, and factors that affect the rate of enzyme-controlled reactions. Students’ prior knowledge and understanding can be used as a base from which to introduce the greater depth and breadth required at A Level. | | | |
| **Success criteria:** | 🗸 | X |
| 1.The mechanism of enzyme action  2.The role of enzymes in catalysing reactions that affect metabolism at a cellular and whole organism level.  3.The role of enzymes in catalysing both intracellular and extracellular reactions.  4.The effects of pH, temperature, enzyme concentration and substrate concentration on enzyme activity.  5.The need for coenzymes, cofactors and prosthetic groups in some enzyme-controlled reactions.  6.The effects of inhibitors on the rate of enzyme controlled reactions. |  |  |
| **Unit summative and formative assessment details:**  Weekly Seneca, factual re-call  Extended writing  End of unit test | | | |
| **Home Learning (What and how often):**  Homework once a week (flip learning and Seneca)  Revisit class content (make notes)  Research activities for practical | | | |
| **Topic Sequence**   1. Actions of Enzymes 2. Factors affecting enzyme Activity 3. Cofactors and Enzyme Inhibition 4. Cofactors continued | **Recommended reading:**  <http://www.histologyguide.org/Slide_Box/Slide_Box.html>  <http://www.saps.org.uk/secondary/teaching-resources/871-medicines-and-drugs-from-plants-trumps-card-game>  HPA Recommended biological dictionary: <http://www.biologyreference.com/> | |

**UNIT OVERVIEW:** Enzymes

**ENQUIRY:** Why are Enzymes considered ubiquitous?

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| **Success criteria** – Have you met them? Show your evidence in the boxes below. |
| **1.** |
| **2.** |
| **3.** |
| **4.** |
| **How will you improve your work?** |