**Curriculum Overview for Biology**

**Year 11**

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| **Half Term 5: Ecology**  **Substantive Knowledge:**   * Maintain biodiversity * Trophic levels and pyramids of biomass * Efficiency of biomass transfer between trophic levels. * Triple🡪factors affecting food production and security.   **Disciplinary Knowledge:**  Analysis of data  Writing like a scientist  Understanding and responding to command terms  Applying  **Revision for exams**  **Substantive Knowledge:**   * Cell structure and function * Cell transport methods; diffusion, osmosis and active transport * Surface area and volume ratio * Microscopy * Cell cycle * Genes, chromosomes and DNA * Hierarchical system: cells, tissues and organs * Plant systems   + - Leaf structure and function     - Stomata structure and function     - Root structure and function     - Xylem structure and function     - Phloem structure and function     - Transpiration stream     - Rates of transpiration and how they are impacted * Communicable diseases – Spread methods, reduction and prevention, reproduction. * Viral diseases – Measles, vaccinations, HIV and the immune system, Tobacco mosaic virus and impact on plants. * Bacterial diseases – Salmonella effects and causes, Gonorrhoea treatment, causes, spread. * Fungal diseases – Rose black spot effects and treatment. * Protist diseases – Malaria spread and prevention. * Human defence – Non-specific and WBCs. * Vaccination – How it works, why we do it. * Antibiotics and painkillers – Use, how they work, fact that painkillers don’t kill pathogens. * Monoclonal antibodies (Triple) – Production, use, benefits. * Plant disease (Triple) – Detection methods, identification, infection types, effects. * Photosynthesis reaction * Rates of reaction for photosynthesis * Limiting factors of photosynthesis * Investigating rates of photosynthesis * How plants use glucose * Aerobic and anaerobic respiration * Impact of exercise on respiration * Metabolism | Books | Skim and Scan of source information  Decoding terms  Etymology of key terms |
| Speech | All from unit 1 – unit 4 |
| Checklist RTL | GCSE Paper 1 exam 13th May |
| Home | Revision Card preparation for every lesson  Revision plan tasks  Examination questions  Repetition of use of revision cards for end of unit assessment |
| **Half Term 6: Paper 2 revision**  **Substantive Knowledge:**  Homeostasis (nervous and endocrine systems)  Genetic inheritance  Evolution  Ecology – sampling, environment changes and cycles in nature  **Disciplinary Knowledge:**  Analysis of data  Writing like a scientist  Understanding and responding to command terms  Applying concepts into different contexts | Books | Skim and Scan of source information  Decoding terms  Etymology of key terms |
| Speech | All from unit 5 – unit 7 |
| Checklist RTL | GCSE paper 2 exam 9th June |
| Home | Revision Card preparation for every lesson  Revision plan tasks  Examination questions  Repetition of use of revision cards for end of unit assessment |