**Curriculum Overview for Biology**

**Year 11**

|  |  |  |
| --- | --- | --- |
| **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 dataWriting like a scientistUnderstanding and responding to command termsApplying **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 informationDecoding termsEtymology of key terms |
| Speech | All from unit 1 – unit 4 |
| Checklist RTL | GCSE Paper 1 exam 13th May |
| Home | Revision Card preparation for every lessonRevision plan tasksExamination questionsRepetition of use of revision cards for end of unit assessment  |
| **Half Term 6: Paper 2 revision****Substantive Knowledge:**Homeostasis (nervous and endocrine systems)Genetic inheritanceEvolutionEcology – sampling, environment changes and cycles in nature**Disciplinary Knowledge:**Analysis of dataWriting like a scientistUnderstanding and responding to command termsApplying concepts into different contexts | Books | Skim and Scan of source informationDecoding termsEtymology of key terms |
| Speech | All from unit 5 – unit 7 |
| Checklist RTL | GCSE paper 2 exam 9th June |
| Home | Revision Card preparation for every lessonRevision plan tasksExamination questionsRepetition of use of revision cards for end of unit assessment |