



Year 12 Biology

| Subject and Year Group | Autumn 1 Year 12 | Autumn 2 Year 12 | Spring 1 Year 12 | Spring 2 Year 12 | Summer 1 Year 12 | Summer 2 Year 12 |
|----------------------------------|--|------------------|--|------------------|--|------------------|
| Topic/Unit to be studied | Unit 1 – Biological Molecules Unit 2 - Cells | | Unit 3 – Organisms exchange substances with their environment Unit 4 – Genetic information | | Unit 5 (part of) – Photosynthesis Unit 7 (part of) - Population in ecosystems | |
| Core Knowledge and skills | Biological molecules – Carbohydrates Lipids Proteins Enzymes Nucleic acids ATP Water & ions <u>Required practicals</u> RP1 – Enzyme controlled reactions Cells – Microscopy Cell structure Mitosis & the cell cycle Transport across cell membranes Cell recognition & the immune system <u>Required practicals</u> RP2 - Calculation of mitotic index RP3 – Water potential in plant tissue RP4 – Permeability of plasma membranes | | Exchange Surface area to volume ratio Gas exchange (cells, insects, fish) Gas exchange in plants & transpiration Breathing & gas exchange in the lungs Digestion and absorption Haemoglobin, blood & the heart Mass transport in plants <u>Required practicals</u> RP5 – dissection of gas exchange system Genetic information Genes and chromosomes Protein synthesis Mutations Meiosis & variation Genetic diversity & Selection Species & taxonomy Biodiversity Investigating diversity <u>Required practicals</u> RP6 – Aseptic technique and antimicrobials | | Photosynthesis Light-dependent reaction Light-independent reaction <u>Required practicals</u> RP 7 - Chromatography of photosynthetic pigments RP 8 – Chloroplast investigation Populations in Ecosystems Population size Competition Predation Investigating populations Succession Conservation of habitats <u>Required practicals</u> RP12 – Species distribution (Field Trip to Runswick Bay) | |
| Assessments | End of Unit assessments including interleaving of previous topics (MCQ/short answer/long answer) | | End of Unit assessments including interleaving of previous topics (MCQ/short answer/long answer) | | End of Unit assessments including interleaving of previous topics (MCQ/short answer/long answer) | |