Year 10: Biology	**Curriculum Intent:** Year 10 Biology tackles more complex ideas and concepts in the subject. It builds on the key knowledge from years 7,8 and 9 to link together all the areas of the subject. The learning journey goes from the microscopic; looking at cell level systems and processes within cells such as mitosis, through organism and community level systems, to larger scale global issues facing the world of biology. Procedural knowledge and practical skills are developed further, building on experience with microscopy, osmosis and active transport experiments and sampling. The curriculum in year 10 aims to bring everything together so that students have a complete understanding of the Biology aspect of the Combined Science course.					
	Topic 1 – B1 Cell Level Systems	**Topic 2 – B2 Scaling up**	**Topic 3 – B3 Organism-level systems**	**Topic 4 – B4 Community-level systems & B6.1 Environment**	**Topic 5 – B5 Genes, Inheritance and Selection**	**Topic 6 – B6 Global Challenges**
Key ideas	B1.1 B1.4 plus review • Electron Microscope with Cells & Microscope recap • PAG B1 B1.2 • Enzyme review & factors • Enzyme reactions • PAG B3 B1.3 • Applications of Aerobic & Anaerobic Respiration – endo/exo B1.4 • Factors affecting photosynthesis • Interaction of limiting factors	B2.1 • Active transport plus Osmosis review • Osmosis Practical • Mitosis • Cell Differentiation • Stem Cells B2.2 • Plant transport • Transpiration • Factors affecting transpiration Assessment DIRT (10 lessons)	B3.1 • Nervous system recap B3.2 • Negative Feedback & Hormone review • Menstrual Cycle • Controlling Reproduction (6 lessons)	B4.1 • Decomposition • Carbon Cycle • Nitrogen Cycle B6.1 • Sampling review & theory plants & animals • PAG B2 • Loss of Biodiversity • Maintain biodiversity • Monitoring biodiversity Assessment DIRT (10 lessons)	B5.1 • Sexual & Asexual reproduction with Mitosis recap • Meiosis • Genetic crosses recap • Evidence of evolution • Classification systems (5 lessons)	B6.2 • Genetic engineering in agriculture • Producing GE organisms • Biotech in farming B6.3 part 1 • Communicable diseases recap • Antibodies, antigens & Vaccines recap • Prevention and treatment of disease • New Medicines • Plant diseases • PAG 5 B6.3 part 2 • Non-communicable recap

	• PAG B4 Assessment DIRT (11 lessons)					• Modern advances in medicine (1) • Modern advances in medicine (2) (12 lessons) (54 lessons) To be completed before Easter Exams
Sequence of Learning -Key Questions	How has the development of microscopy allowed new Scientific discovery? Building on prior knowledge: What is the role of enzymes in metabolism in eukaryotes?	How are cells replaced? How does cell differentiation lead to more complex organisms?	What is the role of hormones in human reproduction, including the control of the menstrual cycle?	How are nutrients recycled through the environment? How is Human activity affecting the Earth's Biodiversity?	How does human reproduction produce variation? What evidence is there for evolution? How do we organise the natural world?	How do we produce a genetically engineered organism and how is this advantageous to the human race? How have Scientific developments improved the prevention of disease?
Vocabulary	• Eukaryotic • Prokaryotic • Subcellular structures • Organelles •	•				
Practical Skills	B1 PAG Microscopy B3 PAG – Enzymes	Osmosis Practical Transpiration demo/ potometer		B2 PAG - Sampling		PAG B5 Microbiology

	B4 PAG - Photosynthesis					
Assessment (Related to mastery grids)	Enzyme PAG analysis & evaluation Photosynthesis PAG analysis & evaluation Physiology PAG analysis & evaluation Written Assessment based on 75% content ALL B1 25% content B2-6 from Y9	Written Assessment - 75% content ALL B2 - 25% all other content to date B1, B3-6 from Y9	MCQ assessed homework Level-assessed task on diabetes	B4 Keyword assessed homework – research an organism and link to all ecosystem, competition, interdependence, keywords. Sampling PAG analysis & evaluation Written assessment - 75% content ALL B3 & B4 - 25% B1, B2 & B6 from Y9	Research task on KT boundary (SCL)	