Biology
Year 12 curriculum map

Year 12	T1	T2	T3	T4	T5	T6
Content / Topic for Term	Biological molecules Cells	Biological molecules Cells	Organisms exchange substances with their environment Cells	Organisms exchange substances with their environment Genetic information, variation and relationships between organisms	Organisms exchange substances with their environment Genetic information, variation and relationships between organisms	Energy transfer between in and between organisms Genetic information, variation and relationships between organisms Genetics, populations evolution and ecosystems
Key Knowledge for acquisition, recall and application in assessment or exam	Biological molecules • carbohydrates, fats, proteins and enzymes Cells • prokaryotic, eukaryotic, viruses, membrane structure, microscopes and magnification,	Biological molecules • protein and enzymes. DNA, water, ATP Cells • diffusion, osmosis, co and active transport • tumours and replication in viruses and bacteria	Organisms exchange substances with their environment • heart and blood, oxygen • dissociation Cells • cell mediated response, humoral response, antibody / antigen	Organisms exchange substances with their environment • gas exchange processes in different tiered organisms and plants • digestion and co transport in animals	Organisms exchange substances with their environment • transport in plants, digestion co transport and statistical testing Genetic information, variation and relationships between organisms	Energy transfer between in and between organisms Food chains, productivity, cycles and environmental impact Genetic information, variation and relationships between organisms

	separating organelle, cell cycles and mitosis	• cell recognition and the immune system	variability, monoclonal antibodies • immunity • HIV	Genetic information, variation and relationships between organisms • structure and function of; DNA, RNA, extraction of DNA • gamete formation and mutations • natural and directional selection	• species and courtship, classification • standard error and standard deviation	Biodiversity Genetic diversity Genetics, populations evolution and ecosystems Evolution and speciation, estimating population size
Key skills to apply in assessment or exam	• Recall of structure and function, application of biological testing and calculation of magnification. • Evaluation of results from data.	• Application of practical skills, data evaluation and plotting. • Calculation of tangents to calculate initial rates from graphs.	• Evaluate ethical issues. Evaluate methodology, evidence and data. • Calculate rates from graphed data, explanation of concepts.	• Calculation of surface area, volume, and rate. • Investigation design. Use of logarithmic scale. • Use of formula to calculate values.	• Calculation of indexes, rate of water transport. • Use of Standard error and standard deviation in evaluation of data.	• Calculation of data, use of random sampling, appropriate design of investigations. • Calculation of energy transfer and respiratory loss.
Title of Knowledge Organiser	Biological molecules Cells	Biological molecules Cells	Organisms exchange substances with their environment Cells	Organisms exchange substances with their environment	Organisms exchange substances with their environment	Energy transfer between in and between organisms

				Genetic information, variation and relationships between organisms	Genetic information, variation and relationships between organisms	Genetic information, variation and relationships between organisms Genetics, populations evolution and ecosystems