

# Biology

*'In all things of nature there is something of the marvellous' - Aristotle*

## Year 12

	Autumn	Spring	Summer
Curriculum Knowledge	<ul style="list-style-type: none"> <li>• Biological molecules</li> <li>• Exchange</li> <li>• Mass transport</li> </ul>	<ul style="list-style-type: none"> <li>• Cells</li> <li>• Mass transport</li> <li>• DNA, genes &amp; protein synthesis</li> </ul>	<ul style="list-style-type: none"> <li>• Photosynthesis</li> <li>• Genetic diversity &amp; adaptation</li> <li>• Biodiversity</li> <li>• Inheritance</li> </ul>
Tier 3 Vocabulary	<p>polymerisation, condensation, hydrolysis, glycosidic, peptide, monosaccharides, disaccharides, enzyme, deoxyribonucleic acid (DNA), ribonucleic acid(RNA),adenine, thymine, guanine, cytosine, uracil, nucleotide adenosine triphosphate (ATP),</p> <p>tracheole, lamellae, countercurrent, stomata, xerophyte,trachea, bronchi, bronchiole, alveoli, intercostal, endothelium, epithelium, oesophagus, stomach, ileum, rectum, egestion, denature, micelle, emulsification, chylomicron, exocytosis,</p> <p>haemoglobin, dissociation, positive cooperativity, metabolism,</p>	<p>magnification, resolution, eukaryote, prokaryote, mitosis, cytokinesis, phospholipids, cholesterol, glycolipids, glycoprotein, diffusion, osmosis, active transport, co-transport, lymphocyte, phagocytosis, lysozyme, antigen, cytotoxic, monoclonal antibodies,Human immunodeficiency virus (HIV),</p> <p>atrium, ventricle, diastole, systole, hydrostatic pressure, ultrafiltration, transpiration, xylem, cohesion-tension theory, phloem, translocation,</p> <p>gene, polypeptide, degenerate code, chromosome, chromatid, histone,</p>	<p>photosynthesis, chlorophyll, grana, thylakoid, stroma, photoionisation, chemiosmotic, photolysis,</p> <p>polyploidy, meiosis, recombination, mutation, directional selection, stabilising selection, species,binomial, phylogeny, taxonomy, interspecific variation, intraspecific variation,</p>

		homologous, allele, genome, proteome, codon, anticodon, transcription, translation,	
Curriculum Opportunities	iCell interactive simulations PMT website Science mentoring of younger students	iCell interactive simulations PMT website Science mentoring of younger students	iCell interactive simulations PMT website Science mentoring of younger students Outreach activities with primary school children
<b>Year 13</b>			
	Autumn	Spring	Summer
Curriculum Knowledge	<ul style="list-style-type: none"> <li>● Respiration</li> <li>● Response to stimuli</li> <li>● Nervous coordination and muscles</li> <li>● Inherited change</li> <li>● Populations &amp; evolution</li> <li>● Energy &amp; ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>● Gene expression</li> <li>● Recombinant DNA technology</li> <li>● Homeostasis</li> <li>● Populations in ecosystems</li> </ul>	Consolidation and revision
Tier 3 Vocabulary	<p>Aerobic, Anaerobic, Respiration, Mitochondria, Matrix, Cristae, Active transport, Cytoplasm, Glycolysis, Link reaction, Krebs cycle, ETC, Chemiosmosis, NAD, FAD, ATP, ADP, Oxidation, Reduction, Pyruvate, Ethanol. Oxidative phosphorylation, Substrate level phosphorylation</p> <p>Receptor, Stimulus, Taxis, Kinesis, Tropism, IAA, Phototropism, Gravitropism, Rapid cell elongation, Retina, Rod cell, Cone cell, Pacinian corpuscle, SAN, AVN, Purkinje fibres, Bundle of His.</p>	<p>mutation, totipotency, pluripotent, unipotent, transcriptional factors, epigenetics, epigenome, acetylation, methylation, benign, malignant, recombinant, transgenic, reverse transcriptase, restriction endonuclease, promotor, vector, polymerase chain reaction (PCR), electrophoresis</p> <p>Homeostasis, Negative feedback, Blood Glucose, Insulin, Glucagon, Glycogen, Gluconeogenesis, Glycogenolysis, Adrenaline, Secondary messenger, Kidney, Nephron, Tubule, Glomerulus, Loop of Henle, PCT, DCT,</p>	

	<p>Nervous system, Autonomic, Involuntary, Stimulus, Receptor, CNS, PNS, Effector, Response, Sensory, Relay, Motor, Synapse, Vesicle, Neurotransmitter, Sodium potassium pump, Depolarisation, Repolarisation, Action potential, Skeletal muscles, Sarcoplasmic reticulum, Sarcolemma.</p> <p>dominant, recessive, codominance, linkage, autosomal, homozygous, heterozygous, genotype, phenotype, epistasis, speciation, sympatric, allopatric,</p>	<p>Ions, Capillary, Diffusion, Active transport, Osmosis, Concentration gradient, Ureter, ADH, Urine, Urea, Excretion, Waste product, Dialysis, Transplant.</p> <p>Population, community, habitat, ecological niche, abiotic, intraspecific competition, interspecific competition, predation, quadrat, succession, pioneer community, climax community</p>	
Curriculum Opportunities	<p>iCell interactive simulations PMT website Science mentoring of younger students</p>	<p>iCell interactive simulations PMT website Science mentoring of younger students</p>	