

## CURRICULUM OVERVIEW BIOLOGY (HL)

	Topic/unit	Contents	Allocated time			Assessment instruments to be used	Resources.
			One lesson is	45	minutes		
			in one week there are	6	lessons		
<b>Year 1</b>	<b>Topic 1: Cell Biology</b>	1.1 Introduction to Cells 1.2 Ultrastructure of Cells 1.3 Membrane Structure 1.4 Membrane Transport 1.5 The Origin of Cells 1.6 Cell Division		15 hours	20 lessons	Unit Test Quizzes Lab Activities Lab reports Oral presentations Class discussions Research projects Worksheets	Textbooks (IB DP Biology Oxford) Workbooks (IB DP Biology Oxford) Guidebooks Vernier YouTube BioNinja
	<b>Topic 2: Molecular Biology</b>	2.1 Molecules to metabolism 2.2 Water 2.3 Carbohydrates and Lipids 2.4 Proteins 2.5 Enzymes 2.6 Structure of DNA and RNA 2.7 DNA replication, transcription and translation 2.8 Cell Respiration 2.9 Photosynthesis		21 hours	28 lessons		
	<b>AHL Topic 7: Nucleic acids</b>	7.1 DNA structure and replication 7.2 Transcription and gene expression 7.3 Translation		9 hours	12 lessons		

	<p><b>AHL Topic 8: Metabolism, cell respiration and photosynthesis</b></p>	<p>8.1 Metabolism 8.2 Cell respiration 8.3 Photosynthesis</p>	<p>14 hours 18 lessons</p>		
	<p><b>AHL Topic 9: Plant biology</b></p>	<p>9.1 Transport in the xylem of plants 9.2 Transport in the phloem of plants 9.3 Growth in plants 9.4 Reproduction in plants</p>	<p>13 hours 18 lessons</p>		
	<p><b>Topic 4: Ecology</b></p>	<p>4.1 Species, Communities and ecosystems 4.2 Energy Flow 4.3 Carbon Cycling 4.4 Climate Change</p>	<p>12 hours 16 lessons</p>		
	<p><b>Topic 3: Genetics</b></p>	<p>3.1 Genes 3.2 Chromosomes 3.3. Meiosis 3.4 Inheritance 3.5 Genetic Modification and Biotechnology</p>	<p>15 hours 20 lessons</p>		
	<p><b>AHL Topic 10: Genetics and evolution</b></p>	<p>10.1 Meiosis 10.2 Inheritance 10.3 Gene pools and speciation</p>	<p>8 hours 10 lessons</p>		

<b>Year 2</b>	<b>Topic 5: Evolution and Biodiversity</b>	5.1 Evidence for Evolution 5.2 Natural Selection 5.3 Classification of Biodiversity 5.4 Cladistics	12 hours 16 lessons		
	<b>Topic 6: Human Physiology</b>	6.1 Digestion and Absorption 6.2 The Blood system 6.3 Defense against infectious diseases 6.4 Gas exchange 6.5 Neurons and synapses 6.6 Hormones, homeostasis and reproduction	20 hours 28 lessons		
	<b>Option D: Human Physiology</b>	D.1 Human nutrition D.2 Digestion D.3 Functions of the liver D.4 The heart D.5 Hormones and metabolism D.6 Transport of respiratory gases	25 hours 32 lessons		
	<b>AHL Topic 11: Animal physiology</b>	11.1 Antibody production and vaccination 11.2 Movement 11.3 The kidney and osmoregulation 11.4 Sexual reproduction	16 hours 22 lessons		
<b>Year 1 and 2</b>	Practical Activity		40 hours 54 lessons		
	Individual Investigation		10 hours 13 lessons		

	<b>Group 4 Project</b>		10 hours 13 lessons		
<b>Total</b>			* 1st year (32 weeks) → 140 DP hours = 186 lessons  * 2nd year (23 weeks) → 100 DP hours = 134 lessons  *240 DP hours = 320 lessons		