

# Summer 2022 Triple Biology Higher

## Paper 1

			Revision pages
<b>Topic 1 Cell Biology</b>	<b>Major Focus 4.1.1 Cell structure</b>	<ul style="list-style-type: none"> <li>The differences and similarities of Eukaryote cells (plant &amp; animals) and Prokaryote cells (bacteria)</li> <li>Organelle function</li> <li>Plant and animal cell differences and similarities</li> <li>Sperm cell, nerve cell and muscle cell</li> <li>Root hair cell, xylem and phloem cells</li> <li>How they are adapted to function</li> <li>Cell differentiation</li> <li>Microscopy</li> <li>Difference between resolution and magnification</li> <li>Compare light microscope to electron microscope</li> </ul>	Page 16 -17  Bottom of page 22 & page 23  Page 18-19
	<b>Major Focus 4.1.3 Transport in cells</b>	<ul style="list-style-type: none"> <li>Diffusion</li> <li>Osmosis</li> <li>Active Transport</li> </ul>	Page 34 Page 35 Page 37
	Minor Focus 4.1.2 Cell Division	<ul style="list-style-type: none"> <li>Mitosis</li> <li>Binary Fission</li> <li>Stem Cells</li> </ul>	Page 26-27 Page 28 Page 24-25
	<b>Major Focus Required Practical</b>	<ul style="list-style-type: none"> <li>Required practical activity 1: how a light microscope is used to observe plant cells.</li> <li>Required practical activity 3: investigate the effect of a range of concentrations of salt solution on the mass of plant tissue</li> </ul>	Page 19-20  Page 36
<b>Topic 2 Organisation</b>	<b>Major Focus 4.2.2 Animal tissues, organs and organ systems</b>	<ul style="list-style-type: none"> <li>Principles Of organization</li> <li>Digestive System and enzymes</li> <li>Lungs</li> <li>Heart</li> <li>Blood vessels</li> <li>CHD</li> <li>Effect of lifestyle on non-communicable disease</li> </ul>	Page 45 Page 46- 48 50-51  Page 56- 57 Page 58 Page 59 Page 63 – 65 Page 67 -70
	<b>Major Focus 4.2.3 Plant tissues, organs and systems</b>	<ul style="list-style-type: none"> <li>Plant tissue</li> <li>Structure of the leaf</li> <li>Plant organ system</li> <li>Transpiration + stomata &amp; guard cells</li> <li>translocation</li> </ul>	Page 73  Page 75-77 Page 74
	<b>Major Focus Required Practical</b>	<ul style="list-style-type: none"> <li>Required Practical Activity 4 – test for carbohydrates (starch &amp; glucose) lipids and protein</li> </ul>	Page 52-53
<b>Topic 3 Communicable Disease</b>	<b>Major Focus 4.3.1 Communicable diseases</b>	<ul style="list-style-type: none"> <li>How diseases are caught, spread and how they make us ill</li> <li>Viral disease</li> <li>Bacterial disease</li> <li>Fungal diseases</li> <li>Protist diseases</li> <li>Human defence systems</li> <li>White blood cell defence : phagocytosis, antibodies and antitoxin</li> <li>Vaccination</li> </ul>	Page 81 -82 Page 83 Page 84 Page 83 Page 84 Page 85 Page 87 Page 88 -89
	<b>Major focus 4.3.2 Monoclonal Antibodies</b>	<ul style="list-style-type: none"> <li>Producing Monoclonal antibodies</li> <li>Uses of Monoclonal antibodies</li> </ul>	Page 95-97
	Minor Focus 4.3.3 Plant Disease	<ul style="list-style-type: none"> <li>Detection and identification</li> <li>Plant defence</li> </ul>	Page 98

<b>Topic 4 Bioenergetics</b>	Minor Focus 4.4.1 Photosynthesis	<ul style="list-style-type: none"> <li>• Photosynthesis word and symbol equation (endothermic)</li> <li>• Rate of Photosynthesis</li> <li>• Limiting factors</li> <li>• Uses Of glucose from photosynthesis</li> </ul>	Page 101 Page 102-103 Page 106 -107 Page 104 Page 105 -107 Page 101
	Minor Focus 4.4.1 Respiration	<ul style="list-style-type: none"> <li>• Aerobic and Anaerobic</li> <li>• Metabolism</li> </ul>	Page 110 &112 Page 111

<b>Paper 2</b>			
			Revision Pages
<b>Topic 5 Homeostasis and Response</b>	<b>Major Focus 4.5.2 Nervous System</b>	<ul style="list-style-type: none"> <li>• Control Of Body Temperature</li> </ul>	Page 126 -127
	<b>Major Focus 4.5.3 Hormonal control in Humans</b>	<ul style="list-style-type: none"> <li>• Endocrine System</li> <li>• Control Of Blood Glucose Levels &amp; diabetes</li> <li>• Maintaining water and nitrogen balance in the body – kidneys and kidney failure</li> </ul>	Page 130 Page 132-133 Page 135-137 Page 139 – 140
	<b>Major Focus 4.5.4 Plant Hormones</b>	<ul style="list-style-type: none"> <li>• Control and co-ordination</li> </ul>	Page 146
	Minor Focus 4.5.1 Homeostasis	<ul style="list-style-type: none"> <li>• Explain what it is and why it is important</li> </ul>	Page 116
	<b>Required Practical</b>	<ul style="list-style-type: none"> <li>• Required Practical 8 – investigate the effect of light on newly germinated seedlings</li> </ul>	Page 147
<b>Topic 6 Inheritance, Variation and Evolution</b>	<b>Major Focus 4.6.1 Reproduction</b>	<ul style="list-style-type: none"> <li>• Sexual and Asexual Reproduction</li> <li>• Meiosis ( also compare to mitosis)</li> <li>• DNA and the genome</li> <li>• DNA structure and protein synthesis</li> <li>• Genetic Inheritance – crosses, Punnett squares and key vocabulary and terms</li> <li>• Inherited disorders – Polydactyl and cystic fibrosis</li> </ul>	Page 157 Page 158 Page 151 – 152 Page 153 Page 164-167  Page 168-9
<b>Topic 7 Ecology</b>	<b>Major Focus Organisation of an ecosystem 4.7 Ecology</b>	<ul style="list-style-type: none"> <li>• Levels of organization – feeding relationships, predator, prey, consumers, producers food chains and webs</li> <li>• Carbon Cycle</li> <li>• Water cycle</li> <li>• Role of decomposers</li> <li>• Decomposition / decay</li> </ul>	Page 194 page 198 Page 204 Page 203 Page 207-208
	Minor Focus Ecology	<ul style="list-style-type: none"> <li>• Communities</li> <li>• Abiotic Factors</li> <li>• Biotic Factors</li> <li>• Waste management</li> <li>• Land use</li> <li>• Global warming</li> <li>• Transfer of biomass</li> <li>• Factors effecting food security</li> <li>• Farming techniques</li> </ul>	Page 194 Page 195 & 202 Page 196 Page 213 Page 214 -215 Page 216 Page 224 Page 225 Page 226
	<b>Major Focus Required Practical</b>	<ul style="list-style-type: none"> <li>• Required Practical Activity 9 – measure the population size of a common species in a habitat</li> </ul>	Page 200-201