

# HIGHFIELDS SCHOOL

OVERVIEW - SCHEME OF WORK 2021-2022



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**SUBJECT: A LEVEL BIOLOGY**

**EXAMINATION BOARD: OCR BIOLOGY A H420**

AUTUMN TERM - YEAR 12	SPRING TERM - YEAR 12	SUMMER TERM - YEAR 12
<p><b>Module 2 – Foundations in biology</b>                      2.1 - Cell structure                      2.2 - Biological molecules                      2.3 - Nucleotides and nucleic acids                      2.4 - Enzymes                      2.5 - Biological membranes                      2.6 - Cell division, cell diversity and cellular organisation</p> <p><b>Module 1</b> will be integrated within other modules of the specification.</p>	<p><b>Module 3 – Exchange and transport</b>                      3.1 - Exchange surfaces                      3.2 - Transport in animals                      3.3 - Transport in plants</p> <p><b>Module 4 – Biodiversity, evolution and disease</b>                      4.1 - Communicable diseases, disease prevention and the immune system                      4.2 – Biodiversity</p> <p><b>Module 1</b> will be integrated within other modules of the specification.</p>	<p><b>Module 4 – Biodiversity, evolution and disease</b>                      4.3 - Classification and evolution</p> <p><b>Module 5 – Communication, homeostasis and energy</b>                      5.1. - Communication and homeostasis                      5.2 - Excretion as an example of homeostatic control                      5.4 - Hormonal Communication</p> <p><b>Module 6 – Genetics, evolution and ecosystems</b>                      6.4 - Cloning and biotechnology</p> <p><b>Module 1</b> will be integrated within other modules of the specification.</p>
<p><b>Potential Practical Activities</b></p> <ul style="list-style-type: none"> <li>• Stage micrometers and graticules</li> <li>• Observation of specialised tissue and testing for reducing sugars, proteins and lipids</li> <li>• Osmosis in plant tissue</li> <li>• Enzyme investigations looking at factors that affect the rate of reaction e.g. substrate concentration, use of colorimeters</li> </ul>	<p><b>Potential Practical Activities</b></p> <ul style="list-style-type: none"> <li>• Potometers to measure the rate of transpiration</li> <li>• Heart dissection</li> <li>• Lung dissection</li> <li>• Stem dissection</li> <li>• Estimating population techniques</li> </ul>	<p><b>Potential Practical Activities</b></p> <ul style="list-style-type: none"> <li>• Investigating pH change during yoghurt production</li> <li>• Estimating microbial populations using plating method</li> </ul>
<p><b>ASSESSMENT</b></p> <ul style="list-style-type: none"> <li>• Cell Structure Exam</li> <li>• Biological Molecules Exam</li> <li>• December Exam (Enzymes, Biological Membranes, Nucleic Acids and Cell Division and Specialisation)</li> </ul> <p><b>PAGS</b> 1, 4, 5, 9, 8</p>	<p><b>ASSESSMENT</b></p> <ul style="list-style-type: none"> <li>• Plant Transport Exam</li> <li>• Animal Transport Exam</li> <li>• Biodiversity and Evolution Exam</li> <li>• Mock Exam</li> </ul> <p><b>PAGs</b> 1, 2, 3, 5,10</p>	<p><b>ASSESSMENT</b></p> <ul style="list-style-type: none"> <li>• Year 12 Examination (Modules 1 to 4)</li> </ul> <p><b>PAG 7</b></p>

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AUTUMN TERM - YEAR 13	SPRING TERM - YEAR 13	SUMMER TERM - YEAR 13
<p><b>Module 6 – Genetics, evolution and ecosystems</b> 6.1 - Cellular control 6.3 - Manipulating genomes</p> <p><b>Module 5 – Communication, homeostasis and energy</b> 5.5 – Plant and animal responses 5.6 - Photosynthesis 5.7 - Respiration</p> <p><b>Module 1</b> will be integrated within other modules of the specification.</p>	<p><b>Module 6 – Genetics, evolution and Ecosystems</b> 6.2 - Patterns of inheritance 6.5 - Ecosystems 6.6 - Populations and sustainability</p> <p><b>Module 1</b> will be integrated within other modules of the specification.</p>	<p><b>Revision and examination preparation - Modules 1 to 6</b></p>
<p><b>Potential Practical Activities</b></p> <ul style="list-style-type: none"> <li>Investigating Respiration in Yeast</li> </ul>	<p><b>Potential Practical Activities</b></p> <ul style="list-style-type: none"> <li>Investigating changes in pulse rate during exercise</li> <li>Investigating factors affecting the rate of photosynthesis</li> </ul>	
<p><b>ASSESSMENT</b></p> <ul style="list-style-type: none"> <li>Autumn Term Mock Biology</li> </ul> <p><b>PAG 12</b></p>	<p><b>ASSESSMENT</b></p> <ul style="list-style-type: none"> <li>Year 13 A2 School Mock Examinations</li> </ul> <p><b>PAG 11</b></p>	<p><b>ASSESSMENT</b></p> <p><b>Final Examinations</b></p> <ul style="list-style-type: none"> <li>Biological processes 100 marks (2 hour 15 minutes)</li> <li>Biological diversity 100 marks (2 hour 15 minutes)</li> <li>Unified biology (1 hour 30 minutes)</li> </ul>