

# Year 10 Biology | Term 2

## Key Question: How do animals and plants function?

**Topic Overview:** This term students will be learning about how the body responds to pathogens including the use of vaccinations. Students will also learn how new medicines are released and tested before being released to the public to use. Students will then start the bioenergetic topic in which they will look at photosynthesis and the limiting factors that prevent photosynthesis from happening.

	Lesson Exploration	Knowledge & Skills	Key Words
Week 1: Lesson 1	How does the body respond to infection?	<ul style="list-style-type: none"> <li>Students should be able to describe the non-specific defence systems of the human body against pathogens, including the: • skin • nose • trachea and bronchi • stomach.</li> <li>Students should be able to explain the role of the immune system in the defence against disease.</li> <li>Students should be able to explain the use of antibiotics and other medicines in treating disease</li> </ul>	<ul style="list-style-type: none"> <li>Vaccinations</li> <li>White blood cells</li> <li>Phagocytosis</li> <li>Antitoxins</li> <li>Endothermic</li> <li>Exothermic</li> <li>Photosynthesis</li> </ul>
Week 2: Lesson 1	How do vaccinations work?	<ul style="list-style-type: none"> <li>Students should be able to explain how vaccination will prevent illness in an individual, and how the spread of pathogens can be reduced by immunising a large proportion of the population.</li> </ul>	<ul style="list-style-type: none"> <li>Oxygen</li> <li>Glucose</li> <li>Carbon Dioxide</li> </ul>
Week 3: Lesson 1	How are new medicines and antibiotics developed?	<ul style="list-style-type: none"> <li>Students should be able to describe the process of discovery and development of potential new medicines, including preclinical and clinical testing.</li> </ul>	<ul style="list-style-type: none"> <li>Rate</li> <li>Temperature</li> <li>Light intensity</li> </ul>
Week 4: Lesson 1	Revision & Assessment	<ul style="list-style-type: none"> <li>Students should be able to complete a 60 Minute Assessment on all of the B3</li> </ul>	<ul style="list-style-type: none"> <li>Concentration</li> <li>Limiting Factor</li> </ul>
Week 5: Lesson 1	What are the limiting factors of photosynthesis?	<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>describe photosynthesis as an endothermic reaction in which energy is transferred from the environment to the chloroplasts by light.</li> </ul>	

		<ul style="list-style-type: none"> <li>• explain the effects of temperature, light intensity, carbon dioxide concentration, and the amount of chlorophyll on the rate of photosynthesis.</li> <li>• extract and interpret graphs of photosynthesis rate involving one limiting factor</li> <li>• (HT only) explain graphs of photosynthesis rate involving two or three factors and decide which is the limiting factor</li> </ul>	<ul style="list-style-type: none"> <li>• Aerobic Respiration</li> <li>• Anaerobic Respiration</li> </ul>
Week 6: Lesson 1	Try Now Lesson	<ul style="list-style-type: none"> <li>• Students should be able to close the gaps in their knowledge from the most recent assessment.</li> </ul>	

Literacy Links	Numeracy Links
<p><b><u>Reading list for the course:</u></b></p> <p><b><u>Books:</u></b></p> <ul style="list-style-type: none"> <li>• Robert Sneddon – Living Things: Flower</li> <li>• Denise Walker – Cells and Life Processes</li> </ul> <p><b><u>Websites:</u></b></p> <ul style="list-style-type: none"> <li>• Young Scientist Journal - <a href="http://www.butrousfoundation.com/ysjournal">www.butrousfoundation.com/ysjournal</a></li> <li>• School Science - <a href="http://www.schoolscience.co.uk">www.schoolscience.co.uk</a></li> <li>• Wellcome Trust: <a href="http://www.wellcome.ac.uk/">www.wellcome.ac.uk/</a></li> <li>• Human Genome Project: <a href="http://genome.wellcome.ac.uk/">http://genome.wellcome.ac.uk/</a></li> <li>• Educational resources at the Natural History Museum:</li> <li>• <a href="http://www.nhm.ac.uk/education/index.html">www.nhm.ac.uk/education/index.html</a></li> </ul>	<ul style="list-style-type: none"> <li>• Convert from heart rate and breathing rate data between seconds and minutes.</li> <li>• use of data about the functioning of the nervous system.</li> </ul>