

## Year 9

All numbered points refer to specification points

Timing	Unit Title	Key Question	Knowledge	Assessing understanding
Autumn	1.1 Cells and cell structure 1.2 Cell division and reproduction	How are cells organised	<p>1.1.1 Eukaryotes and prokaryotes</p> <p>1.1.2 Animal and plant cells</p> <p>1.1.3 Cell specialisation</p> <p>1.1.4 Cell differentiation</p> <p>1.1.5 Microscopy</p> <p>1.1.6 Culturing microorganisms (biology only)</p> <p>1.2.1 Chromosomes</p> <p>1.2.2 Mitosis and the cell cycle</p> <p>1.2.3 Stem cells. Limited to: Stem cells : A stem cell is an undifferentiated cell of an organism which is capable of giving rise to many more cells of the same type, and from which certain other cells can arise from differentiation. Students should be able to describe the function of stem cells in embryos, in adult animals and in the meristems in plants.</p> <p>6.1.4 DNA and the genome</p> <p>6.1.5 DNA structure (biology only)</p>	<p>How understanding is assessed</p> <p><b>Students will be assessed on their ability to:</b></p> <ul style="list-style-type: none"> <li>● Recall the knowledge covered</li> <li>● Interpret graphical and experimental data,</li> <li>● Make connections between different areas of understanding, explain the Biological processes covered.</li> </ul> <p>Assessment will take the form of written questions in a test.</p> <p><b>Students will also be assessed on their ability to effectively carry out the following :</b></p> <p><u>Required practical 1</u> : use of a light microscope to observe, draw and label a selection of plant and animal cells</p> <p><u>Required Practical 2:</u> Aseptic techniques (streaking method)</p> <p>Skills Graphical interpretation Making connections Explanations</p>

				Description Scientific literacy Use of microscope Planning and carrying out an investigation Graph drawing Data analysis.
Spring 1	1.3 Cell movement	How do substances move into and out of cells ?	<ul style="list-style-type: none"> <li>● 1.3.1 Diffusion</li> <li>● 1.3.2 Osmosis</li> <li>● 1.3.3 Active transport</li> </ul>	<u>Required practical 3:</u> investigating the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue.
Spring 2	4.2 respiration and 4.1 photosynthesis	How organisms get their energy from the sun and transfer that energy into useable forms	4.4.1.1 Photosynthetic reaction 4.4.1.2 Rate of photosynthesis 4.4.1.3 Uses of glucose from photosynthesis 4.4.2.1 Aerobic and anaerobic respiration 4.4.2.2 Response to exercise 4.4.2.3 Metabolism	How understanding is assessed <b>Students will be assessed on their ability to:</b> <ul style="list-style-type: none"> <li>● Recall the knowledge covered</li> <li>● Interpret graphical and experimental data,</li> <li>● Make connections between different areas of understanding, explain the Biological processes covered.</li> </ul> Assessment will take the form of written questions in a test.  <b>Students will also be assessed on their ability to effectively carry out the following :</b>

				<p><u>Required practical 6</u> : investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such a pond weed</p> <p><b>Skills</b> Graphical interpretation Making connections Explanations Description Scientific literacy Planning and carrying out an investigation Graph drawing Data analysis.</p>
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