

### Year 10 BIOLOGY Curriculum Map

Term	Topic/Unit title	Essential knowledge & skills (what students should <i>know, understand and be able to do</i> by the end of the unit/topic)
<b>Autumn 1 &amp; Autumn 2</b>	4.1 Cell biology	<p>Specification  <a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>4.1 Cell biology  including:  4.1.1 Cell structure (excluding 4.1.1.6 which is taught with microbes)  4.1.2 Cell division  4.1.3 Transport in cells</p> <p>Required practical activity 1: use a light microscope to observe, draw and label a selection of plant and animal cells. A magnification scale must be included.</p> <p>Required practical activity 3: investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue.</p>
<b>Autumn 2</b>	Finish 4.1 Cell biology	<p>Specification  <a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p>

	<p>4.2 Organisation</p>	<p>4.2 Organisation</p> <p>including:</p> <ul style="list-style-type: none"><li>4.2.1 Principles of organisation</li><li>4.2.2.1 The human digestive system</li><li>4.2.2.2 The heart and blood vessels</li><li>4.2.2.3 Blood</li><li>4.2.2.4 Coronary heart disease: a non-communicable disease</li><li>4.2.2.5 Health issues</li><li>4.2.2.6 The effect of lifestyle on some non-communicable diseases</li><li>4.2.2.7 Cancer</li></ul> <p>Required practical activity 4: use qualitative reagents to test for a range of carbohydrates, lipids and proteins.</p> <p>To include: Benedict's test for sugars; iodine test for starch; and Biuret reagent for protein.</p> <p>Required practical activity 5: investigate the effect of pH on the rate of reaction of amylase enzyme.</p>
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<b>Spring 1</b>	4.3 Infection and response	<p>Specification</p> <p><a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>4.3 Infection and response</p> <p>including:</p> <ul style="list-style-type: none"><li>4.1.1.6 Culturing microorganisms</li><li>4.3.1.1 Communicable (infectious) diseases</li><li>4.3.1.2 Viral diseases (measles and HIV only)</li><li>4.3.1.3 Bacterial diseases</li><li>4.3.1.5 Protist diseases (malaria)</li><li>4.3.1.6 Human defence systems</li><li>4.3.1.7 Vaccination</li><li>4.3.1.8 Antibiotics and painkillers</li><li>4.3.1.9 Discovery and development of drugs</li><li>4.3.2 Monoclonal antibodies (HT only)</li></ul> <p>Required practical activity 2: investigate the effect of antiseptics or antibiotics on bacterial growth using agar plates and measuring zones of inhibition.</p>
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<p><b>Spring 2</b></p>	<p>Finish 4.3 Infection and response</p> <p>Plant biology</p> <p>4.2 plant tissues and organs</p> <p>4.3 plant disease</p> <p>4.4. bioenergetics</p>	<p>Specification</p> <p><a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>Plant biology</p> <p>including:</p> <p>4.2.3.1 Plant tissues</p> <p>4.2.3.2 Plant organ system</p> <p>4.4.1 Photosynthesis</p> <p>4.3.1.2 Viral diseases (tobacco mosaic virus only)</p> <p>4.3.1.4 Fungal diseases (rose black spot)</p> <p>4.3.3.1 Detection and identification of plant diseases</p> <p>4.3.3.2 Plant defence responses</p> <p>Required practical activity 6: investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed.</p>
<p><b>Summer 1</b></p>	<p>4.4. Bioenergetics ctd.</p>	<p>Specification</p> <p><a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p>

	4.7 Ecology	<p>4.4.2.1 Aerobic and anaerobic respiration</p> <p>4.4.2.2 Response to exercise</p> <p>4.4.2.3 Metabolism</p> <p>4.7.2.3 Decomposition (biology only)</p> <p>4.7.2.2 How materials are cycled</p> <p>Required practical activity 10: investigate the effect of temperature on the rate of decay of fresh milk by measuring pH change.</p>
<b>Summer 2</b>	4.7 Ecology ctd.	<p>Specification</p> <p><a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>4.7.2.4 Impact of environmental change (HT only)</p> <p>4.7.3.1 Biodiversity</p> <p>4.7.3.2 Waste management</p> <p>4.7.3.3 Land use</p> <p>4.7.3.4 Deforestation</p> <p>4.7.3.5 Global warming</p> <p>4.7.3.6 Maintaining biodiversity</p>

	4.5.4 Plant hormones	<p>4.7.5.1 Factors affecting food security</p> <p>4.7.5.2 Farming techniques</p> <p>4.7.5.3 Sustainable fisheries</p> <p>4.7.5.4 Role of biotechnology</p> <p>4.5.4 Plant hormones</p> <p>Required practical activity 8: investigate the effect of light or gravity on the growth of newly germinated seedlings.</p> <p>Record results as both length measurements and as careful, labelled biological drawings to show the effects.</p>
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### Year 11 BIOLOGY Curriculum Map

Term	Topic/Unit title	Essential knowledge & skills (what students should <i>know, understand and be able to do</i> by the end of the unit/topic)
Autumn 1+2	4.5 Homeostasis & Response	<p>Specification  <a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>4.5 Homeostasis &amp; Response  including:  4.5.1 Homeostasis  4.5.2.1 Structure and function of human nervous system  4.5.2.2 The brain  4.5.2.4 Control of body temperature  4.5.3.1 Human endocrine system  4.5.3.2 Control of blood glucose concentration  4.5.3.3 Maintaining water and nitrogen balance in the body  4.5.3.4 Hormones in human reproduction  4.5.3.5 Contraception  4.5.3.6 The use of hormones to treat infertility (HT only)  4.5.3.7 Negative feedback (HT only)</p>

	<p>PPE fortnight</p> <p>4.6 Inheritance, variation and evolution</p>	<p>Required practical activity 7: plan and carry out an investigation into the effect of a factor on human reaction time.</p> <p>4.6.1.1 Sexual and asexual reproduction</p> <p>4.6.1.2 Meiosis</p> <p>4.6.1.3 Advantages and disadvantages of sexual and asexual reproduction (biology only)</p>
<p><b>Spring 1</b></p>	<p>4.6 Inheritance, variation and evolution</p>	<p>Specification</p> <p><a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>4.6.1.4 DNA and the genome</p> <p>4.6.1.5 DNA structure</p> <p>4.6.1.7 Inherited disorders</p> <p>4.6.1.8 Sex determination</p> <p>4.6.3.3 The understanding of genetics</p> <p>4.6.2.4 Genetic engineering</p> <p>4.6.2.5 Cloning</p>



<p><b>Spring 2</b></p>	<p>4.6 Inheritance, variation and evolution</p>	<p>Specification</p> <p><a href="https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF">https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF</a></p> <p>4.6.2.1 Variation</p> <p>4.6.2.2 Evolution</p> <p>4.6.2.3 Selective breeding</p> <p>4.6.3.1 Theory of evolution</p> <p>4.6.3.2 Speciation</p> <p>4.6.3.4 Evidence for evolution</p> <p>4.6.3.5 Fossils</p> <p>4.6.3.6 Extinction</p> <p>4.6.3.7 Resistant bacteria</p> <p>4.6.4 Classification of living organisms</p> <p>4.5.2.3 The eye (taught here, as students will now have done ray diagrams in physics)</p>
<p><b>Summer 1</b></p>	<p><b>Targeted revision</b></p> <p><b>Past paper exam practice &amp; exam technique</b></p>	

