

# AQA GCSE Biology: Higher tier

Advance Information of Assessed Content 2022

Link to specification:

[GCSE Biology Specification](#)

Link to advance information document:

[AQA Advanced information - GCSE Biology](#)

# Triple Biology Paper 1

These specification points will be the **major focus** of this paper.

**Exam date: 17<sup>th</sup> May**

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Spec point	Concepts	CGP Biology revision guide pages	Bitesize	YouTube
<b>4.1.1</b> Cell Structure	<ul style="list-style-type: none"> <li>- Difference between prokaryotic and eukaryotic cells</li> <li>- Comparison of plant cells and animal cells</li> <li>- Function of organelles</li> <li>- Cell differentiation and specialised plant cells and animal cells</li> </ul>	11, 14	<a href="https://www.bbc.co.uk/bitesize/guides/z84jtv4/revision/1">https://www.bbc.co.uk/bitesize/guides/z84jtv4/revision/1</a>	<a href="#">Prokaryotic and eukaryotic cells</a>  <a href="#">Animal cells</a>  <a href="#">Plant cells</a>
<b>Required practical 1:</b> use of light microscope to observe cells	<ul style="list-style-type: none"> <li>- How to prepare slides</li> <li>-How to use the microscope to improve field of view, clarify, change magnification</li> <li>- Microscopy calculations</li> <li>- Unit conversions (mm, micrometres etc)</li> </ul>	12-13	<a href="https://www.bbc.co.uk/bitesize/guides/z84jtv4/revision/1">https://www.bbc.co.uk/bitesize/guides/z84jtv4/revision/1</a>	<a href="#">Required practical - Use of microscopes</a>  <a href="#">Microscopy</a>  <a href="#">Orders of magnitude</a>
<b>4.1.3</b> Transport in cells	<ul style="list-style-type: none"> <li>- Diffusion</li> <li>- Factors affecting the rate of diffusion</li> <li>- Osmosis</li> <li>- Active transport</li> </ul>	20-22	<a href="https://www.bbc.co.uk/bitesize/guides/zs63tv4/revision/4">https://www.bbc.co.uk/bitesize/guides/zs63tv4/revision/4</a>	<a href="#">Osmosis</a>  <a href="#">Diffusion</a>  <a href="#">Active transport</a>
<b>Required practical 3:</b> Investigate the effect of a range of concentrations of salt solution on the mass of plant tissue	<ul style="list-style-type: none"> <li>- Calculate rate of water uptake</li> <li>- Identify independent, dependent and control variables</li> <li>- Calculate percentage change in mass</li> <li>- Interpret graph to find salt/ sugar concentration in potato</li> </ul>	21	<a href="https://www.bbc.co.uk/bitesize/guides/zs63tv4/revision/5">https://www.bbc.co.uk/bitesize/guides/zs63tv4/revision/5</a>	<a href="#">Required practical link</a>

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<b>4.2.2</b> Animal tissues, organs and organ systems	<ul style="list-style-type: none"> <li>- Functions of tissues and organs in the digestive system</li> <li>-Digestive enzymes</li> <li>-Functions of tissues and organs in the circulatory system</li> <li>-Pathway of blood through the heart</li> <li>-adaptations of components of the blood</li> <li>-risk factors of non-communicable diseases</li> </ul>	28, 30, 31, 33, 34, 35, 37, 38 - 40	<a href="#">Digestion</a>  <a href="#">Animal transport systems</a>	<a href="https://www.youtube.com/watch?v=4ui4oSHHnzA">https://www.youtube.com/watch?v=4ui4oSHHnzA</a>  <a href="https://www.youtube.com/watch?v=VLK2wANjQm0">https://www.youtube.com/watch?v=VLK2wANjQm0</a>  <a href="https://www.youtube.com/watch?v=bpYaKM2hVFY">https://www.youtube.com/watch?v=bpYaKM2hVFY</a>
<b>Required practical 4:</b> Use qualitative reagents to test for a range of carbohydrates, lipids and proteins	<ul style="list-style-type: none"> <li>- Reagents used to test for sugars, starch, proteins and lipids</li> <li>- Positive result for each food test</li> <li>- Conditions required to carry out food test</li> </ul>	32	<a href="#">Food tests</a>	<a href="#">Food tests – video summary</a>  <a href="#">Food tests - detailed methods</a>
<b>4.2.3</b> Plant tissues, organs and systems	<ul style="list-style-type: none"> <li>- cross section of a leaf</li> <li>- functions and adaptations of xylem and phloem</li> <li>- transpiration</li> <li>- translocation</li> </ul>	42 - 44	<a href="#">Plant organisation</a>	<a href="#">Plant organisation</a>  <a href="#">Transpiration</a>  <a href="#">Plant cell specialisations</a>

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<b>4.3.1</b> Communicable Diseases	-definition and examples of pathogen -how viruses and bacteria make us ill -examples of diseases caused by each type of pathogen -human defence mechanisms -what happens in a vaccine -comparing antibody production after active and passive immunity	46 – 50	<a href="https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/1">https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/1</a>	<a href="https://www.youtube.com/watch?v=rAJGnS_ktk4">https://www.youtube.com/watch?v=rAJGnS_ktk4</a>
<b>4.3.2</b> Monoclonal antibodies	- Describe what a monoclonal antibody is - Describe how monoclonal antibodies are produced - Describe how monoclonal antibodies can be used	53 – 54	<a href="https://www.bbc.co.uk/bitesize/guides/zt8t3k7/revision/1">https://www.bbc.co.uk/bitesize/guides/zt8t3k7/revision/1</a>	<a href="#">Monoclonal antibodies</a> <a href="#">Uses of monoclonal antibodies</a>

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Spec point	CGP Biology Revision Guide Pages
4.2.2.3 Blood	36
4.2.2.7 Cancer	41
4.3.1.8 Antibiotics and painkillers	51
4.3.1.9 Discovery and the development of drugs	52
4.4.2.2 Response to exercise	63

# Triple Biology Paper 2

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**Exam date: 15<sup>th</sup> June**

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
<b>4.5.2</b> The human nervous system	<ul style="list-style-type: none"> <li>- Function of the NS</li> <li>- Control of body temperature</li> <li>- Response to high/ low temperatures</li> </ul>	72	<a href="#">Controlling body temperature.</a>	<a href="https://www.youtube.com/watch?v=WoMPARSQPZw">https://www.youtube.com/watch?v=WoMPARSQPZw</a>
<b>4.5.3</b> Hormonal control in humans	<ul style="list-style-type: none"> <li>- The endocrine system</li> <li>- Function of hormones within the endocrine system</li> <li>- Control of blood glucose</li> <li>- Diabetes</li> <li>- Kidneys and the role of ADH</li> <li>- Adrenaline and thyroxine</li> </ul>	73 – 76, 80	<a href="https://www.bbc.co.uk/bitesize/guides/zttqfcw/revision/1">https://www.bbc.co.uk/bitesize/guides/zttqfcw/revision/1</a>	<a href="#">Endocrine system</a>
<b>4.5.4</b> Plant hormones	<ul style="list-style-type: none"> <li>- Site of auxin production</li> <li>- Role of auxin in producing phototropism / gravitropism</li> </ul>	81	<a href="https://www.bbc.co.uk/bitesize/guides/zc6cqhv/revision/1">https://www.bbc.co.uk/bitesize/guides/zc6cqhv/revision/1</a>	<a href="https://www.youtube.com/watch?v=Bf5WKEMB5o">https://www.youtube.com/watch?v=Bf5WKEMB5o</a>
<b>Required practical 8</b> – Investigate the effect of light on the growth of newly germinated seedlings	<ul style="list-style-type: none"> <li>- identify independent, dependent and control variables</li> <li>- Describe how variables can be controlled</li> </ul>	81	<a href="https://www.bbc.co.uk/bitesize/guides/zc6cqhv/revision/3">https://www.bbc.co.uk/bitesize/guides/zc6cqhv/revision/3</a>	<a href="https://www.youtube.com/watch?v=fEo21LbnJJM">https://www.youtube.com/watch?v=fEo21LbnJJM</a>

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Spec point	Concepts	CGP revision guide pages	Bitesize	YouTube
<b>4.6.1</b> Reproduction	<ul style="list-style-type: none"> <li>- Sexual and asexual reproduction</li> <li>- Gametes</li> <li>- Meiosis</li> </ul>	87-89	<a href="https://www.bbc.co.uk/bitesize/guides/z9pkmsg/revision/1">https://www.bbc.co.uk/bitesize/guides/z9pkmsg/revision/1</a>	<a href="https://www.youtube.com/watch?v=Fh9b6a-3DLQ">https://www.youtube.com/watch?v=Fh9b6a-3DLQ</a>
<b>4.7.2</b> Organisation of an ecosystem	<ul style="list-style-type: none"> <li>-interpret food chains and webs</li> <li>-identify producers, consumers, predators and prey from food chains and webs</li> <li>-describe the carbon and water cycles</li> </ul>	86, 89-90	<a href="https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/1">https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/1</a>	<a href="https://www.youtube.com/watch?v=dRFQ8rZCK6Q">https://www.youtube.com/watch?v=dRFQ8rZCK6Q</a>  <a href="https://www.youtube.com/watch?v=urzpnjwazV0">https://www.youtube.com/watch?v=urzpnjwazV0</a>
<b>Required Practical 7:</b> Measure the population size of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species	<ul style="list-style-type: none"> <li>-Using transects and quadrats are used by ecologists to determine the distribution and abundance of species in an ecosystem.</li> <li>-Understand the terms mean, mode and median</li> <li>-Calculate arithmetic means</li> </ul>	110-111	<a href="https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/3">https://www.bbc.co.uk/bitesize/guides/zqskv9q/revision/3</a>	<a href="https://www.youtube.com/watch?v=2MW6nwf80XM">https://www.youtube.com/watch?v=2MW6nwf80XM</a>  <a href="https://www.youtube.com/watch?v=RhMOCxXcDrQ">https://www.youtube.com/watch?v=RhMOCxXcDrQ</a>  <a href="https://www.youtube.com/watch?v=yLHz2Ea10Mg&amp;t=2s">https://www.youtube.com/watch?v=yLHz2Ea10Mg&amp;t=2s</a>

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Spec point	CGP Revision Guide Pages
<b>Topic 5: Homeostasis and response</b>	
4.5.2.1 Structure and function	66 – 68
4.5.2.2 The brain	69
4.5.2.3 The eye	70-71
4.5.2.3 Hormones in human reproduction	77- 79
4.5.3.5 Contraception	78
4.5.3.6 The use of hormones to treat infertility	78
4.5.3.7 Negative feedback	65
4.5.4.2 Uses of plant hormones	82
<b>Topic 6: Inheritance, variation and evolution</b>	
4.6.1.3 Advantages/ Disadvantages of sexual and asexual reproduction	89 (top half)
4.6.1.8 Sex determination	90
4.6.2 Variation and evolution	95-97
4.6.3 The development of understanding of genetics and evolution	94
4.6.4 Classification of living organisms	104

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Spec point	CGP Revision Guide Pages
<b>Topic 7: Ecology</b>	
4.7.1.4 Adaptations	108
4.7.2.4 Impact of environmental change	112
4.7.3.1 Biodiversity	116
4.7.3.4 Deforestation	118
4.7.4.1 Trophic levels	120
4.7.4.2 Pyramids of Biomass	121
4.7.5.3 Sustainable fisheries	123 (middle section)
4.7.5.4 Role of biotechnology	124