

AQA GCSE Biology: Foundation tier

Advance Information of Assessed Content 2022

Link to specification:

[GCSE Biology Specification](#)

Link to advance information document:

[AQA Advanced information - GCSE Biology](#)

**AQA GCSE Biology:
Foundation Tier
Paper 1**

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

Exam date: 17th May

All other specification points from B1, other those on these pages that are not explicitly omitted, **may still be assessed** in multiple choice questions/linked to a previous answer, so cannot be completely ignored in your revision

Spec point	Concepts	Bitesize	YouTube
4.1.1 Cell structure	<ul style="list-style-type: none"> understand the difference between prokaryotic and eukaryotic cells. explain how the main sub-cellular structures, including the nucleus, cell membranes, mitochondria, chloroplasts in plant cells and plasmids in bacterial cells are related to their functions. be able to use estimations and explain when they should be used to judge the relative size or area of sub-cellular structures. explain how the structure of different types of cell relate to their function in a tissue, an organ or organ system, or the whole organism. understand how microscopy techniques have developed over time explain how electron microscopy has increased understanding of sub-cellular structures. be able to carry out calculations involving magnification, real size and image size using the formula: $\text{magnification} = \frac{\text{size of image}}{\text{size of real object}}$ be able to describe how to prepare an uncontaminated culture using aseptic technique. 	Cell measurement - Cell structure - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize	Cells How to use a Microscope Cells Biology FuseSchool – YouTube Culturing Microorganisms Part 1 Cells Biology FuseSchool – YouTube Culturing Microorganisms Part 2 Cells Biology FuseSchool – YouTube
Required practical activity 1: how a light microscope is used to observe plant cells.	<ul style="list-style-type: none"> use appropriate apparatus to record length and area use a light microscope to observe, draw and label a selection of plant and animal cells. A magnification scale must be included. use estimations to judge the relative size or area of sub-cellular structures 	https://www.bbc.co.uk/bitesize/guides/z84jtv4/revision/1	Required practical - Use of microscopes Microscopy Orders of magnitude

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Spec point	Concepts	Bitesize	YouTube
4.1.3 Transport in cells	<ul style="list-style-type: none"> • be able to explain how different factors affect the rate of diffusion. • be able to calculate and compare surface area to volume ratios. • be able to explain the need for exchange surfaces and a transport system in multicellular organisms in terms of surface area to volume ratio. • be able to explain how the small intestine and lungs in mammals, gills in fish, and the roots and leaves in plants, are adapted for exchanging materials. • Be able to describe the process of osmosis • Be able to describe the process of active transport 	Diffusion - Transport in cells - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize	Transport in Cells: Diffusion and Osmosis Cells Biology FuseSchool – YouTube https://www.youtube.com/watch?v=eDeCgTRFCbA
Required practical activity 3: investigate the effect of a range of concentrations of salt solution on the mass of plant tissue.	<ul style="list-style-type: none"> • Plan an investigation into the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue. • measure the rate of osmosis by water uptake • use appropriate apparatus to record mass and time • Identify hazards and risks • Evaluate methods and suggest improvements • use percentages and calculate percentage gain and loss of mass of plant tissue • Find mean mass of plant tissue 	https://www.bbc.co.uk/bitesize/guides/zs63tv4/revision/5	https://www.youtube.com/watch?v=oiexYuQm_xE

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Spec point	Concepts	Bitesize	YouTube
4.2.2 Animal tissues, organs and organ systems	<ul style="list-style-type: none"> able to describe the process of digestion and the role of digestive enzymes. be able to describe the structure and function of the heart and blood vessels. be able to describe the causes and treatments for heart disease. be able to describe the relationship between health and disease and the interactions between different types of disease. be able to: <ul style="list-style-type: none"> discuss the human and financial cost of these non-communicable diseases to an individual, a local community, a nation or globally explain the effect of lifestyle factors including diet, alcohol and smoking on the incidence of non-communicable diseases at local, national and global levels. 	<p>Molecules of life - Animal organisation - digestion - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p> <p>The circulatory system - Animal organisation - transport systems - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p> <p>Different types of disease - Non-communicable diseases - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p>	<p>Digestion - What Is It? Physiology Biology FuseSchool – YouTube</p> <p>Digestive enzymes Physiology Biology FuseSchool – YouTube</p> <p>https://www.youtube.com/watch?v=AGINnt2K6zE</p>
Required practical activity 4: qualitative reagents to test for a range of carbohydrates, lipids and proteins.	<ul style="list-style-type: none"> use qualitative reagents to test for a range of carbohydrates, lipids and proteins. To include: Benedict’s test for sugars; iodine test for starch; and Biuret reagent for protein. Identify risks and hazards in methods 	Food tests	https://www.youtube.com/watch?v=akMLGbNA0gE

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Spec point	Concepts	Bitesize	YouTube
4.3.1 Communicable diseases	<ul style="list-style-type: none"> • be able to explain how diseases caused by viruses, bacteria, protists and fungi are spread in animals and plants. • be able to explain how the spread of diseases can be reduced or prevented. • Be able to describe the symptoms and methods of transmission of measles, HIV and TMV. • Be able to describe the symptoms and methods of transmission of <i>Salmonella</i> and Gonorrhoea. • Be able to describe the symptoms and methods of transmission of rose black spot. • be able to describe the non-specific defence systems of the human body against pathogens. • be able to explain the role of the immune system in the defence against disease. • 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. • be able to explain the use of antibiotics and other medicines in treating disease. • be able to describe the process of discovery and development of potential new medicines, including preclinical and clinical testing. 	<p>Pathogens - Communicable diseases - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p> <p>Vaccinations - Treating, curing and preventing disease - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p>	<p>AQA Communicable Diseases - GCSE Biology Revision - SCIENCE WITH HAZEL – YouTube</p> <p>White Blood Cells and Vaccines - GCSE Biology Revision - SCIENCE WITH HAZEL – YouTube</p>

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Spec point	Concepts	Bitesize	YouTube
4.4.1 Photosynthesis	<ul style="list-style-type: none"> be able to describe photosynthesis. be able to explain the effects of temperature, light intensity, carbon dioxide concentration, and the amount of chlorophyll on the rate of photosynthesis. 	Photosynthesis - Photosynthesis - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize	Photosynthesis - GCSE Biology Revision - SCIENCE WITH HAZEL - YouTube
Required practical activity 6: investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed.	<ul style="list-style-type: none"> Plan an investigation into the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed. use a thermometer to measure and control temperature of water bath. safe and ethical use and disposal of living pondweed to measure physiological functions and responses to light measuring rate of reaction by oxygen gas production translate numeric data into graphical form then plot and draw appropriate graphs Use inverse proportion: the inverse square law and light intensity in the context of photosynthesis. 	Required practical activity - Photosynthesis - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize	https://www.youtube.com/watch?v=id0aO_OdFwA

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Spec point
4.1.1.4 Cell differentiation 4.2.1 Principles of organisation 4.2.2.3 Blood 4.2.2.7 Cancer 4.3.1.5 Protist diseases 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

AQA GCSE Biology:
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Paper 2

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Exam date: 15th June

All other specification points from B2, other those on these pages that are not explicitly omitted, **may still be assessed** in multiple choice questions/linked to a previous answer, so cannot be completely ignored in your revision

Spec point	Concepts	Bitesize	YouTube
4.5.2 The human nervous system	<ul style="list-style-type: none"> be able to explain how the structure of the nervous system is adapted to its functions. 	Homeostasis - Coordination and control - The nervous system - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize	The Nervous System 9-1 GCSE and IGCSE Biology AQA, Edexcel, CIE, OCR, WJEC - YouTube
Required practical activity 7:	<ul style="list-style-type: none"> plan and carry out an investigation into the effect of a factor on human reaction time. selecting appropriate apparatus and techniques 	Required practical activity 7 - BBC Bitesize	https://www.youtube.com/watch?v=Ws5qVXYHRnQ
4.5.3 Hormonal control in humans	<ul style="list-style-type: none"> be able to describe the principles of hormonal coordination and control by the human endocrine system. be able to explain how insulin controls blood glucose (sugar) levels in the body. be able to describe the roles of hormones in human reproduction, including the menstrual cycle. be able to evaluate the different hormonal and nonhormonal methods of contraception. 	Hormones and nerves - BBC Bitesize hormones in reproduction - BBC Bitesize	https://www.youtube.com/watch?v=IRJE8c3ghRE https://www.youtube.com/watch?v=y9Bdi4dnSlg The Menstrual Cycle 9-1 GCSE and IGCSE Biology AQA, Edexcel, CIE, OCR, WJEC - YouTube
4.5.4 Plant hormones	<ul style="list-style-type: none"> Understand how hormones to coordinate and control growth and responses to light (phototropism) and gravity (gravitropism or geotropism). 	Auxins and phototropism - Plant hormones - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize	Plant Hormones: Tropisms Plants Biology FuseSchool - YouTube
Required practical activity 8:	<ul style="list-style-type: none"> investigate the effect of light or gravity on the growth of newly germinated seedlings. Safe and ethical use of plants suggest improvements and further investigations. 	Required practical activity 8 - BBC Bitesize	GCSE Science Revision Biology "Required Practical 8: Plant Responses" (Triple) - YouTube

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Spec point	Concepts	Bitesize	YouTube
4.6.1 Reproduction	<ul style="list-style-type: none"> understand that meiosis leads to non-identical cells being formed while mitosis leads to identical cells being formed. understand the differences between sexual and asexual reproduction. be able to explain how meiosis halves the number of chromosomes in gametes and fertilisation restores the full number of chromosomes. be able to describe the structure of DNA and define genome. Understand the language and mechanism of genetic inheritance be able to complete a Punnett square diagram and extract and interpret information from genetic crosses and family trees. Understand the genetic diseases polydactyly and cystic fibrosis. 	<p>Asexual reproduction - Reproduction, the genome and gene expression - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p> <p>Genetic inheritance - Genetic inheritance - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p>	<p>Meiosis Genetics Biology FuseSchool – YouTube</p> <p>Genotype, Phenotype & Punnett Squares 9-1 GCSE and IGCSE Biology AQA, Edexcel, CIE, OCR, WJEC – YouTube</p> <p>Inherited Genetic Disorders Genetics Biology FuseSchool – YouTube</p>
4.6.3 The development of understanding of genetics and evolution	<ul style="list-style-type: none"> be able to describe the evidence for evolution including fossils and antibiotic resistance in bacteria. Understand how fossils are formed and how they provide evidence for evolution. be able to describe factors which may contribute to the extinction of a species. 	<p>Principles of evolution by natural selection - Evolution - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p>	<p>Fossils & Evidence For Evolution Evolution Biology FuseSchool – YouTube</p> <p>https://www.youtube.com/watch?v=jphrpR9ffKA</p>
Required practical activity 9:	<ul style="list-style-type: none"> 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. understand the terms mean, mode and median 	<p>Required practical - measuring population size in a habitat - Organisation of an ecosystem - AQA - GCSE Biology (Single Science) Revision - AQA - BBC Bitesize</p>	<p>https://www.youtube.com/watch?v=RhMOCxXcDrQ</p>

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points will
not be
assessed on
this paper.

Spec point
4.5.2.2 The brain
4.5.2.3 The eye
4.5.3.3 Maintaining water and nitrogen balance in the body
4.6.1.3 Advantages and disadvantages of sexual and asexual reproduction
4.6.1.5 DNA structure
4.6.1.8 Sex determination
4.6.2 Variation and evolution
4.6.3.1 Theory of evolution
4.6.3.2 Speciation
4.6.3.3 The understanding of genetics
4.6.3.7 Resistant bacteria
4.7.1.4 Adaptations
4.7.2.2 How materials are cycled
4.7.2.3 Decomposition
4.7.3.1 Biodiversity
4.7.3.3 Land use
4.7.3.4 Deforestation
4.7.3.5 Global warming
4.7.3.6 Maintaining biodiversity
4.7.4 Trophic levels in an ecosystem
4.7.5 Food production