Exam Board:	AQA
Subject:	Combined Science - Biology
Topics:	**<u>Paper 1 - 70 marks (1hr 15min)</u>** Cell Biology; Organisation; Infection & Response; Bioenergetics **<u>Paper 2 - 70 marks (1hr 15min)</u>** Homeostasis & Response; Inheritance, Variation & Evolution; Ecology

Exam Information, guidance and hints

Command words:

- Complete - Fill in gaps/add labels
- Give - Recall a simple fact
- Draw - Draw a symbol, diagram or graph
- Name - Only a short answer is required, not an explanation or a description. Often it can be answered with a single word, phrase or sentence.
- Describe - Give details about an event, idea or a process
- Explain - Give reasons for an event, idea or process (use because/so)
- Compare - Identify how things are similar/different
- Suggest - Use your own knowledge in an unfamiliar context
- Plan - Write a method
- Calculate - Use numbers in a formula

Hints/tips:

- If you are given the equation, ensure you are using it correctly.
- When plotting a graph make sure you are using a pencil & ruler. Be accurate when plotting the points / drawing the bars.

Online Resources

- Cognito past papers
- Required Practical Videos from Malmsbury Science (Youtube)

Paper 1 - Foundation Example Papers and Markschemes			**Paper 1 - Higher Example Papers and Markschemes**		
2018 F Paper	Annotated P1	2018 MS	2018 H paper	Annotated P1	2018 MS
2019 F Paper	Annotated P1	2019 MS	2019 H Paper	Annotated P1	2019 MS
2020 F Paper	Annotated P1	2020 MS	2020 H Paper	Annotated P1	2020 MS
Paper 2 - Foundation Example Papers and Markschemes			**Paper 2 - Higher Example Papers and Markschemes**		
2018 F Paper	Annotated P2	2018 MS	2018 H paper	Annotated P2	2018 MS
2019 F Paper	Annotated P2	2019 MS	2019 H Paper	Annotated P2	2019 MS
2020 F Paper	Annotated P2	2020 MS	2020 H Paper	Annotated P2	2020 MS

PLC Biology Paper 1

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
				Red	Amber	Green
Cell Biology	Describe the similarities and differences between eukaryotic & prokaryotic cells.	R489	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.02			
Cell Biology	Understand the size and scale of cells and make order of magnitude calculations using standard form.		https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.05			
Cell Biology	Explain how the main sub-cellular structures in animal cells, plant cells and bacterial cells are related to their functions.	R489	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.02			
Cell Biology	*Required practical: Use a light microscope to observe, draw and label a selection of animal and plant cells.*	R132	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.04 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.19			
Cell Biology	Describe the advantages and disadvantages of using light and electron microscopes to view cells	R878	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.19			
Cell Biology	Calculating magnification (recall the magnification equation)	R585 R132	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.06			
Cell Biology	Explain the importance of mitosis in the cell cycle	R368	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.09			
Cell Biology	Name and describe the 3 main stages in the cell cycle	R368	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.09			
Cell Biology	Describe the properties and functions of stem cells and explain the uses of stem cells.	R478	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.11			
Cell Biology	Evaluate the practical risks and benefits, as well as social and ethical issues, of the use of stem cells in medical research and treatments.	R478	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.12			

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
				Red	Amber	Green
Cell Biology	Define and explain the process of osmosis	R949	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.08			
Cell Biology	Compare the processes of diffusion, osmosis and active transport	R534 R949 R786	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.07 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.08 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.09			
Cell Biology	Describe and explain the factors which affect the rate of diffusion.	R428 R137	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.07			
Cell Biology	*Required Practical: Plan how to investigate the effect of changing the concentration of sugar solution of the mass of carrot pieces.*	R110 R685	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.08			
Cell Biology	Explain the expected results when investigating the effect of changing the concentration of sugar solution of the mass of carrot pieces. How would you determine the concentration of sugar inside the carrot cells.	R685	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.08			
Cell Biology	Identify the structures, describe the adaptations and function of the specialised cells within plants.	R451 R318 R419	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.04			
Cell Biology	Identify the structures, describe the adaptations and function of the specialised cells within animals	R220	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.1			
Cell Biology	Explain how cells become specialised for particular roles and give some examples of both plant and animal specialised cells.	R509	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.1			
Organisation	Explain how cells can form tissues, organs and systems.	R948	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_1.18			
Organisation	Describe the features of the digestive system.	R154	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_2.05			

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
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Organisation	Explain how enzymes work.	R667	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.01			
Organisation	Describe the impact of high temperatures and extreme pH's on enzymes.	R800	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.02			
Organisation	Describe the role of enzymes in digestion.	R615 R244	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_2.04			
Organisation	Explain how bile can speed up the digestion of lipids	R154	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_2.04			
Organisation	Explain how lipids, carbohydrates and proteins are broken down in the body (include the names of enzymes required and the products). How would a reduction of each enzyme affect digestion?	R244 R667 R800 R154 R642	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_2.04			
Organisation	Describe the food tests used to show the presence of each of the following: - Complex carbohydrates - Simple carbohydrates - Protein - Lipids Include the chemicals required and the positive results.	R647	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_2.02			
Organisation	*Required Practical: Investigate the effect of pH on the rate of reaction of the amylase enzyme.*	R642	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.02			
Organisation	Name the four main components of blood and explain its function.	R673	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_4.03			
Organisation	Explain how the different types of blood vessels are adapted for their functions.	R350	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_4.02			
Organisation	Describe the structure and function of the heart.	R806	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_4.01			

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Organisation	Explain the adaptations that allow gaseous exchange to take place between the lungs and the blood.	R652	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_4.05			
Organisation	State that the heart pumps blood around the body in a double circulatory system.	R806	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_4.01			
Organisation	Describe the causes of heart disease.	R583	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.21			
Organisation	Evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant	R583	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.21			
Organisation	Explain how heart disease can result in less respiration in the cells.	R583	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.21			
Organisation	Describe and explain the different treatments for Coronary Heart Disease.	R583 R902	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.21			
Organisation	Explain the difference between communicable and non-communicable diseases.	R505	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.01			
Organisation	Explain with examples what is meant by risk factors and causal mechanism.	R902	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.11			
Organisation	Describe what is meant by Health.	R902	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.01			
Organisation	Translate disease incidence information between graphical and numerical forms.					
Organisation	Discuss the human and financial cost of non-communicable diseases to an individual, a local community, a nation or globally.	R505	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.11			
Organisation	Explain the effect of lifestyle factors including diet, alcohol and smoking on the incidence of non-communicable diseases at local, national and global levels	R505	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.11			

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Organisation	Describe the main causes and types of cancer.	R669	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.13			
Organisation	Describe the differences between benign and malignant tumours.	R669	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.13			
Organisation	Explain how the structures of plant tissues are related to their functions	R451 R318	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.04			
Organisation	Explain how the structure of root hair cells, xylem and phloem are adapted to their functions.	R318 R419	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.04			
Organisation	Describe how water and dissolved sugars are transported throughout plants.	R973 R547	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.05			
Organisation	Compare the structures used to move water and dissolved sugars around a plant.	R419 R973 R600	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.05			
Organisation	Explain the effect of changing temperature, humidity, air movement and light intensity on the rate of transpiration. Use simple compound measures such as the rate of transpiration.	R600	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.05			
Infection and Response	Describe the four main types of disease causing pathogen (bacteria, virus, fungi, protist)	R329 R417	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.02			
Infection and Response	Describe the symptoms, method of spread, and how the spread of disease can be reduced in Measles, HIV and Tobacco Mosaic Virus.	R366	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.03			
Infection and Response	Describe the symptoms, method of spread, and how the spread of disease can be reduced in Salmonella, Gonorrhoea.	R421	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.04			
Infection and Response	Describe the symptoms, method of spread, and how the spread of disease can be reduced in Rose Black Spot	R875	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.05			
Infection and Response	Describe the symptoms, method of spread, and how the spread of disease can be reduced in Malaria.	R875	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.05			

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Infection and Response	Explain the role of the mosquito in the spread of Malaria	R875	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.05			
Infection and Response	Describe the non-specific defence systems of the human body against pathogens, including the skin, nose, trachea and bronchi, and stomach	R566	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.07			
Infection and Response	Explain the role of the immune system in the defence against disease.	R582	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.07			
Infection and Response	Describe the three ways in which white blood cells defend against pathogens	R582	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.07			
Infection and Response	Explain how vaccination will prevent illness in an individual, and how the spread of pathogens can be reduced through herd immunity.	R938	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.08			
Infection and Response	Describe how a vaccination works in the human body.	R938	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.08			
Infection and Response	Know the difference between painkillers and antibiotics and describe the different uses.	R328	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.14			
Infection and Response	Explain the use of antibiotics in treating disease.	R328	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.14			
Infection and Response	Explain why viruses are so difficult to treat. Name examples of viral conditions.	R366 R329	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.03			
Infection and Response	Name and describe the steps in both preclinical and clinical trials, including what each stage is testing for..	R781	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.15			

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Infection and Response	State that traditionally drugs were extracted from plants and microorganisms: • The heart drug digitalis originates from foxgloves. • The painkiller aspirin originates from willow. • Penicillin was discovered by Alexander Fleming from the Penicillium mould.	R781	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.15			
Infection and Response	Describe why double blind trials and placebos are used.	R781	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.15			
Infection and Response	Understand that the results of testing and trials are published only after scrutiny by peer review	R781	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.15			
Infection and Response	Describe the physical and chemical methods that plants use to defend themselves against diseases	R632	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_5.17			
Bioenergetics	Recall the word and balanced symbol equation for photosynthesis	R827	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.01			
Bioenergetics	Describe and explain the process of photosynthesis	R827	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.01			
Bioenergetics	Describe what a limiting factor is and give examples in photosynthesis. Explain the effect of increasing these factors on the rate of photosynthesis.	R979 R248	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.02			
Bioenergetics	*Required Practical: Investigating the effect of light intensity on the rate if photosynthesis.* • *Measure and calculate rate of photosynthesis.* • *extract and interpret graphs of photosynthesis rate involving limiting factors* • *plot and draw appropriate graphs selecting appropriate scale for axes*	R248	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.02			
Bioenergetics	Describe how the products of photosynthesis are used by plants	R917	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.01			

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Bioenergetics	Explain why leaves would not produce starch if they are restricted from obtaining light or carbon dioxide.	R827 R732 R979 R917	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_6.01			
Bioenergetics	Compare the processes of aerobic and anaerobic respiration	R336 R268	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.04			
Bioenergetics	Explain why heart rate and breathing rate increase during exercise to support cell processes.	R545	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.06			
Bioenergetics	Explain how limited oxygen entering the body will impact the human body.	R336 R545	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.04 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.06			
Bioenergetics	Explain why respiration is important in living organisms	R545	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.04			
Bioenergetics	Explain oxygen debt and how the body removes accumulated lactic acid from body cells.	R545	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.06			
Bioenergetics	Describe metabolism and explain its importance in the body.	R434	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.04			

PLC Biology Paper 2 - Mock 2

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
				Red	Amber	Green
Homeostasis	Define homeostasis and identify conditions that it controls	R904	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.01			
Homeostasis	Explain how receptors, neurones, coordination centres and effectors are involved in homeostasis	R213	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.05			
Homeostasis	**HIGHER -** Describe and explain the process of IVF to treat infertility.	R493	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.1			
Homeostasis	Define metabolism and describe how it can be increased or decreased.	R434	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_3.04			
Homeostasis	Describe and explain the differences between the nervous and endocrine systems.	R832	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.07			
Homeostasis	Name the glands in the endocrine system and explain their functions. You should be able to locate them on a diagram. (pituitary gland, pancreas, thyroid, adrenal gland, ovary, testes.)	R832	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.07			
Homeostasis	Describe how the body maintains a consistent blood glucose concentration (**HIGHER - must include low blood sugar as well as high blood sugar)**	R379	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.03			
Homeostasis	**HT: Explain the roles of thyroxine and adrenaline in the body**	R275	https://www.youtube.com/watch?v=_Mts354VC7A			
Homeostasis	**HT: Explain what is meant by negative feedback including examples**	R275	https://www.youtube.com/watch?v=_Mts354VC7A			
Homeostasis	Describe how hormones are transported around the body.	R832	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.07			
Homeostasis	Identify the main glands in the body and the hormones that they produce	R832	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.07			

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Homeostasis	Describe type 1 and type 2 diabetes (symptoms and causes)	R841	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.04			
Homeostasis	Describe the treatments for the different types of diabetes.	R841	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.04			
Homeostasis	Describe a method for measuring human reaction time. Include control variables to ensure valid, reliable results.	R683	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.05 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_11.08			
Homeostasis	Identify different types of neurones and describe their function	R213				
Homeostasis	Describe the order in which a nervous response occurs.	R213	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.05			
Homeostasis	Describe how the reflex arc works	R936	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.05			
Homeostasis	Explain why the reflex arc is important	R936	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.05			
Homeostasis	Explain how neurones are adapted for their function.	R841	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_7.05			
Homeostasis	Describe the role of hormones in human reproduction. (Testosterone, oestrogen, progesterone, LH and FSH)	R651	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.08			
Homeostasis	**HT: Describe the interactions between oestrogen, progesterone, LH, FSH and the female reproductive system in controlling the menstrual cycle.**	R910	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_7.08			
Homeostasis	Identify different types of contraception (chemical and barrier) and explain how they work	R679	https://www.youtube.com/watch?v=iXswGsfeHJg			
Homeostasis	Evaluate the use of different contraceptives	R679	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_			

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			7.09			
Homeostasis	**HT:** Explain how hormones are used to treat fertility problems (IVF)	R493	https://www.youtube.com/watch?v=4CxNeiAICmc			
Homeostasis	**HT**: Evaluate fertility treatments	R493	https://www.youtube.com/watch?v=4CxNeiAICmc			
Inheritance, variation and evolution	Describe the differences between asexual and sexual reproduction.	R320	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.12			
Inheritance, variation and evolution	Name the classification groups in order of size in Linnaeus's classification system. Describe this classification system	R761	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.22 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_1.01			
Inheritance, variation and evolution	Describe Carl Woese's three domain classification system	R761	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.22			
Inheritance, variation and evolution	Describe the process of mitosis	R761	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.09			
Inheritance, variation and evolution	Describe the process of meiosis including its function	R969	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.1			
Inheritance, variation and evolution	Compare mitosis and meiosis	R969	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.1			
Inheritance, variation and evolution	Describe the differences between body cells and gametes.	R668 R969	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.12			
Inheritance, variation and	Describe the structure and function of DNA	R794	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.01			

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evolution			https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.02			
Inheritance, variation and evolution	Describe the human genome project (include what it was and what the importance of it was)	R810	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_5.2			
Inheritance, variation and evolution	Explain the risks and benefits of of GM crops and genetic modification in medicine.	R801 R609	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_9.01			
Inheritance, variation and evolution	Describe genetic engineering (**HT also must be able to describe the stages in genetic engineering)**	R801 R805 **(R609)**	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_9.01			
Inheritance, variation and evolution	Define key inheritance vocabulary such as gamete, chromosome, gene, genotype, phenotype, allele, homozygous, heterozygous, dominant and recessive.	R216	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.02			
Inheritance, variation and evolution	Use genetic diagrams to draw and complete a punnett square diagram including showing the probability for a particular genotype or phenotype	R249 R933 R431	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.14			
Inheritance, variation and evolution	Use punnett squares to show how sex is determined from X and Y chromosomes	R431	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.14			
Inheritance, variation and evolution	**Higher -** Describe how a mutation during protein synthesis can result in enzymes that do not function correctly.	R909 R295	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.04 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.05			
Inheritance, variation and evolution	Describe inherited disorders such as cystic fibrosis and polydactyly	R431	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.16			
Inheritance,	Compare the arguments for and against	R249	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_			

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
				Red	Amber	Green
variation and evolution	embryonic screening.		8.16			
Inheritance, variation and evolution	Describe the differences between inherited characteristics, environmental characteristics and characteristics controlled by a mixture of both. Include examples of each.	R249	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.06			
Inheritance, variation and evolution	Explain the importance of mutations in genetic variation	R909	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.06			
Inheritance, variation and evolution	Explain how to determine the most recent common ancestor or the most distant relative of a species using an evolutionary tree.	R761	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.22			
Inheritance, variation and evolution	Name the scientists who developed the theory of evolution by natural selection and describe the theory.	R909 R157 R738	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.05 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.07 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.06			
Inheritance, variation and evolution	Describe the theory of evolution by natural selection and use it to explain specific examples of evolution	R738	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.06			
Inheritance, variation and evolution	Describe the process of selective breeding	R754	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.18			
Inheritance, variation and evolution	Evaluate the use of selective breeding	R754	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.18			
Inheritance, variation and	State the reasons that a species may become extinct.	R294 R719	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.19			

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
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evolution						
Inheritance, variation and evolution	Describe how fossil evidence can be used to provide evidence for evolution	R719	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_8.19			
Inheritance, variation and evolution	Explain how fossils form, including why some organisms do not form fossils	R719	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.19			
Inheritance, variation and evolution	Explain why there are gaps in the fossil record	R719	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.19			
Inheritance, variation and evolution	Explain how antibiotic resistant bacteria develop	R175	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.23			
Inheritance, variation and evolution	Describe advice for and from doctors to prevent the spread of antibiotic resistant bacteria	R175	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.23			
Ecology	Draw a food chain and food webs	R618	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.04			
Ecology	Describe the interdependence of organisms in an ecosystem including predator/prey and competition	R226	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.02			
Ecology	Describe how interdependence is linked to food, shelter, seed dispersal and pollination and what would happen if the stable community is disrupted	R226	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.02			
Ecology	Describe biotic factors including examples	R656	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.03			
Ecology	Describe abiotic factors including examples	R173				

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Ecology	Describe how organisms are adapted to their environment	R453	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.03			
Ecology	Define extremophile and give examples	R453	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_8.21			
Ecology	Describe how to calculate a population estimate using quadrats.	R347 R355	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.07 https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_11.1			
Ecology	Describe how to ensure quadrats are placed randomly when estimating population.	R355	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_11.1			
Ecology	Name and describe different types of pollution.	R604	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.13			
Ecology	Describe and explain the effects of climate change	R325	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.17			
Ecology	Define key organisation of an ecosystem vocabulary such as: ecosystem, community, population, producers, consumers, decomposers, prey and predator	R504	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.02			
Ecology	Describe the different ways in which predator species can be important in ecosystem stability.	R226	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.02			
Ecology	Describe the process of eutrophication and explain its impacts on the environment.	R604	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-h-t_10.13			
Ecology	Describe the carbon cycle and explain its importance for life on Earth	R824	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.09			
Ecology	Describe the water cycle and explain its importance for life on Earth	R153	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.09			
Ecology	Define biodiversity	R748	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.14			

Topic	Key information related to topic	Sparx Code	Resources/Information related to topic	How well do you understand this topic? RAG		
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Ecology	Explain positive and negative ways that humans can impact biodiversity	R124	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.14			
Ecology	Explain the impact of deforestation on ecosystems	R604 R975	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.19			
Ecology	Explain the impact of global warming on ecosystems	R325	https://cognitoedu.org/coursesubtopic/b2-gcse-aqa-f-c_10.13			
Scientific Skills	Identify variables in experiments	X	https://www.youtube.com/watch?v=nKbUbfadxRU			
Scientific Skills	Describe relationships shown in graphs	X	https://www.youtube.com/watch?v=OzDUYj6nNCA			
Scientific Skills	Calculate mean, median and mode	X	https://www.youtube.com/watch?v=nYScfgOdz_A			