

**UNIT 1: (Double Award) BIOLOGY 1
FOUNDATION TIER**

MARK SCHEME

GENERAL INSTRUCTIONS

Recording of marks

Examiners must mark in red ink.

One tick must equate to one mark (apart from the questions where a level of response mark scheme is applied).

Question totals should be written in the box at the end of the question.

Question totals should be entered onto the grid on the front cover and these should be added to give the script total for each candidate.

Marking rules

All work should be seen to have been marked.

Marking schemes will indicate when explicit working is deemed to be a necessary part of a correct answer.

Crossed out responses not replaced should be marked.

Credit will be given for correct and relevant alternative responses which are not recorded in the mark scheme.

Extended response question

A level of response mark scheme is used. Before applying the mark scheme please read through the whole answer from start to finish. Firstly, decide which level descriptor matches best with the candidate's response: remember that you should be considering the overall quality of the response. Then decide which mark to award within the level. Award the higher mark in the level if there is a good match with both the content statements and the communication statements.

Marking abbreviations

The following may be used in marking schemes or in the marking of scripts to indicate reasons for the marks awarded.

cao = correct answer only
ecf = error carried forward
bod = benefit of doubt

Question				Marking details	Marks Available					
					AO1	AO2	AO3	Total	Maths	Prac
1	(a)	(i)		A = vena cava (1) B = atrium (1)	2			2		
		(ii)	I	Lung(s)	1			1		
			II	Arrow in through atrium and out through aorta	1			1		
	(iii)		Valve (1) Prevent backflow (1)	2			2			
	(b)			Blood flows through blood vessels in a double circulatory system		1		1		
				Question 1 total	6	1	0	7	0	0

GCSE SCIENCE (Double Award) Sample Assessment Materials 22

Question				Marking details	Marks available					
					AO1	AO2	AO3	Total	Maths	Prac
2	(a)			Ladybird	1			1		
	(b)	(i)		10 days		1		1	1	
		(ii)	I	All plots correct		1		1	1	
			II	Plots joined with a ruler		1		1	1	
	(c)	(i)		28-30		1		1	1	
		(ii)	I	Reproduction/ immigration		1		1		
			II	Predation (rate) greater than replacement (rate)/ eaten by ladybirds		1		1		
	(d)			Count more leaves/ count aphids on other parts of plant/ count aphids per unit area			1	1		1
	(e)			Fewer aphids, so fewer ladybirds (1) Fewer blue tits because they feed on ladybird (1) OR Blue tits would decrease (1) Because of bioaccumulation/ or description of (1)		2		2		
				Question 2 total	1	8	1	10	4	1

Question				Marking details	Marks available					
					AO1	AO2	AO3	Total	Maths	Prac
3	(a)	(i)		46		1		1	1	
		(ii)		0.46		1		1	1	
	(b)	(i)		Cytoplasm	1			1		
		(ii)		Absorb light	1			1		
		(iii)		Carbon dioxide and glucose	1			1		
	(c)	(i)		30, 3 and 60, 6		1		1	1	
		(ii)		Oxygen		1		1		
		(iii)		Simple answer relating temperature to rate, e.g. the higher the temperature, the faster the rate (1) Quantitative answer relating temperature to rate, e.g. rate <u>doubles</u> for every 10 °C rise (2)			2	2	2	
		(iv)		Volume of gas (1) it is more accurate (1) the volume of bubbles varies (1)			3	3		3
				Question 3 total	3	4	5	12	5	3

GCSE SCIENCE (Double Award) Sample Assessment Materials 24

Question			Marking details	Marks available																				
				AO1	AO2	AO3	Total	Maths	Prac															
4	(a)		Diffusion	1			1																	
	(b)	(i)	Test tube/boiling tube (1) containing plasma and Benedict's solution (1) Heat {strongly/to boiling} (1) Blue to {brick red/ orange} (1)	4			4		4															
		(ii)	1 mark for each correct row (2) <table border="1"> <thead> <tr> <th>reagent</th> <th>molecule tested for</th> <th>colour of reagent</th> <th>colour after testing</th> <th>✓ or ✗</th> </tr> </thead> <tbody> <tr> <td>iodine solution</td> <td></td> <td>brown</td> <td></td> <td></td> </tr> <tr> <td></td> <td>protein</td> <td>blue</td> <td></td> <td>✓</td> </tr> </tbody> </table>	reagent	molecule tested for	colour of reagent	colour after testing	✓ or ✗	iodine solution		brown				protein	blue		✓	2			2		2
reagent	molecule tested for	colour of reagent	colour after testing	✓ or ✗																				
iodine solution		brown																						
	protein	blue		✓																				
		(iii)	Starch is too large to pass through the wall of the small intestine(1) so is digested (1) by an enzyme (1)		3		3																	
			Question 4 total	7	3	0	10	0	6															

Question		Marking details		Marks available						
				AO1	AO2	AO3	Total	Maths	Prac	
5			<p>Indicative content Record Dan's (breathing) rate at rest then exercise (bike or other) exercise specified (distance/speed/load) for a certain time record rate after exercise rate must return to rest repeat with Alex – must ref to same exercise regime compare results to see which breathing rate returned to normal the fastest.</p> <p>5 – 6 marks: Detailed description of the entire investigation to include specified exercise regime and ref. to same exercise again with Alex and take rate till return to resting level. <i>There is a sustained line of reasoning which is coherent, relevant, substantiated and logically structured. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.</i></p> <p>3 – 4 marks: Outline general description of the investigation <i>There is a line of reasoning which is partially coherent, largely relevant, supported by some evidence and with some structure. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.</i></p> <p>1 – 2 marks: Ref only to counting breathing rate and then exercise by Dan and repeat with Alex + comparison <i>There is a basic line of reasoning which is not coherent, largely irrelevant, supported by limited evidence and with very little structure. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.</i></p> <p>0 marks: No attempt made or no response worthy of credit.</p>							
			Question 5 total	0	0	6	6	0	6	

GCSE SCIENCE (Double Award) Sample Assessment Materials 26

Question			Marking details			Marks available					
						AO1	AO2	AO3	Total	Maths	Prac
6	(a)	(i)	6 correct (2) 3 correct (1)				2		2		
			1	<u>true</u>	false						
			2	<u>true</u>	false						
			3	true	<u>false</u>						
			4	<u>true</u>	false						
			5	<u>true</u>	false						
			6	true	<u>false</u>						
		(ii)	More accurate reflection/closer to the mean/counter variability (1) Confirm that the conclusions are common to all (genetic) groups/spot possible (genetic) differences between groups(1)			2		2		2	
		(iii)	Any 3 × (1) from: stroke/thrombosis type 2 diabetes tooth decay mobility issues			3		3			
		(iv)	How much fat/ sugar (1) Is in each portion/ 100g/ packet (1)				2	2			

Question				Marking details	Marks available					
					AO1	AO2	AO3	Total	Maths	Prac
6	(a)	(v)	I	Apples		1		1		
			II	Flavonol and flavonone		1		1		
	(b)			Good range/variety/all the nutrient groups (1) {Volume/ mass/ in proportion} to appropriate for age/gender/activity (1)	2			2		
	(c)			For: to reduce consumption of sugary foods/drinks (1) Against: interference on individual choice/the market (1)		2		2		
				Question 6 total	7	8	0	15	0	2

FOUNDATION TIER**SUMMARY OF MARKS ALLOCATED TO ASSESSMENT OBJECTIVES**

Question	AO1	AO2	AO3	TOTAL MARK	MATHS	PRAC
1	6	1	0	7	0	0
2	1	8	1	10	4	1
3	3	4	5	12	5	3
4	7	3	0	10	0	6
5	0	0	6	6	0	6
6	7	8	0	15	0	2
TOTAL	24	24	12	60	9	18