AQA GCSE Biology | 8461

SPECIFICATION POINT 4.7.2.2

How materials are cycled

Mark schemes and examiner comments

Tier	**Foundation**
Question groups	**4**
Available paper years	**2008–2015**

Using this booklet

1. Booklet answer numbers match the question booklet.
2. Use the original question number within marking tables.
3. Examiner comments are included where available.

Name: _____ **Date:** _____

Where a precise marking extract is unavailable, the full source document is included in an appendix. Any missing mark scheme is explicitly identified.

4.7.2.2 How materials are cycled

Answer 01 · Mark scheme January 2008 | BLY2F | Original Q7 | Legacy

Question 7

	answers	extra information	mark
(a)(i)	**D**		1
(a)(ii)	**A**		1
(b)(i)	air / oxygen (can enter)	ignore other factors entering or leaving	1
	for (aerobic) respiration	do **not** accept anaerobic respiration	1
(b)(ii)	(more) minerals / nutrients /salt(s) / ions **or** named mineral / element available	ignore fertility / fertiliser allow symbols allow eg mulching / reducing weeds **or** retain water	1
total			5

4.7.2.2 How materials are cycled

Answer 02 · Mark scheme January 2019 | BLY2F | Original Q6 | Legacy

Question 6

question	answers	extra information	mark
6(a)	three layer triangular pyramid soya / beans / food – trout / fish – people / human (in sequence)	either way up (as blocks or triangle) ignore reference to producers / herbivores / consumers award **1** mark only for a correct food chain with 2 correct arrows showing energy flow	1 1
6(b)	the trout release energy when they respire some energy will be lost in waste from the trout		1 1
6(c)	any **one** from eg • easy / easier to catch / more caught • easy / easier to feed • no / less predation • less energy loss • less movement	 allow easy / easier to monitor allow control food allow less fishing / poaching allow grow faster ignore less space to move do **not** allow easier to farm	1
6(d)	any **two** from: • microorganisms / bacteria / decomposers / microbes / fungi / detritus feeders • decay / rot / decompose / digest / break down • (microorganisms) respire • turned into fossil fuels / named fossil fuels • carbon dioxide / CO_2 released	 ignore biodegrade do **not** award this mark if response implies the trout respire	2
Total			**7**

4.7.2.2 How materials are cycled

Answer 02 · Mark scheme

January 2010 | BLY2F | Original Q6 | Legacy

BLY2F

4.7.2.2 How materials are cycled

Answer 03 · Mark scheme

June 2013 | BL1FP | Original Q9 | Legacy

Question 9

question	Answers	extra information	Mark
9	Marks awarded for this answer will be determined by the Quality of Written Communication (QWC) as well as the standard of the scientific response. Examiners should also refer to the information on page 5.		6

0 marks	Level 1 (1-2 marks)	Level 2 (3-4 marks)	Level 3 (5-6 marks)
No relevant content.	For at least one process **either** the organism that carries it out **or** the carbon compound used **or** the carbon compound produced is described **or** for at least one organism **either** the carbon compound it uses **or** the carbon compound it produces is described **or** at least one process is named	For some processes (at least one of which is named) **either** the organisms involved **or** the carbon compounds used **or** the carbon compounds produced are described	For at least one named process an organism **and** either the carbon compound used for the process **or** the carbon compound produced by the process are described **and** for other processes (at least one of which is named) **either** the organism **or** the carbon compounds used **or** the carbon compounds produced are described (as in Level 2)

examples of biology points made in the response:

- (green) plants photosynthesise
- photosynthesis takes in carbon dioxide
- (green) plants use carbon to make carbohydrate / protein / fat / organic compounds / named (e.g. enzymes / cellulose)
- animals eat (green) plants (and other animals)
- (green) plants respire
- animals respire
- respiration releases carbon dioxide
- (green) plants and animals die
- microorganisms decay / decompose / rot / break down / feed on dead organisms
- microorganisms respire

Total			6

UMS Conversion Calculator: www.aqa.org.uk/umsconversion

4.7.2.2 How materials are cycled

Answer 04 · Mark scheme June 2015 | BL3FP | Original Q2 | Legacy

Question	Answers	Extra information	Mark	AO / Spec. Ref.
2(a)	any **one** from: • increased pollution • dumping waste	allow described consequence eg vermin accept (increased) landfill accept (increased) fly tipping	1	AO1 341a
2(b)(i)	(mass of SO_2) decreases and then levels off / plateaus		1 1	AO2 341b
2(b)(ii)	2008	clear evidence of calculating 700 (000) = 1 mark	2	AO2 341
2(b)(iii)	any **one** from: • acid rain • erosion of statues / buildings • destruction of habitats • reduction in biodiversity • damage to lichen • breathing problems	ignore reference to ozone layer allow damage to plants	1	AO1 341b
2(c)	Carbon dioxide being absorbed in oceans and lakes Photosynthesis by trees		1 1	AO1 343b,342a
Total			**8**	

4.7.2.2 How materials are cycled

Answer 04 · Mark scheme

June 2015 | BL3FP | Original Q2 | Legacy

