

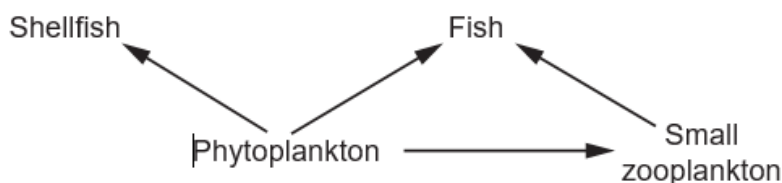
GCSE Biology B (Twenty First Century Science)
J257/04 Depth in biology (Higher Tier)

Question Set 8

1

Plastic pollution in the sea is a big problem.

Look at the food web from the North Sea.



(a) What does the word “Fish” represent in the food web?

Tick (✓) **one** box.

An individual organism

A population

A producer

A species



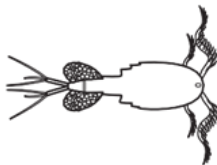
[1]

(b) Explain the difference between a community and an ecosystem using examples from the food web.

[2]

Plastic litter in the sea breaks down slowly into small pieces called microplastics.

The table gives information about phytoplankton, microplastics and small zooplankton.

	Phytoplankton	Microplastics	Small zooplankton
			
Size	Up to 0.2 mm	Up to 5 mm	Up to 20 mm
Can be digested by fish?	Yes	No	Yes

Fish can eat anything that is less than or equal to 20 mm in size.

(c) Explain why plastic litter in the sea could cause a decrease in the numbers of fish.

[3]

(d) Scientists have discovered some bacteria in a rubbish dump. These bacteria can break down plastic litter very quickly.

(i) Some people think we should put the bacteria in the North Sea to break down plastic litter.

Suggest and explain how this could put the North Sea ecosystem at even greater risk.

[4]

(ii) Bacteria gaining the ability to break down plastic is an example of evolution.

Explain what changes must have taken place in **the bacteria cells** to give them the ability to break down plastic.

[2]

Total Marks for Question Set 8: 12

OCR

Oxford Cambridge and RSA

Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge