

GCSE Biology A (Gateway)

J247/04 Biology A B4-B6 and B7 (Higher Tier)

Question Set: 2

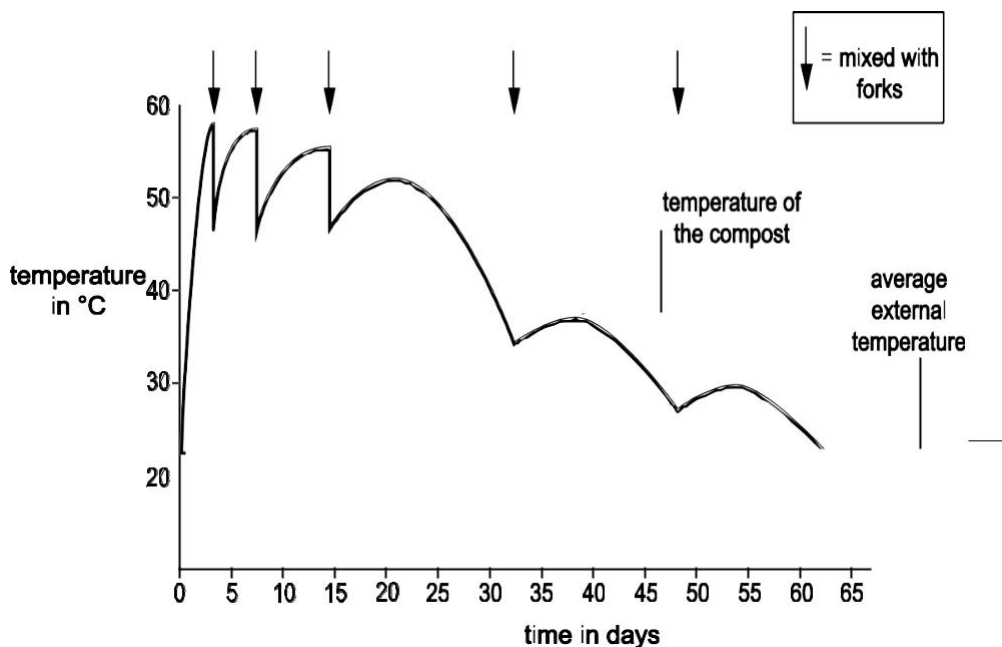
1

Some students measured the temperature inside a compost heap.

They also measured the external temperature.

On five occasions they mixed up the compost heap with garden forks.

The graph shows their results.



- (a) (i) The compost took 63 days to completely decompose.

Explain how the students could tell this from their graph.

Temperature of the heap was the same as the external temperature.

[1]

- (ii) The rate of temperature increase is greatest before the compost is mixed for the first time.

Explain how the rate of temperature change can be calculated.

$$\frac{\text{Change in temperature}}{\text{Time}}$$

[1]

- (b) Compost decomposes more slowly above 60°C or below 30°C. Use

ideas about enzymes and decomposition to explain why this is.

Above 60°C, the enzymes in the decomposers had denatured
Below 30°C, enzymes in the decomposers were working too slowly.

[2]

- (c) Use the graph to describe how the forking helps to provide the best temperature for decomposition.

Initially for first 3 times forking reduces the temperature however towards the end forking helps increase the temperature. [2]

Total Marks for Question Set 2: 6

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