

GCSE Biology A (Gateway)

J247/02 B4-B6 and B7 Foundation (Foundation Tier)

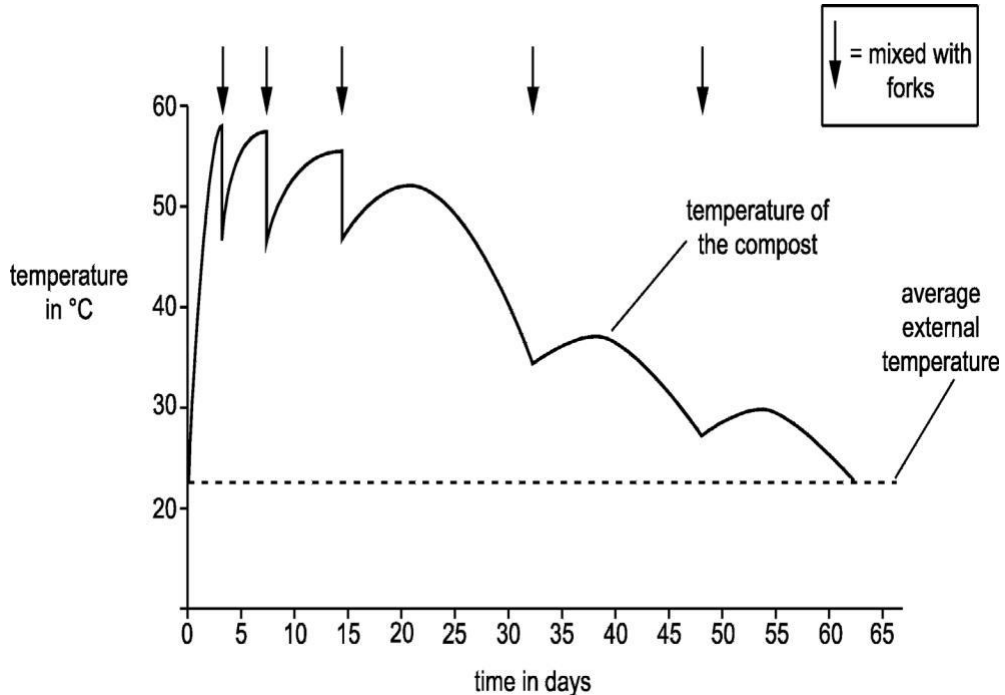
Question Set 10

10

Some students measure the temperature inside a compost heap. They also measure 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 heap same as 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.

Change in temperature ÷ time [1]

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

Use ideas about enzymes and decomposition to explain why.

*Above 60°C enzymes in decomposers had denatured.
Below 30°C enzymes in decomposers were working too slowly.* [2]

- (c) Use the graph to describe how mixing with a fork helps to provide the best temperature for decomposition.

[2]

For first three times forking reduces the temperature however towards the end forking helps to increase the temperature.

Total Marks for Question Set 10: 6

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