



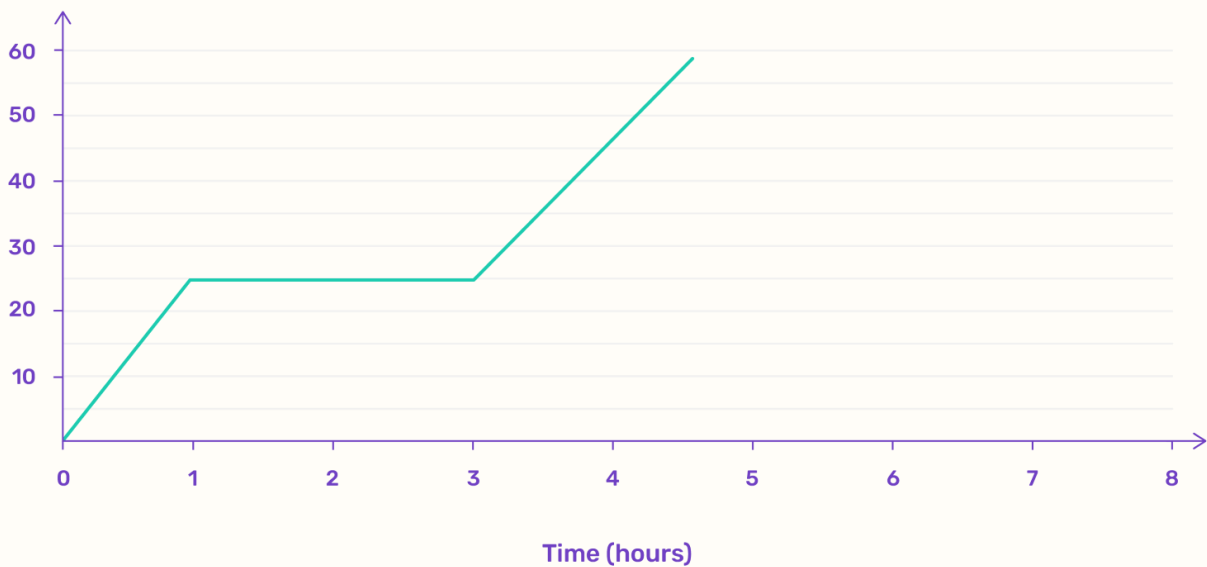
# Science lesson 2

## – Answer sheet

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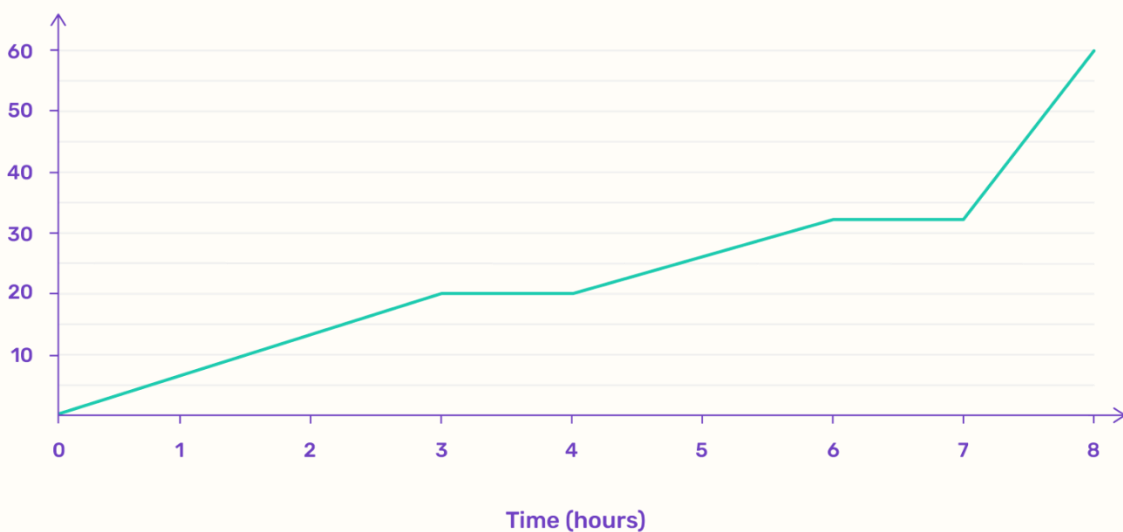
Graph 1 is Birmingham as it stops for 2 hours BUT only has 1 stop on the journey, not 2.

Distance (miles)



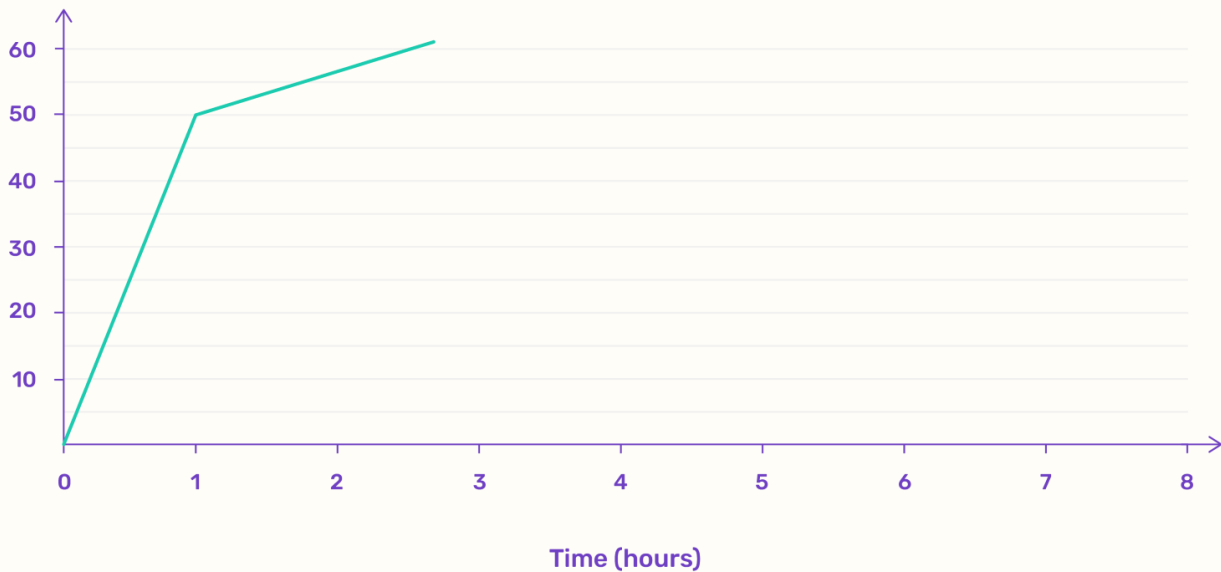
Graph 2 Ladychester as it has 2 stops during its journey at 2 separate points between 3-4 hours and 6-7 hours. Also, it travels the fastest during the last hour of its route.

Distance (miles)



Graph 3 Liverpool as, during the first hour of the journey, it travels at 50mph so travels 50 miles.

Distance (miles)



## Answers

### Question 2

#### Graph 1 calculations

Aliyah has calculated:

- 1) The total journey was about 4 and a half hours.

Correct as end of graph is at 4.5 hours.

- 2) The average speed was 30mph

No, as it takes 4.5 hours to do 60 miles so  $60/4.5 = 13.3$  mph

- 3) Between 3 hours and 4.5 hours the train travelled at a speed of 20mph.

Correct as it did 30 miles in 1.5 hours SO  $30/1.5 = 20\text{mph}$

- 4) This graph shows the shortest journey time compared to the other 2 graphs.

No, as it takes 4.5 hours to reach 60 miles, graph 3 is the fastest as it only takes just under 3 hours to do 60 miles.

- 5) The train did not stop at any time on the journey.

No, as between 1 and 3 hours the graph is a flat line showing the train was not moving/stopped.

### Graph 2 calculations

Aliyah has calculated:

- 1) The train stopped once during the journey.

No, it stopped twice as between 3 and 4 hours and 6 and 7 hours the graph is a flat line showing the train was not moving/stopped.

- 2) The total journey was about 6 hours.

No, it was 8 hours as the graph ends at 8 hours.

- 3) The average speed was 7.5mph.

Correct – it took 8 hours to do 60 miles so  $60/8 = 7.5\text{mph}$ .

- 4) Between 0 hours and 6 hours the train travelled at a speed of 10mph.

No, it travelled 30 miles in 6 hours so  $30/6 = 5\text{mph}$ .

- 5) This graph shows the shortest journey time compared to the other 2 graphs.

No, as it takes 8 hours to reach 60 miles. Graph 3 is the fastest as it only takes just under 3 hours.

### Graph 3 calculations

Aliyah has calculated:

- 1) The train stopped once during the journey.

No, it did not stop at any point as there are no flat parts on the graph.

- 2) The speed during the first hour was 50mph.

Correct – it took 1 hour to do 50 miles so  $50/1 = 50\text{mph}$ .

- 3) The train was travelling at its fastest during the first hour.

Correct – it took 1 hour to do 50 miles so  $50/1 = 50\text{mph}$ .

- 4) This graph shows the longest journey time compared to the other 2 graphs.

No, it shows the shortest as it only takes 3 hours to do 60 miles. Graph 1 takes 4.5 hours and graph 2 takes 8 hours.

5) The train was travelling fastest AFTER the first hour.

No – it took 1 hour to do 50 miles so  $50/1 = 50\text{mph}$ , then 2 hours to do 10 miles (so was at  $5\text{mph}$  after the first hour) so was slowest after the first hour.

Feedback to Aliyah is that the best route to start first is Creweston to Liverpond – as shown in graph 3. It is the quickest, so the class vote should reflect this. (Sketch of the graph for the extension activity below.)

Distance (miles)

