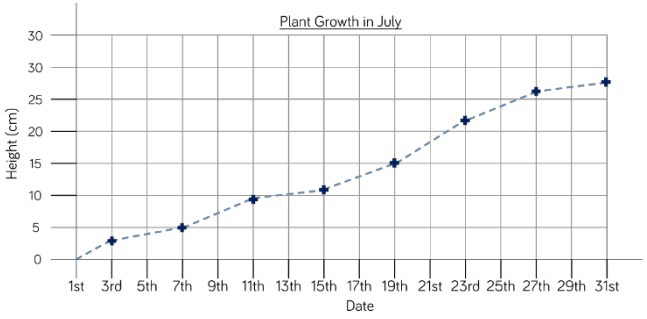
# Read and Interpret Line Graphs

## Reasoning and Problem Solving

Eva has created a graph to track the growth of a plant in her house.




Eva recorded the following facts about the graph.

a) On the 9th of July the plant was about 9 cm tall.

b) Between the 11th and 19th July the plant grew about 5 cm.

c) At the end of the month the plant was twice as tall as it had been on the 13th .

Can you spot and correct Eva's mistakes?

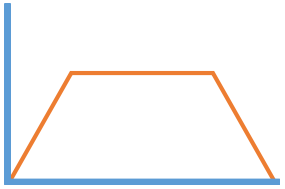
a) On the 9th July a more accurate measurement would be 7.5 cm.

b) Correct.

c) On the 31st the plant was approximately 28 cm tall, but on the 13th it was only 10 cm which is not half of 28 cm. The plant was closer to 14 cm on the 17th July.

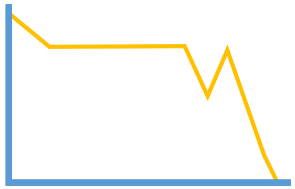
Write a story and 3 questions for each of the 3 graphs below.

a



b

c



Possible context for each story:

a) A car speeding up, travelling at a constant speed, then slowing down.

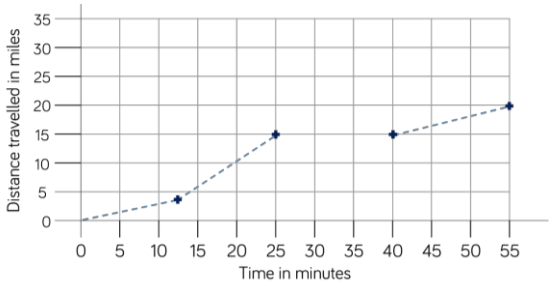
b) The height above sea level a person is at during a walk.

c) Temperature in an oven when you are cooking something.

# Draw Line Graphs

## Reasoning and Problem Solving

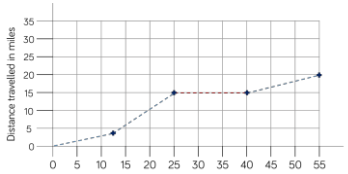
This graph shows the distance a car travelled.



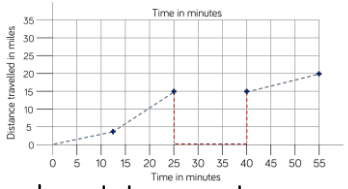

Rosie and Jack were asked to complete the graph to show the car had stopped.

Here are their completed graphs.

Rosie:




Jack:




Who has completed the graph correctly?

Explain how you know.

Rosie has completed the graph correctly. The car has still travelled 15 miles in total, then stopped for 15 minutes before carrying on.

This table shows the distance a lorry travelled during the day.

| Time | Distance in miles |
|---|---|
| 7.00 a.m. | 10 |
| 8.00 a.m. | 28 |
| 9.00 a.m. | 42 |
| 10.00 a.m. | 58 |
| 11.00 a.m. | 70 |
| 12.00 a.m. | 95 |
| 1.00 p.m. | 95 |
| 2.00 p.m. | 118 |

Create a line graph to represent the information, where the divisions along the $x$-axis are every two hours.

Create a second line graph where the divisions along the $x$-axis are every hour.

Compare your graphs. Which graph is more accurate?

Would a graph with divisions at each half hour be even more accurate?

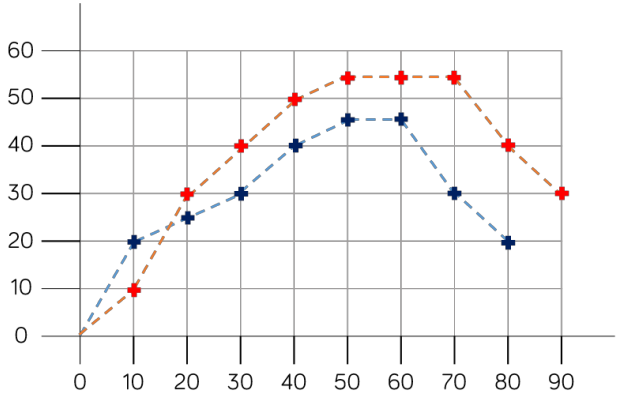
Children may find that the second line graph is easier to draw and interpret as it matches the data given directly.

They may discuss that it would be difficult to draw a line graph showing half hour intervals, as we cannot be sure the distance travelled at each half hour.

# Line Graphs Problems

## Reasoning and Problem Solving

What could this graph be showing?



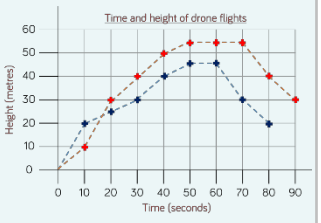

Label the horizontal and vertical axes to show this.

Is there more than one way to label the axes?

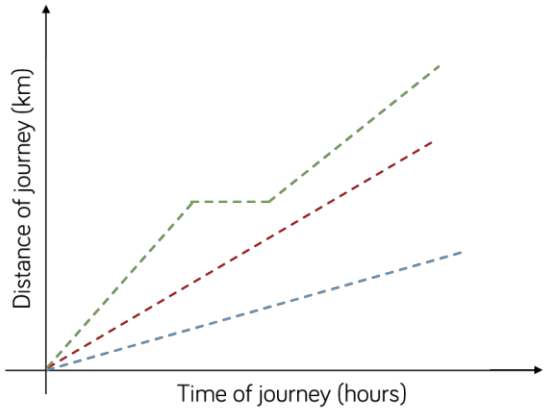
Possible response:

This graph shows the height of two drones and the time they were in the air.

For example:




The graph below shows some of Mr Woolley's journeys.




What is the same and what is different about each of these journeys?

What might have happened during the green journey?

Possible responses:

All the journeys were nearly the same length of time.

The journeys were all different distances.

The red and blue journey were travelling at constant speeds but red was travelling quicker than blue.

During the green journey, Mr Woolley might have been stuck in traffic or have stopped for a rest.