

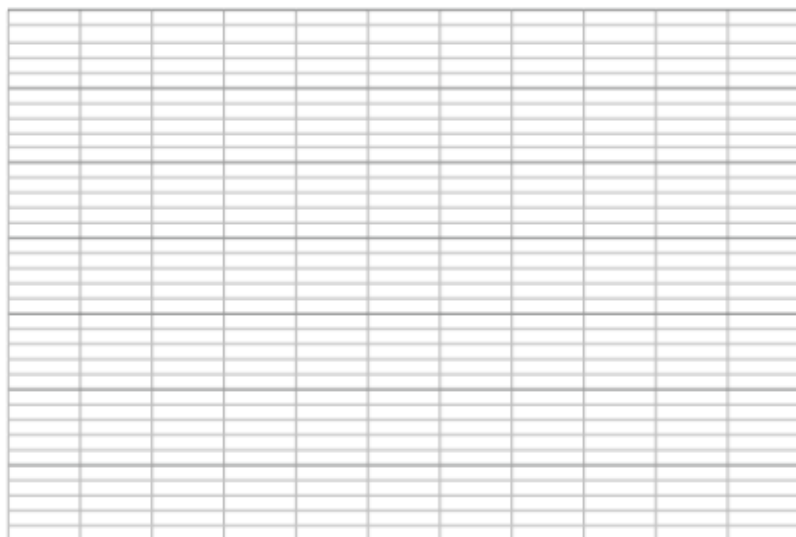


- 1) This table shows the average maximum temperatures across the year in Madrid.



Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
10°C	12°C	16°C	18°C	21°C	27°C	31°C	31°C	26°C	19°C	13°C	10°C

Draw a line graph to represent the information in the table.



Write three questions (with answers) about your graph.

- 2) This table shows the population of the UK and Spain from 1970 to 2010.

	1970	1980	1990	2000	2010
UK	55 600 000	56 300 000	57 200 000	58 800 000	62 500 000
Spain	33 600 000	37 400 000	38 900 000	40 500 000	46 500 000

On graph paper, draw one line graph to show the population of both countries from 1970 to 2010.

- 1) Billie and her friend Kira have been training for a cross-country run. This table shows the distance they were from their starting point over a day:



	08:00	09:00	10:00	11:00	12:00	13:00
Billie	0km	12km	20km	25km	33km	48km
Kira	0km	15km	22km	30km	39km	53km

Here are some things different children said about how to draw the graph using cm^2 paper. Tick the ones you agree with. If you do not agree, explain why.

Kim

The x-axis should show the distance.

The y-axis should show the distance.

Tara

The increments for the axis showing distance should have increments which are multiples of 1.

Mo

The increments for the axis showing distance could have increments which are multiples of 4.

Tia

It is best to use different colours to show Billy and Kira's distance.

Sam

The axis showing time could be divided into 1 time unit every 2 squares so the graph is not too narrow.

Bella

The increments for the axis showing distance should have increments which are multiples of 10.

Jo

On cm^2 paper, draw one line graph to show the distances covered by Billy and Kira.



- 1) A driver set off from a factory at 05:00. This table shows how far she travelled throughout the day:



Time	Distance
06:00	22 miles
07:00	43 miles
08:00	58 miles
09:00	75 miles
10:00	75 miles
11:00	97 miles
12:00	120 miles
13:00	136 miles

Freddy draws a line graph where the increments along the x-axis are divided into multiples of 1 hour. (05:00, 06:00, 07:00, etc.)

Khatija also draws a line graph but the increments along the x-axis are divided into multiples of 2 hours. (05:00, 07:00, 09:00, etc.)

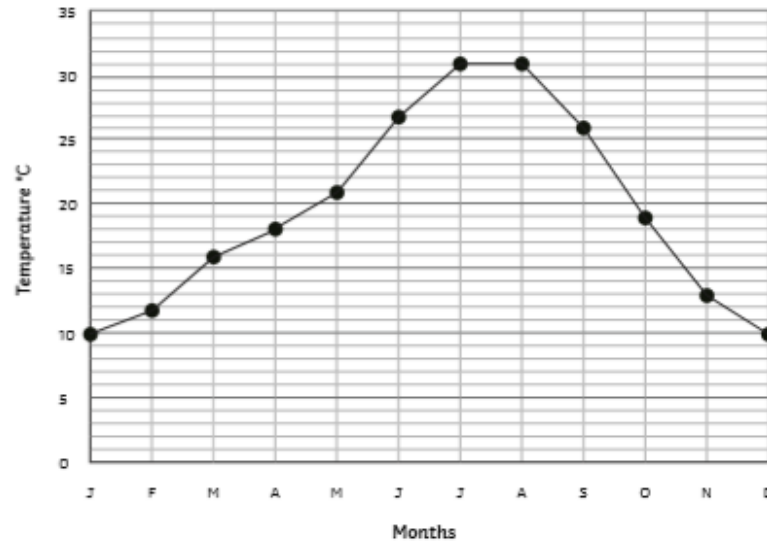
- a) On graph paper, draw both Freddy and Khatija's graphs.

- b) Whose graph do you think is more accurate and why?

- c) Lewis says he is going to draw a graph where the x-axis has increments of half an hour.
If Lewis did this, would this graph be even more accurate?

ANSWERS

- 1) Graphs may have different scale for y-axis. Both axes must be labelled correctly with a suitable title for the graph.



Three questions and answers to accompany the graph. For example:

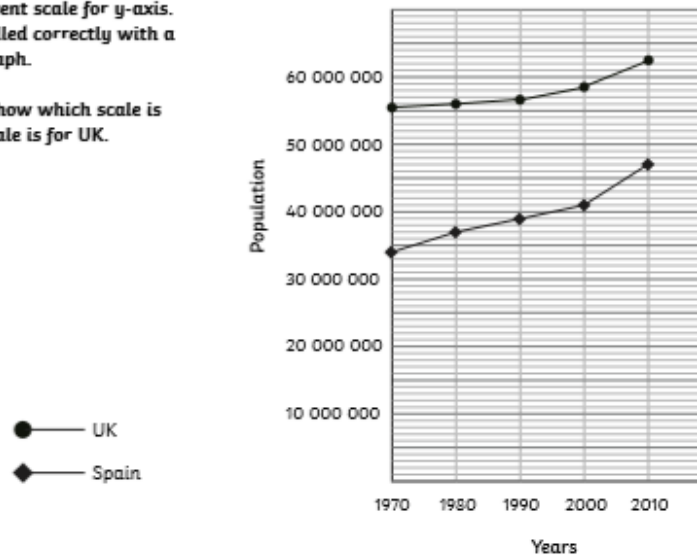
Which months had the highest temperature? July and August

Which months had the lowest temperature? January and December

What is the difference in temperature between February and June? 15°C

- 2) Graphs may have different scale for y-axis. Both axes must be labelled correctly with a suitable title for the graph.

Must include a key to show which scale is for Spain and which scale is for UK.



1)

The y-axis should show the distance.

Tara

It is best to use different colours to show Billy and Kira's distance.

Sam

The increments for the axis showing distance could have increments which are multiples of 4.

Tia

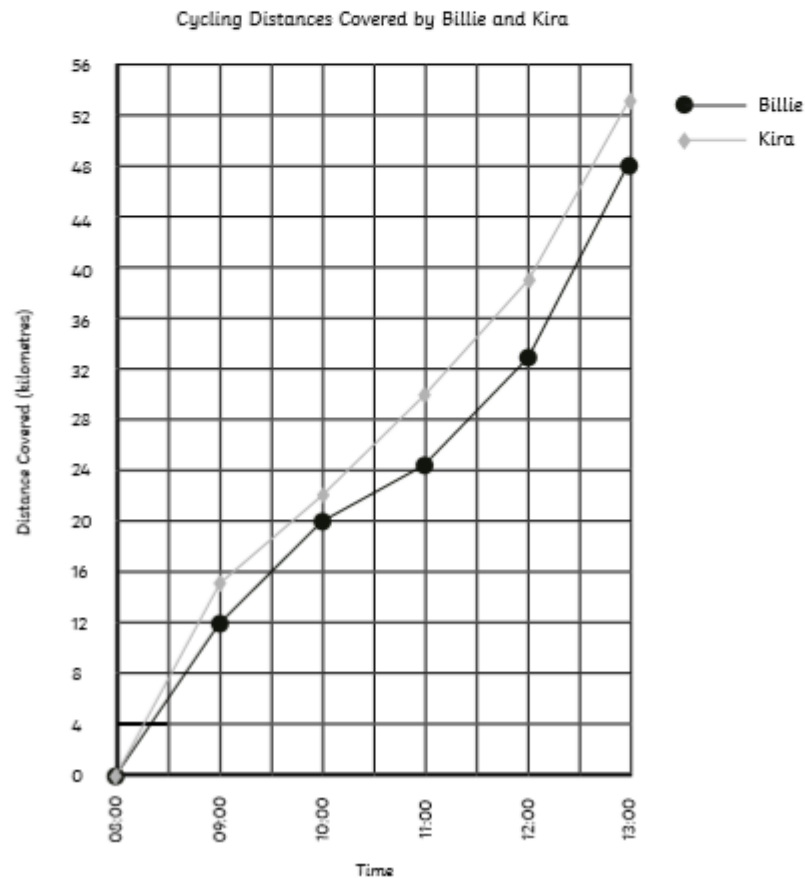
The axis showing time could be divided into 1 time unit every 2 squares so the graph is not too narrow.

Bella

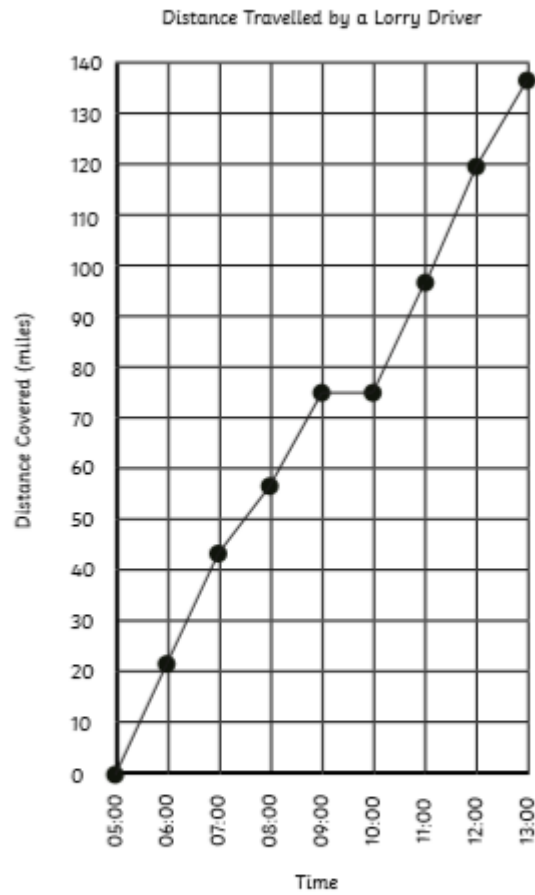
Kim: It is usual to have the time measurements along the x-axis.

Mo: If you used multiples of 1, the graph would need to be very large – 53cm for the y-axis.

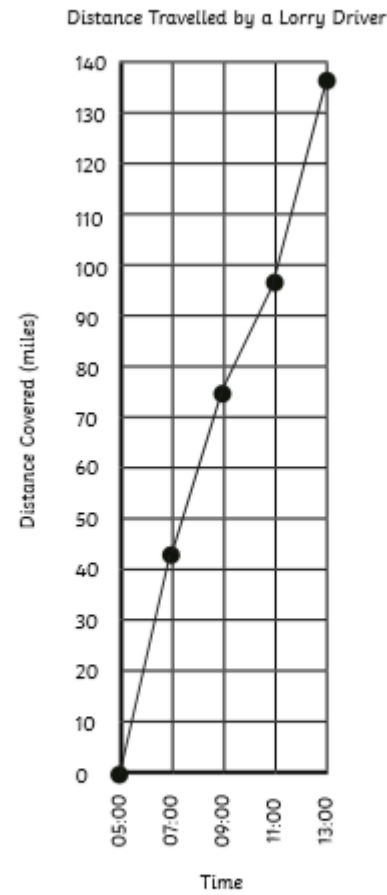
Jo: If you used multiples of 10, it would be quite difficult to show single increments and would not be as accurate – the y-axis would only be 6cm tall.



1) a) Freddy's graph:



Khatija's graph



- b) Freddy's graph is more accurate. It shows all the distances that the driver covered over the time. Khatija's graph doesn't show that the driver had an hour where he didn't cover any distance at all.
- c) There is no data for half an hour times so a graph divided into half hour increments wouldn't be any more accurate.