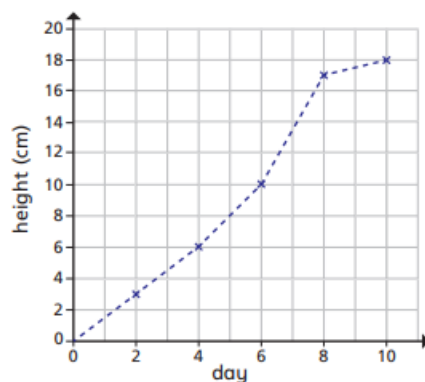


Good morning Year 4s, for maths today, please go to <https://whiterosemaths.com/homelearning/year-4/> and find **Summer term - week 10 -Lesson 3**
Watch the teaching video 'Introducing line graphs' and then complete the worksheet and the **challenge** below.

Introducing line graphs

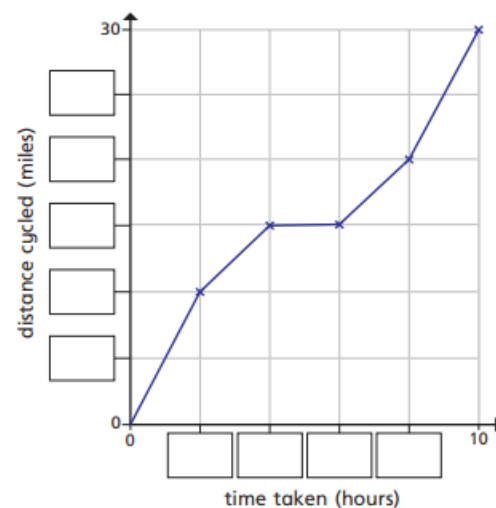


- 1 The line graph shows the growth of some cress over 10 days.



- a) How tall was the cress on Day 2? cm
- b) On what day did the cress reach 10 cm? day
- c) Estimate the height of the cress on Day 5 cm
- d) Estimate when the cress will reach a height of 14 cm.
day
- e) Between which two consecutive days did the cress grow the most?
day and day

- 2 The line graph shows the distance a cyclist travels on a bike ride.
a) Fill in the missing labels.



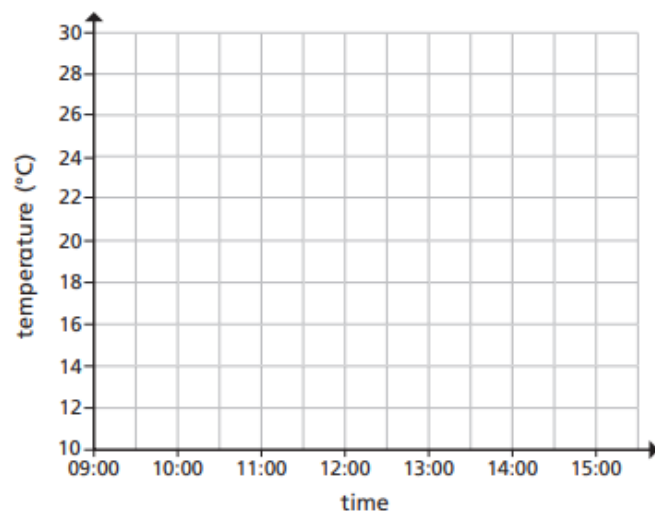
- b) How long did it take the cyclist to travel 10 miles? hours
- c) How far had the cyclist travelled after 4 hours? miles
- d) How far did the cyclist travel in total? miles
- e) How far did the cyclist travel between 4 and 6 hours? miles

What might have happened during this time?

- 3 The table shows the temperature outside on Monday.

Time	09:00	10:00	11:00	12:00	13:00	14:00	15:00
Temperature ($^{\circ}\text{C}$)	14	16	20	26	24	20	18

- a) Use the information in the table to complete the line graph.



Key Monday _____ Tuesday _____

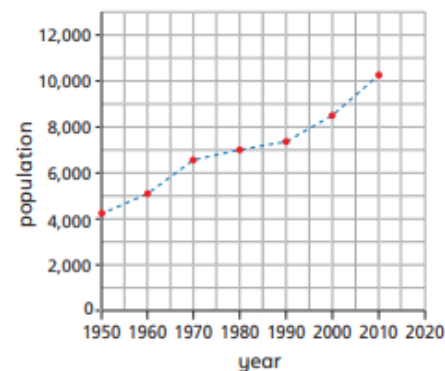
- b) On Tuesday, the following temperatures were recorded.

Time	09:00	10:00	11:00	12:00	13:00	14:00	15:00
Temperature ($^{\circ}\text{C}$)	13	16	21	22	22	19	17

Add the new information to your line graph using a different colour and complete the key.

- c) At what time was it hotter on Tuesday than on Monday?

- 4 The graph shows the population of a town from 1950 to 2010



- a) Circle the correct word to complete the statement.

The population of the town **increased** / **decreased** from 1950 to 2010

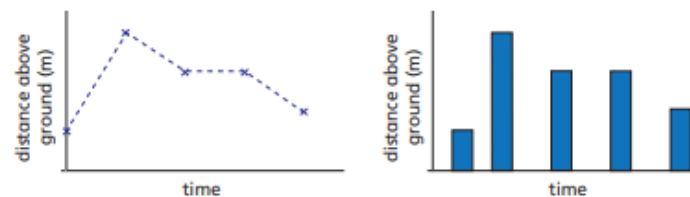
- b) Estimate the highest recorded population.

- c) In what year did the population first reach 7,000?

- d) Estimate the population in 1970

- e) Estimate the population in 2006

- 5 The line graph and bar chart both show the distance above ground of a bird.

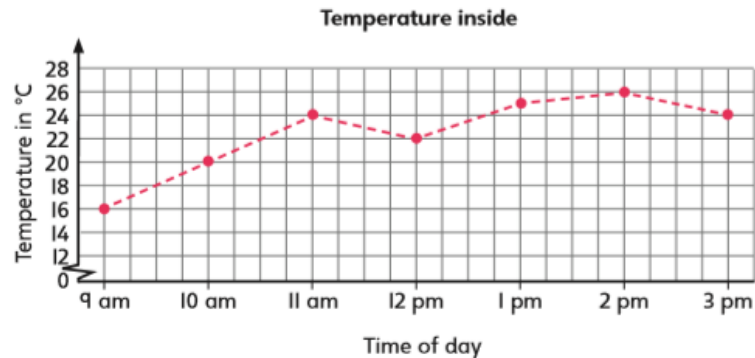


Which representation is more appropriate?

Explain your choice to a partner.

Challenge

This line graph shows the temperature inside Emily's house on Tuesday.



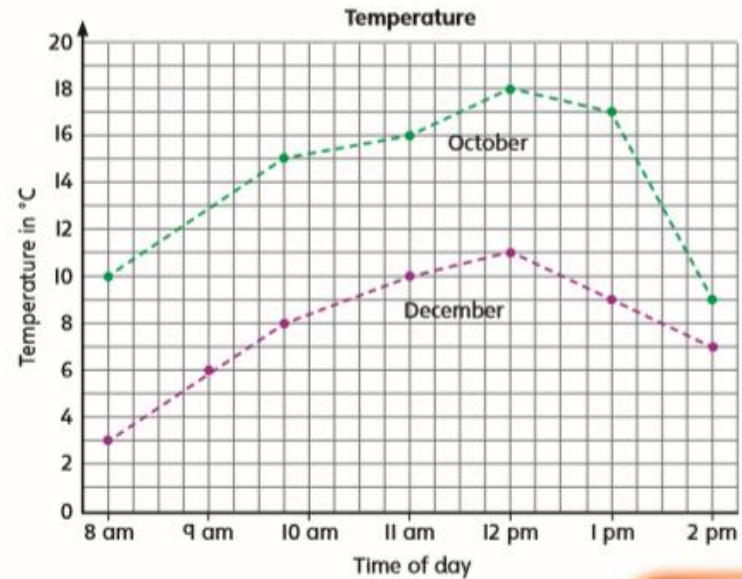
- 1
 - a) What was the temperature at 11 am?
 - b) What was the temperature at 1 pm?
 - c) What was the temperature at 2:30 pm?
 - d) At what time was it the warmest inside Emily's house?
 - e) At what time was the temperature 21 °C?
- 2 For how long is the temperature above 24 °C in Emily's house?

I am going to start by going across from the temperature on the vertical axis.



- 3 The temperature in a small town was measured on the first day of October and the first of December.

The results are shown on the line graph below.



- a) What was the temperature at midday on 1 December?
- b) What is the difference in the temperature at 2 pm on 1 December and 2 pm on 1 October?
- c) What is the same and what is different about the temperature on 1 October and 1 December?

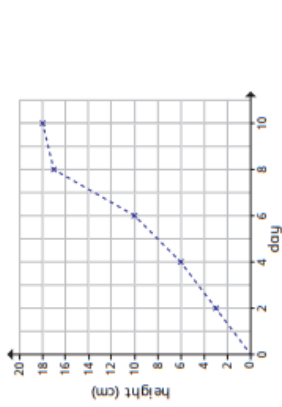
Line graphs can show more than one set of data. Each set of data has its own line.



Introducing line graphs



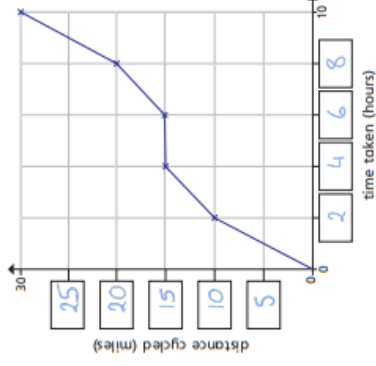
- 1 The line graph shows the growth of some cress over 10 days.



- a) How tall was the cress on Day 2? 3 cm
- b) On what day did the cress reach 10 cm? day 6
- c) Estimate the height of the cress on Day 5 8 cm
- d) Estimate when the cress will reach a height of 14 cm. day 7
- e) Between which two consecutive days did the cress grow the most? day 6 and day 7 (or 7 & 8)

Answers

- 2 The line graph shows the distance a cyclist travels on a bike ride.
a) Fill in the missing labels.



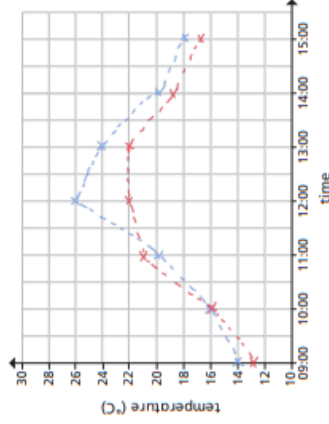
- b) How long did it take the cyclist to travel 10 miles? 2 hours
- c) How far had the cyclist travelled after 4 hours? 15 miles
- d) How far did the cyclist travel in total? 30 miles
- e) How far did the cyclist travel between 4 and 6 hours? 0 miles
- What might have happened during this time?

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- 3 The table shows the temperature outside on Monday.

Time	09:00	10:00	11:00	12:00	13:00	14:00	15:00
Temperature (°C)	14	16	20	26	24	20	18

- a) Use the information in the table to complete the line graph.



Key Monday — Tuesday - - -

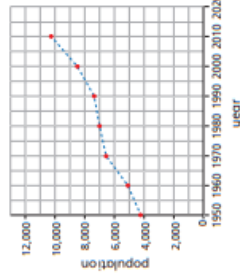
- b) On Tuesday, the following temperatures were recorded.

Time	09:00	10:00	11:00	12:00	13:00	14:00	15:00
Temperature (°C)	13	16	21	22	19	17	

Add the new information to your line graph using a different colour and complete the key.

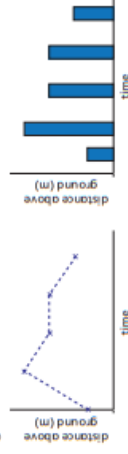
- c) At what time was it hotter on Tuesday than on Monday? 11:00

- 4 The graph shows the population of a town from 1950 to 2010



- a) Circle the correct word to complete the statement.
The population of the town increased / decreased from 1950 to 2010
- b) Estimate the highest recorded population. 10,000
- c) In what year did the population first reach 7,000? 1980
- d) Estimate the population in 1970 6,500
- e) Estimate the population in 2006 9,500

- 5 The line graph and bar chart both show the distance above ground of a bird.



Which representation is more appropriate? line graph
Explain your choice to a partner.

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Emily's House - Answers

1 a): The temperature was 24 °C at 11 am.

1 b): The temperature was 25 °C at 1 pm.

1 c): The temperature was 25 °C at 2:30 pm.

1 d): It was warmest at 2 pm.

1 e): The temperature was 21 °C at 10:15 am.

2: It is above 24 °C for approximately 2 and a half hours (from 12:30 pm to 3 pm).

3 a): The temperature was 11 °C.

3 b): The difference is 2 °C.

3 c): For example:

Same: It was warmest at 12 pm on both days.

Different: It was warmer at 8 am than it was at 2 pm on 1 October, but the opposite is true of 1 December (warmer at 2 pm than at 8 am).

