

Using line graphs

Construct and use line graphs to solve problems



Challenge

1

- 1 Copy the table below. Then use the relationship $8 \text{ km} \approx 5 \text{ miles}$ to complete it.

Kilometres	0	8	16	24	32	80
Miles	0	5				

- 2 Use the data from the completed table in Question 1 to draw a line graph for converting between miles and kilometres. Make sure you join the points with a straight line and that your graph is big enough to extend your line to the point (80, 50).
- 3 Use your graph to convert these distances to kilometres.
- a 25 miles b 30 miles c 45 miles
- 4 Use your graph to convert these distances to miles.
- a 20 km b 28 km c 44 km

You will need:

- 1 cm squared paper
- ruler

Challenge

2

- 1 Copy the table below. Then use the relationship 6 minutes to travel a distance of 5 kilometres to complete it.

Time (min)	0	6	12	18	24	72
Distance (km)	0	5				

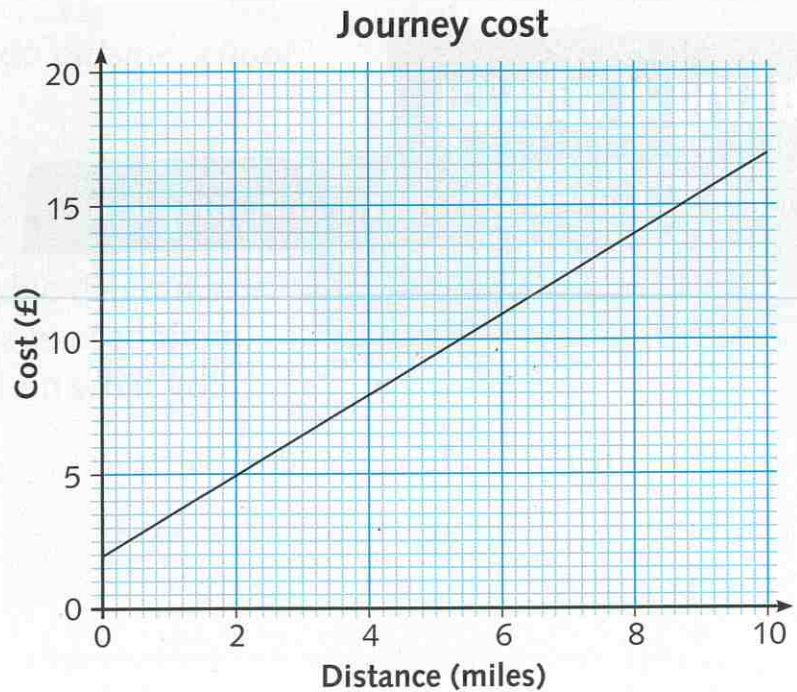
- 2 Use the data from the completed table in Question 1 to draw a time distance graph. Make sure you join the points with a straight line and that your graph is big enough to extend your line to the point (72, 60).
- 3 Find the distance travelled in: a 36 minutes b 60 minutes
- 4 Find the time taken to travel: a 35 km b 45 km

You will need:

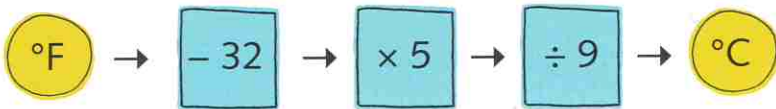
- 1 cm squared paper
- ruler

5 The graph on the right shows that a taxi driver charges £2 for a pick-up fee and £1.50 per mile.

- a What is the cost for a journey of:
- i 2 miles? ii 6 miles?
 - iii 10 miles? iv 5 miles?
- b What distance was travelled if the fare was:
- i £12.50? ii £15.50?



A function machine converts °F to °C using the rule:



You will need:

- Resource 49: °F to °C graph paper
- 1 cm squared paper
- ruler

1 Copy the table below. Use the function machine to complete the values for °C rounded to the nearest degree.

°F	32	41	61	82	95	110
°C						

2 Plot the points on Resource 49: °F to °C graph paper and draw the conversion graph.

3 Copy the table on the right and use your graph to convert the temperatures to °C, to the nearest degree.

City	°F	°C
Boston	77	
Canberra	52	
Madrid	81	
Tokyo	72	
Dubai	102	
Luxor	106	
Paris	66	
Bangkok	91	

