



Colin and Coco's Deliberate Practice

Year 6 Unit 14

Statistics





Contents

This pack of deliberate practice is designed to be used flexibly to secure the manageable steps of this unit.

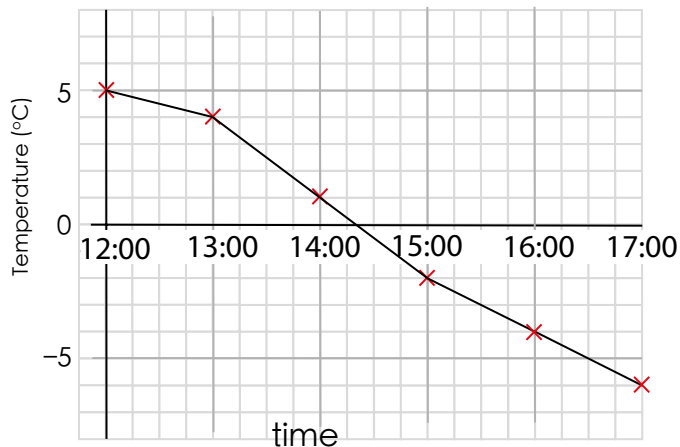
The table below indicates which activities are linked to which manageable steps.

	Do It	Challenge It	Play It
Interpret line graphs	1		
Construct line graphs		1	
Interpret pie charts	2		
Construct a pie chart by measuring angles			1
Understand the meaning of 'average' and calculate the mean of a set of discrete data		2	2
Interpret the mean of a set of discrete data		2	



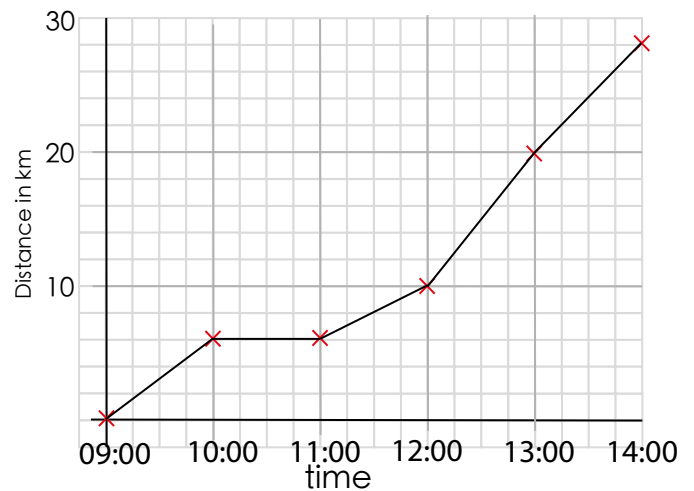
Do It 1

1. The graph shows the temperature during an afternoon.



- At what time is the temperature 4°C ?
- What is the temperature at 3p.m.?
- What is the difference in the temperature at 2p.m. and 4p.m.?

2. The graph shows the distance a cyclist travels.



- At what time does the cyclist stop for a rest?
- How far does the cyclist travel between 11a.m. and 1p.m.?
- By what time has he travelled 24km?

Construct a line graph that matches the information.

Challenge It 1

Billy sets off from his home on his bike at 9a.m.

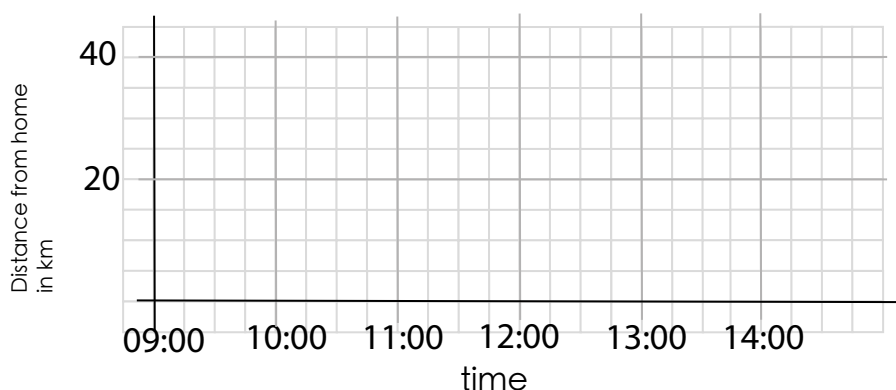
He cycles 25km non stop which takes him one hour and a quarter.

He then stops for a rest for one hour.

He sets off again and arrives at his friend's house 40km from home at 12:00

At 12:45 he sets off and takes 1 hours 45 minutes to get home.

Use the axes below to draw the graph.



Create your own line graph story.



Pie Chart Game

Play It 1

You need:

1 - 6 dice

Protractor and ruler

Pie chart template for each player

To play:

Choose a total number of people from the list below to be represented by their pie chart.

18 20 24 30 36

Players take turns to throw the dice. This will be the number of people in their first sector.

They work out the angle and draw this sector on their pie chart.

Repeat for two more sectors.

After three goes each, players calculate how many people would be in the remaining sector and the size of the angle.

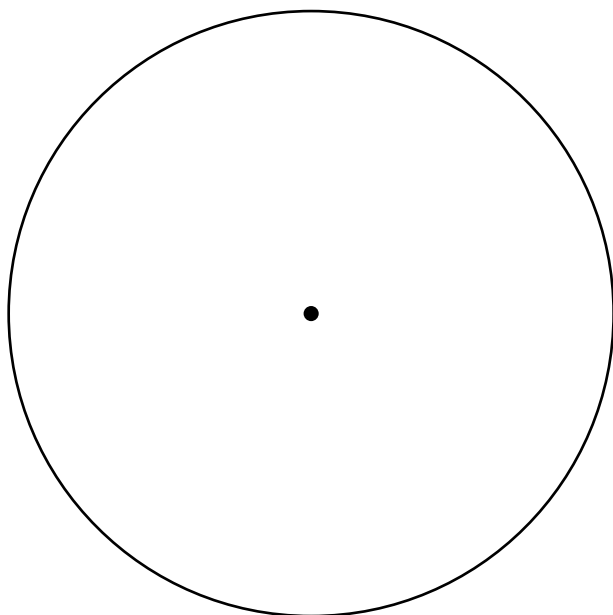
The player with the largest angle wins a point.

Play again with a different total number of people from the list above.

To win:

The winner is the first player to score 3 points.

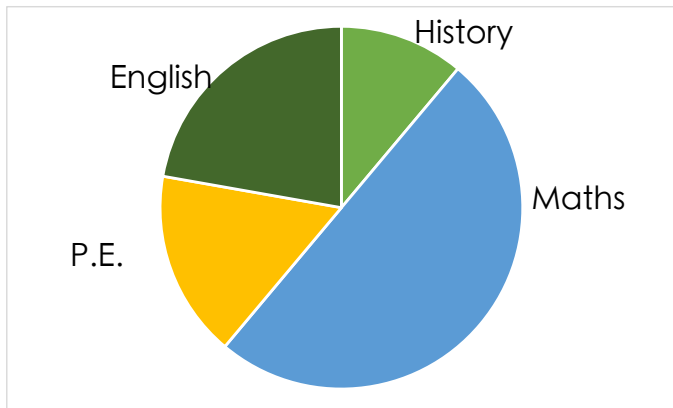
Total number of people:		
Sector	Number of people	Size of angle
1		
2		
3		
4		





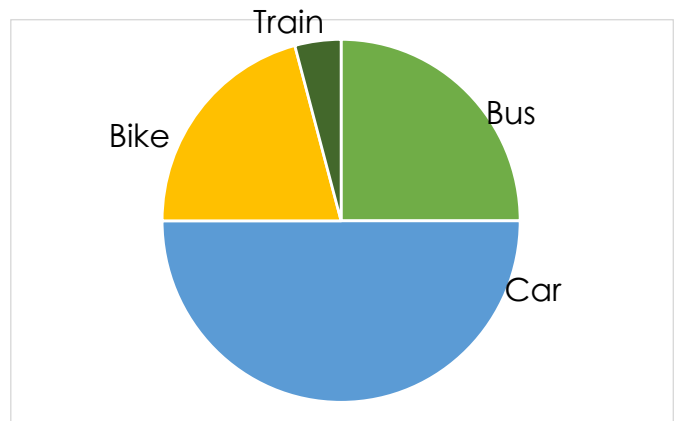
Do It 2

The pie chart shows favourite school subjects for 36 children.



- How many people like Maths best?
- Which subject is least popular?
- "9 children like English."
Do you agree? Explain your answer.

The pie chart shows ways people travel to work.



- 6 people travel by bus.
- How many people were asked in total?
 - What is the total number of people who travel by train and bike?
 - What percentage of the people travel by bus?

Challenge It 2

Find the missing digits.
The mean has been calculated for each group of numbers.
Solve each one in several ways.

$$\square, 7, \square, 4 \quad \text{mean is } \square$$

$$\square, 1\square, 5 \quad \text{mean is } 8$$

$$2\square, 1\square, \square\square, 1\square \quad \text{mean is } 20$$

Solve them all together using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each.

Write a story for each average.



Mean Game

Play It 2

You need:

0 - 9 dice

To play:

Choose a number between 3 and 7 to be the mean.

Player 1 throws the dice three times.

They estimate or calculate the mean of the three numbers they have thrown.

They can then choose to throw the dice up to three more times to get a mean as close as they can to the chosen mean.

For example: target mean 6

Player 1: throws 9, 6 and 8 (total 23, estimates the mean is just over 7)
chooses to throw again and throws 1
calculates total of 24, mean of 6 and so chooses to stop.

Then player 2 has a go, throwing the dice three times, then choosing whether to throw again or not.

The player with the mean closest to the target scores a point.

To win:

The winner is the first player to score ten points.