



# Statistics



# Series G – Statistics

## Contents

Student book answers _____	1
Assessment _____	5
Student progress record _____	14
Assessment answers _____	15
Objectives _____	16

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# Series G – Statistics

## Pages 1–2

1a 400

b 160

c 80

d 120

e 280

### 2a World Aid Fund-raiser

	£		
	£		
£	£		£
£	£	£	£
£	£	£	£
£	£	£	£
£	£	£	£
£	£	£	£
5H	5F	6S	6P

Key: £ = £200

3a 6P

b Marshmallows

c 59

d Chocolate frogs

e	5G	5F	6P	6S	Total
Marshmallows	4	6	6	9	25
Mint chews	4	12	3	3	22
Chocolate frogs	8	10	15	12	45
Fruity stix	7	8	9	6	30

f Chocolate frogs

## Pages 3–6

1a Game 1

b Game 4

c 185

d 10

2	Cookies	Chocolate
Sam	14	30
Naomi	14	10
Gus	24	20
Paddy	26	26
Amber	24	22

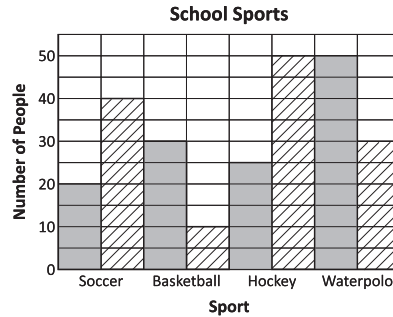
2a Chocolate

b Paddy

c £2.50 + £1.50 = £4

26 × £4 = £104  
(of each)

3



4a, b Answers will vary.

5a

Meals	Slow music		Fast music	
	Amount sold	Sales	Amount sold	Sales
Adult meal deal (£7)	50	£350	40	£280
Kids meal deal (£5)	10	£50	30	£150
Deluxe burgers (£6)	25	£150	70	£420
Classic burgers (£3)	25	£75	10	£30
<b>Total</b>	<b>110</b>	<b>£625</b>	<b>150</b>	<b>£880</b>

b Fast music

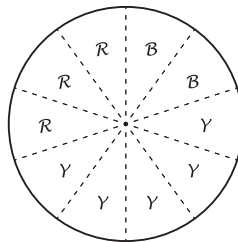
c Yes

d Fast music

## Pages 7–8

1

Favourite colours of 10 people



Category	Amount	Fraction	%
Chocolate	30	$\frac{3}{10}$	30%
Vanilla	20	$\frac{2}{10}$	20%
Caramel	10	$\frac{1}{10}$	10%
Strawberry	30	$\frac{3}{10}$	30%
Rainbow	10	$\frac{1}{10}$	10%
<b>Total</b>	<b>100</b>	$\frac{10}{10}$	<b>100%</b>

2a True

b False

c True

3a

Category	Amount	Fraction
Chicken	16	$\frac{4}{10}$
Ham	8	$\frac{2}{10}$
Beef	16	$\frac{4}{10}$
<b>Total</b>	<b>40</b>	$\frac{10}{10}$

b Chicken: 4

Ham: 2

Beef: 4

4a Concert tickets: 15

Grocery vouchers: 30

Money: 15

b Concert tickets: 25

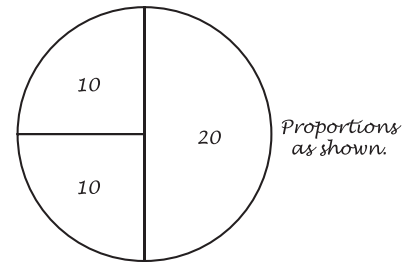
Grocery vouchers: 50

Money: 25

5

Category	Amount	Fraction
-	10	$\frac{10}{40}$ or $\frac{1}{4}$
-	10	$\frac{10}{40}$ or $\frac{1}{4}$
-	20	$\frac{20}{40}$ or $\frac{1}{2}$
<b>Total</b>	<b>40</b>	$\frac{40}{40}$

Answers will vary.



## Pages 9–12

1

Category	Amount	Fraction	%
Chocolate	30	$\frac{3}{10}$	30%
Vanilla	20	$\frac{2}{10}$	20%
Caramel	10	$\frac{1}{10}$	10%
Strawberry	30	$\frac{3}{10}$	30%
Rainbow	10	$\frac{1}{10}$	10%
<b>Total</b>	<b>100</b>	$\frac{10}{10}$	<b>100%</b>

# Series G – Statistics

## Pages 9–12

Activity	Amount	Fraction	%
Raffle	50	$\frac{1}{10}$	10%
Pet Day	100	$\frac{2}{10}$	20%
Talent Contest	100	$\frac{2}{10}$	20%
Mufti Day	150	$\frac{3}{10}$	30%
Bike Day	100	$\frac{2}{10}$	20%
<b>Total</b>	<b>500</b>	$\frac{10}{10}$	<b>100%</b>

3a 50%

b  $\frac{1}{4}$

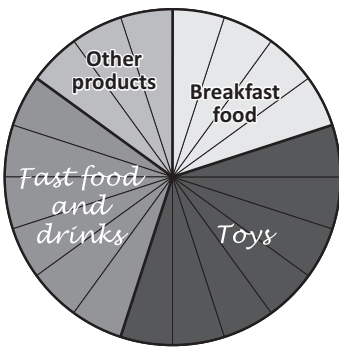
c TV Series and News & Current Events; 12.5%

d 32

e 8

f 8

4 *Types of Ads*



a 200

b 10

c 20%;  $\frac{1}{5}$

d Fast food and drinks and breakfast food OR other products and toys.

	Number who can taste the difference	Number who can't taste the difference
Sam	40	24
Kia	30	50
Kate	72	24
<b>Total</b>	<b>142</b>	<b>98</b>

b More people can taste the difference than can't taste the difference.

6a 140

b 10

7 Answers will vary.

8 Answers will vary.

## Pages 13–14

1a 30 minutes

b 45 minutes

c 2 hours

2a 

BJ Roy	Makeup artist	Bubble machine	Magician	Fond	Drinks
--------	---------------	----------------	----------	------	--------

b £1,000

c 25%

d Answers will vary.

3a Callum

b Lauren

c Lauren

d  $\frac{4}{10} = \frac{2}{5}$

e Callum: Plan A

Reason: Cheapest for text messages.

Lauren: Plan B

Reason: Cheapest for peak and off peak calls.

Ali: Plan C

Reason: Cheapest for internet.

## Pages 15–16

	January	February	March	April	May	June
Sydney	25	26	24	23	16	15
London	5	7	10	14	15	17
Dubai	22	25	27	35	36	38

b False;

True;

True

Value of Jenna's Car	
Year	Value
2001	£25,000
2002	£20,000
2003	£17,500
2004	£15,000
2005	£12,500
2006	£10,000
2007	£7,500

2b £17,500

c £7,500

d 2001–2002

3a 7,000

b 5,000

c 2,500

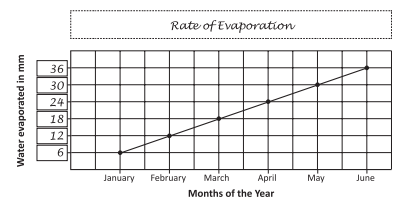
d Ivan's Ice Creamery because the crazy flavour combinations would not sell as well as regular flavours.

## Pages 17–19

1a 12, 18, 24, 30, 36

b Answers may vary.

Sample answer:



c Answers may vary.

2a 100, 150, 200, 250, 200, 350, 400, 450, 500

b Answers may vary.

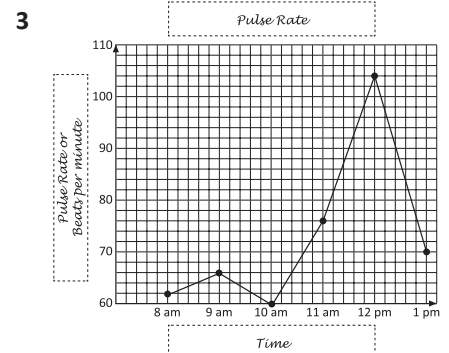
c 200 km

d 72 litres

e 75 km

f 600 km

g 2

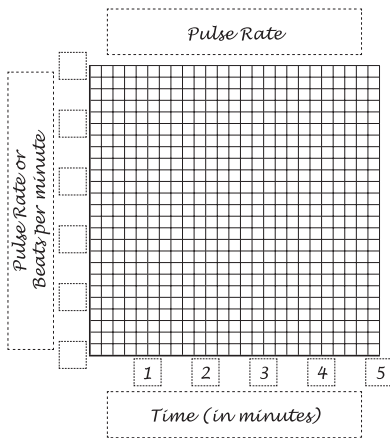


3

# Series G – Statistics

## Pages 17–19

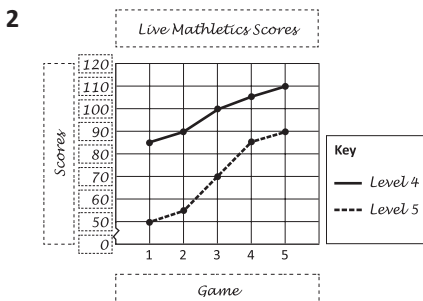
- 4 Answers may vary.  
Sample answer:



## Pages 20–22

- 1a Because there is no data.

- b 1 The vertical axis shows us the money.  
2 The scale is going up by 10.  
3 Sales of Combat Copter have been increasing. Sales of Xray Spex have decreased.

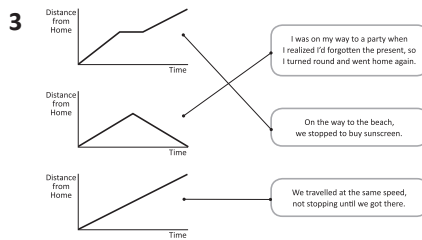


- 3 Answers will vary.  
4 Answers will vary.  
5 Answers will vary.

## Pages 23–24

- 1a 2 hours  
b 160 km  
c 80 km  
d 1 hour
- 2a 6 am  
b 7 am, 7.30 am  
c 225

- d 9 am  
e 11 am  
f 100



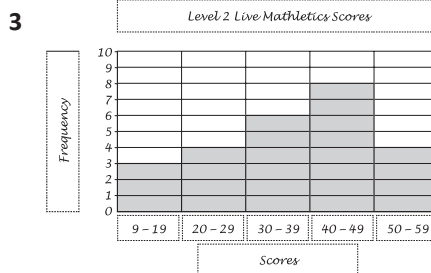
## Pages 25–26

1a

Attendance at Previous Disco		
Age	Tally	Frequency
5–8		20
9–10		8
11–13		22

- 2a Score groupings may vary.
- b Score groupings may vary.  
Sample answer:

Level 2 Live Mathematics Scores		
Scores	Tally	Frequency
9–19		3
20–29		4
30–39		6
40–49		8
50–59		4



Level 2 is too easy for most of the students in this class.

## Page 27

- 1a  $33 - 2 = 31$   
Range = 31
- b  $148 - 55 = 93$   
Range = 93
- c  $11.2 - 4.5 = 6.7$   
Range = 6.7

- 2a  $£820 - £195 = £625$   
b  $£1,235 - £150 = £1,085$   
c In Suburb 2, there is a wider variety of houses.

## Pages 28–29

- 1a  $\frac{20 + 6 + 18 + 4}{4} = 12$   
b  $\frac{13 + 7 + 5 + 8 + 3 + 2 + 4}{7} = 6$   
c  $\frac{45 + 46 + 47 + 50 + 57}{5} = 49$

- 2a £50

- b £5

- 3a 1.77 m

- b Will Smith, Nicole Kidman, David Beckham, Kevin Rudd and Hugh Jackman;  
Mean height: 1.834 m

- c 1.75 m

- 4 Answers will vary.

- 5 Answers will vary.

## Page 30

- 1a 2, 3, 4, 5, 7, 8, 13;  
5
- b 4, 6, 7, 18, 22, 23;  
7 + 18 or 12.5
- c 2.3, 3.6, 3.7, 4.1, 4.5, 7.3, 8.2;  
4.1
- d These were already ordered.  
Median 48.5

- 2a Nicole Richie 1.55 m  
Tom Cruise 1.73 m  
Paris Hilton 1.73 m  
Katie Holmes 1.75 m  
Kevin Rudd 1.79 m  
David Beckham 1.8 m  
Nicole Kidman 1.81 m  
Will Smith 1.88 m  
Hugh Jackman 1.89 m

- b Kevin Rudd 1.79 m

- 3 Answers will vary.

# Series G – Statistics

## Pages 31–32

1a

tens	ones
2	9 0
1	7 7 8 9 1 3 9 7 7 3
0	

The mode is: 17

b

tens	ones
3	2 1
2	4 5 6 3 7
1	8 3 6 8 7 6
0	

The mode is: 18 and 16

c

ones	tenths
2	2 1 3
1	7 6 8 6 5 6 7
0	4

The mode is: 1.6

2a 7; 15; 11;

The mode is: 2

b 7; 5; 10; 8;

The mode is: 7

3a Pupils may choose to present data on a stem and leaf plot or on a frequency table.

The mode is 11 min.

## Pages 33–34

1a £19

b £13

c The median as most figures are closer to £13 than to £19.

d No

e £50

2 Answers will vary.

3a

Type	Week 1	Week 2	Week 3	Week 4	TOTAL
Strawberry Kiss	155	150	125	146	576
Mud Angel	207	185	167	193	752
Vanilla Cream	25	95	33	143	296
Blueberry Bubble	75	50	65	22	212
<b>TOTAL</b>	<b>462</b>	<b>480</b>	<b>390</b>	<b>504</b>	<b>1,836</b>

3b

Type	Mean
Strawberry Kiss	144
Mud Angel	188
Vanilla Cream	74
Blueberry Bubble	53

c

Type	Range
Strawberry Kiss	30
Mud Angel	40
Vanilla Cream	118
Blueberry Bubble	53

d 459

e Mud Angel

f Blueberry Bubble

g Vanilla Cream – it has the widest range.

h Answers will vary.

## Pages 35–37

1a Survey 2 – the questions are direct, requiring specific answers.

b Survey 2 – the categories are already clearly set.

c No, because they just get kids' opinions and they don't usually buy the peanut butter.

d Answers will vary.

2 Survey 1: Answers will vary.  
Survey 2: Answers will vary.

3 Answers will vary.

4 Answers will vary.

5a–d Answers will vary.

## Page 39

1 Graph 3. The scale used emphasizes the increase in sales since she started in November.

2a 2 km per litre.

b Union Cars is 3 times longer.

c The broken scale and the way the scale is numbered.

3 Answers will vary.

## Page 41

**What to do**

Answers will vary.

**What to do next**

Answers will vary.

## Page 42

a Answers will vary but must add up to 110.

b To score an average of 7.2, all 6 dives must add to 43.2.

His 5 dives add to 35.5 so his final dive must score 7.7.

$$7.7 + 35.5 = 43.2$$

It is likely as he has scored 8.3 and 9.2, so we know he can do it.

c  $5 \times 24 = 120$ .

The total attendance is 120.

$120 - 32 = 88$ . If 32 people came on the last day, the attendances on the other 4 days add to 88.

There are many different combinations. One could be 22 on each of the days.

d One possible answer is:

9 7 6 4 3 3 3

The values add to 35. The mean is 5.  
 $35 \div 7 = 5$

4 is the median number and 3 occurs most frequently.

## Page 43

**What to do**

Observe students.

**What to do next**

Answers will vary.

## Page 44

**What to do**

Observe students.

**What to do next**

Answers will vary.

## Page 45

**What to do**

Answers will vary.

**What to do next**

Answers will vary.

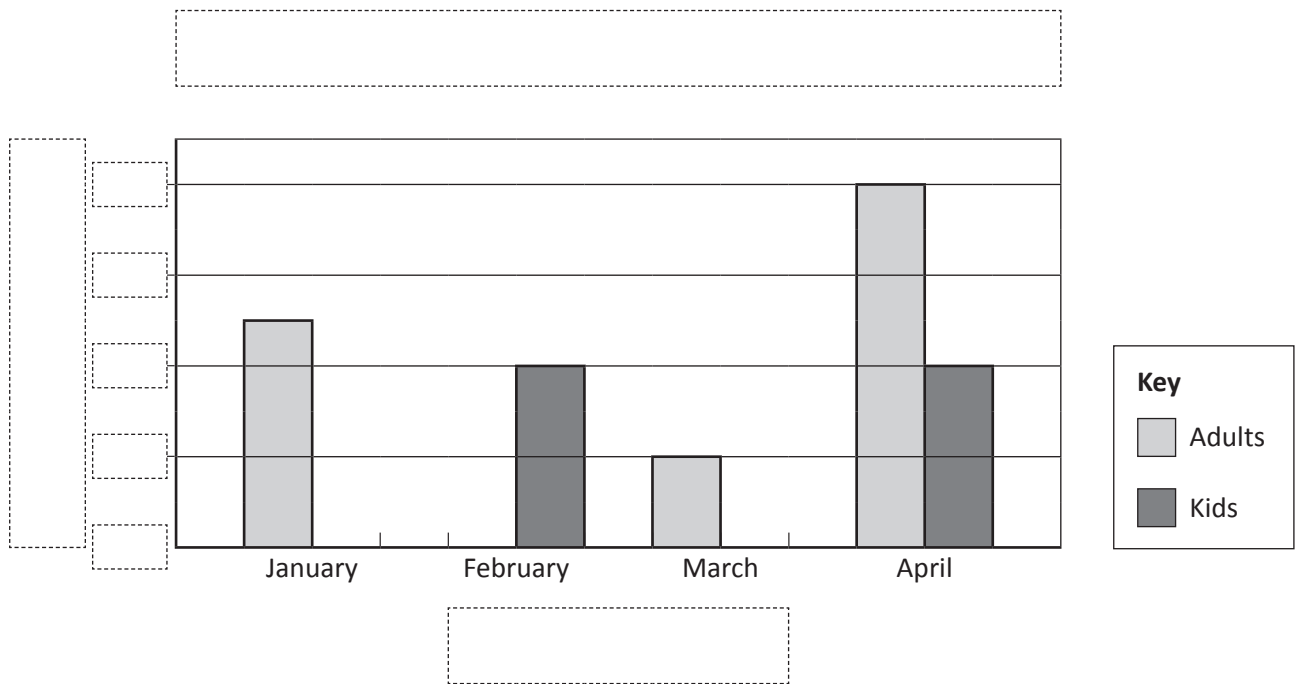
# Double bar charts

Name \_\_\_\_\_

1 The following table shows admissions to a theme park called Magic Town.

Admission Numbers to Magic Town				
	January	February	March	April
Adults		75		200
Kids	200		75	100

Complete the table and graph so they display the same data:



2 Use the information in the table (at the top) to answer these questions:

- a Which month was the most popular for kids' birthday parties?
- b Which month were the owners concerned about admission numbers?
- c Which month do you think the theme park had a promotion of half price adult tickets?
- d Why do you think the promotion was in this month? (**Hint:** look at the numbers for March.)  
 \_\_\_\_\_  
 \_\_\_\_\_

Skills	Not yet	Kind of	Got it
• Displays data as a double bar chart labelled correctly using a scale			
• Interprets information from a double bar chart			

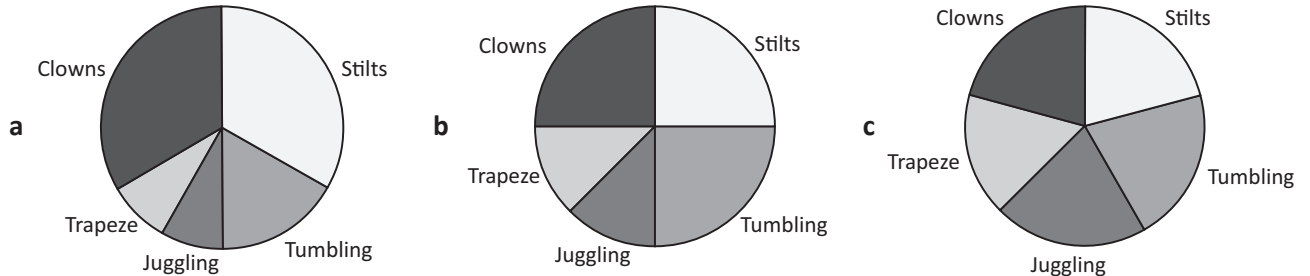
# Pie charts

Name \_\_\_\_\_

**1** 48 Year 11 pupils had to choose their subject for circus school.

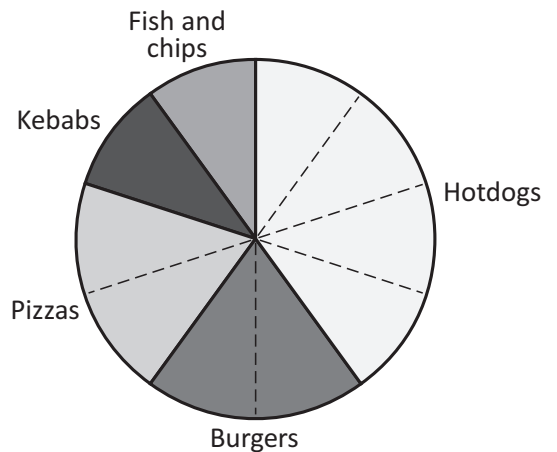
The results were: Clowns 16 Stilts 16 Tumbling 8 Juggling 4 Trapeze 4

Circle the pie chart which correctly shows this information:



**2** 100 people were surveyed about their favourite fast food. This pie chart shows the results of this survey.

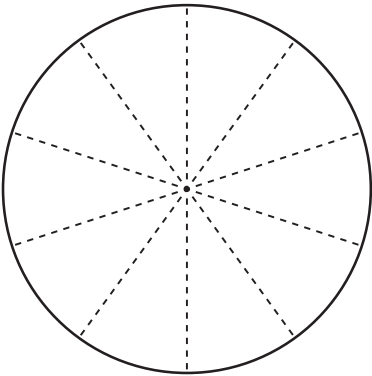
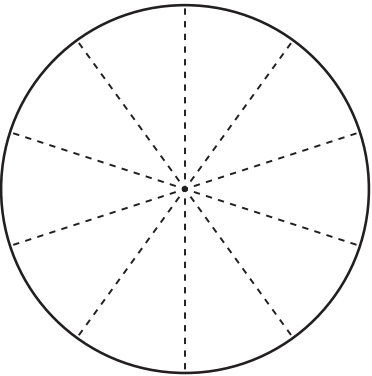
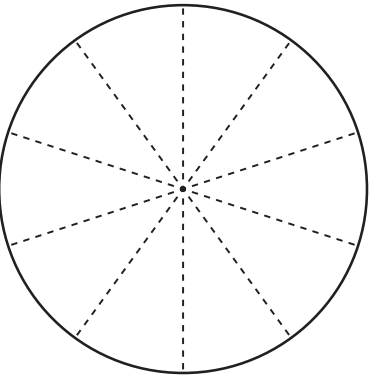
- a What fraction liked hotdogs?
- b What fraction liked burgers?
- c What percentage liked fish and chips?
- d How many people liked pizzas or kebabs?



Skills	Not yet	Kind of	Got it
• Correctly identifies the pie chart that matches the data set			
• Interprets the data on a pie chart as fractions, percentages and whole numbers			



**3 Show the information given on the pie charts.**

<p><b>a</b> Jo won £1,000 in a radio competition. This is how she spent it:</p> <p>£300 mp3 player                  £200 Savings                  £400 Holiday                  £100 Running shoes</p>	<p><b>b</b> 500 kids in Year 6 voted on their next fund-raising activity. These are the results:</p> <p>50 Raffle                  150 Pet Day                  100 Bike Day                  200 Talent Contest</p>	<p><b>c</b> Year 6 at Grange Grammar School organised a cake stall to raise money for new books for the school library. They made £360 profit like this:</p> <p>£36 Chocolate cakes                  £72 Biscuits                  £108 Doughnuts                  £144 Cream cakes</p>
		

**4 Look carefully at the last pie chart (in Question 1c). Use the information to answer the following questions.**

- a What fraction of the profit came from doughnuts?
  
- b What percentage of the profit came from chocolate cakes?
  
- c What percentage of the profit came from biscuits?
  
- d How much profit (in pounds) came from cream cakes and chocolate cakes together?

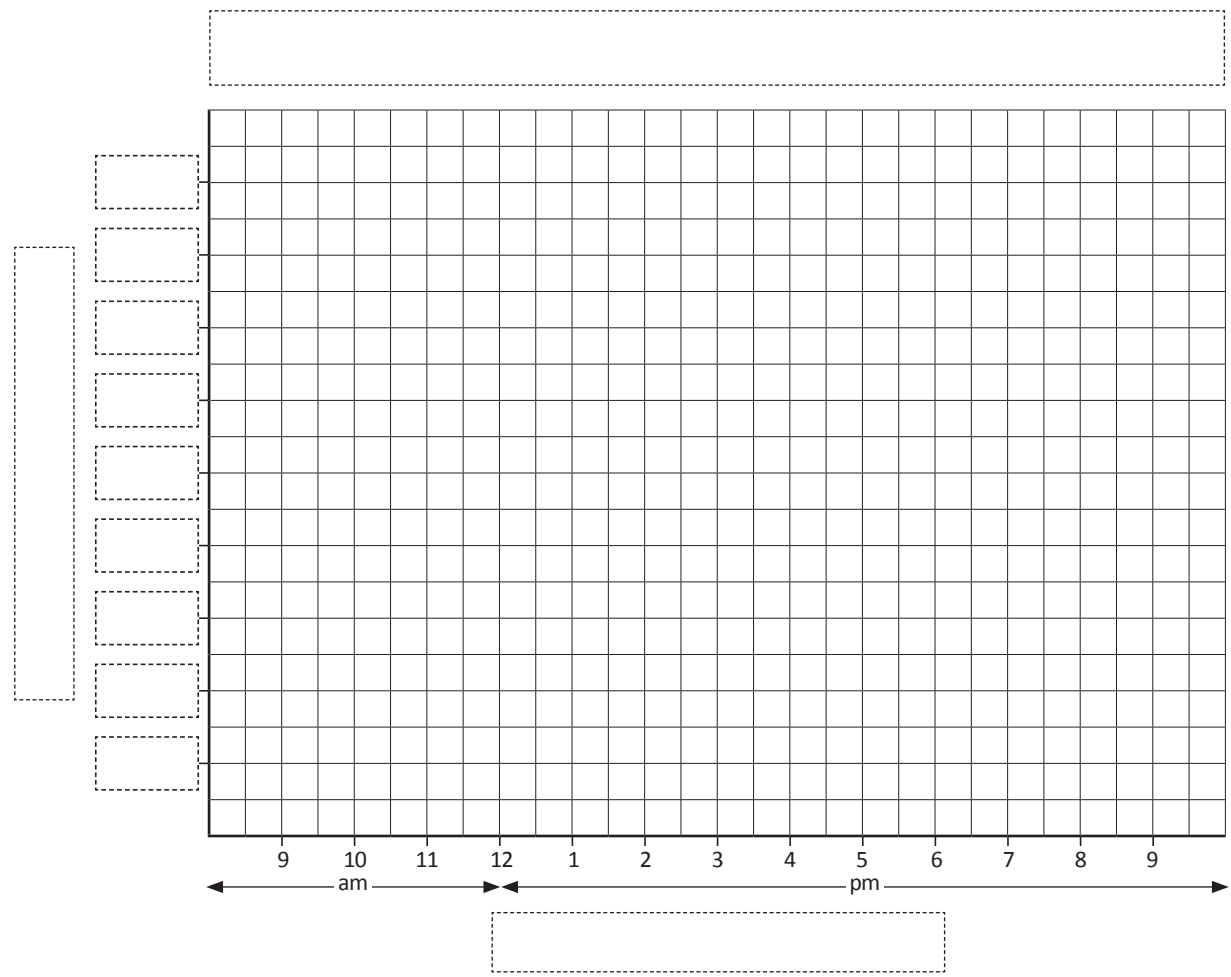
Skills	Not yet	Kind of	Got it
• Creates pie chart from data by calculating proportions			
• Interprets the data on a pie chart as fractions, percentages and whole numbers			

# Line graphs

Name \_\_\_\_\_

1 On Thursday, Phoebe recorded the temperature every hour from 9 am to 9 pm.

Time	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm
Temperature	11 °C	13 °C	15 °C	18 °C	18 °C	17 °C	16 °C	16 °C	14 °C	14 °C	11 °C	11 °C	10 °C



- a Draw a line graph to show the temperatures recorded.
- b Write a title for the line graph.
- c Label the vertical axis with an appropriate scale.
- d Label both axes.
- e Circle the plot that shows the second highest temperature.
- f What might the temperature have been at 4:30 pm?

Skills	Not yet	Kind of	Got it
• Constructs a line graph that shows continuous change			
• Uses an appropriate scale			
• Interprets data based on information shown between plotted points			

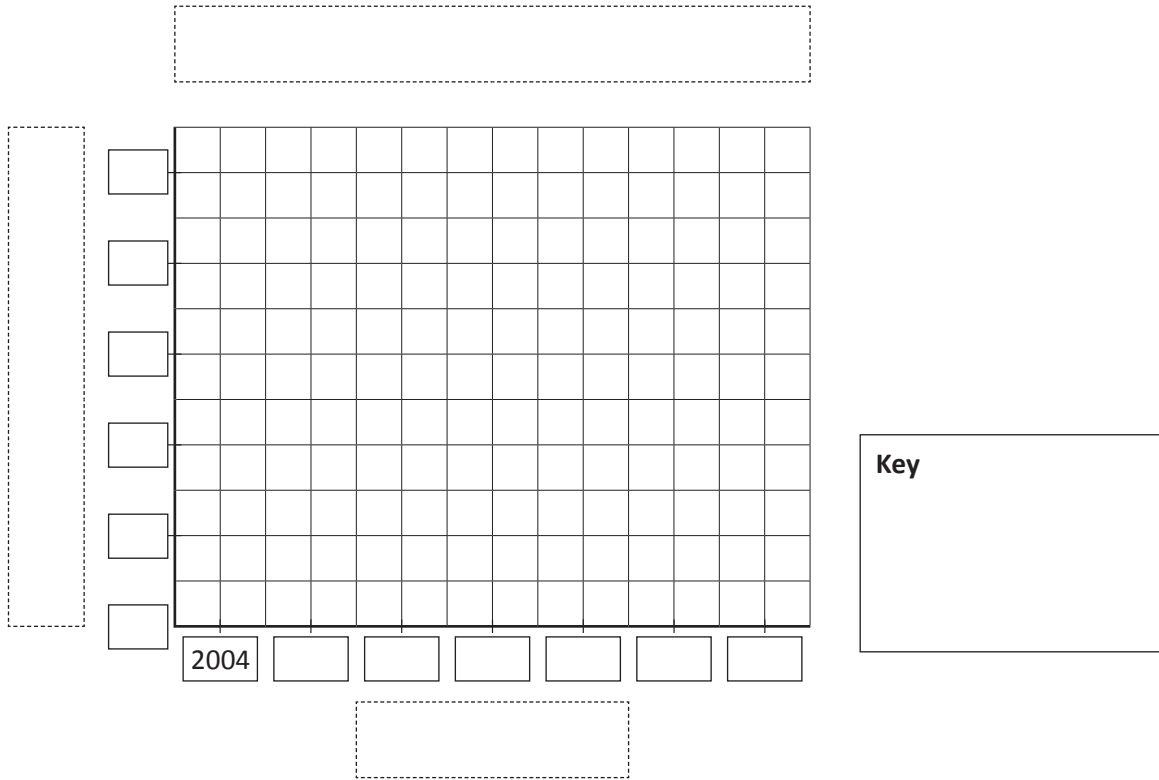
# Line graphs

Name \_\_\_\_\_

- 2 This table shows the number of cancelled gym memberships at the end of each calendar year for males and females at Fitbods Gym.

	2004	2005	2006	2007	2008	2009	2010
Males	30	20	40	45	10	50	30
Females	25	30	20	20	15	35	45

Create and label a double line graph to show this data:



- 3 Answer the questions about the data above:

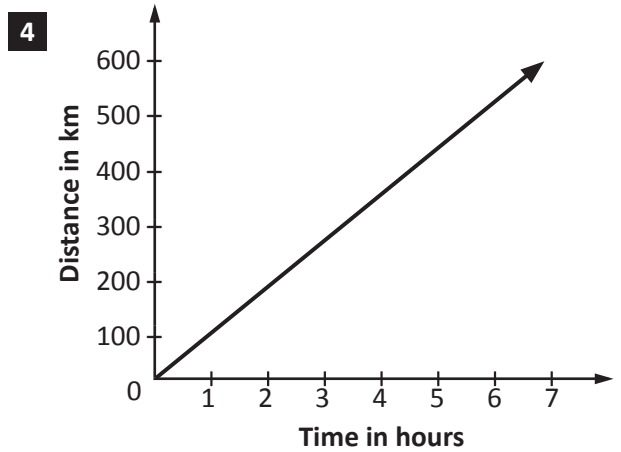
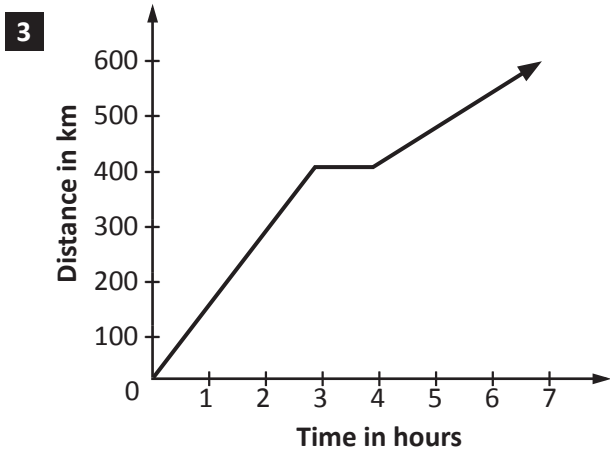
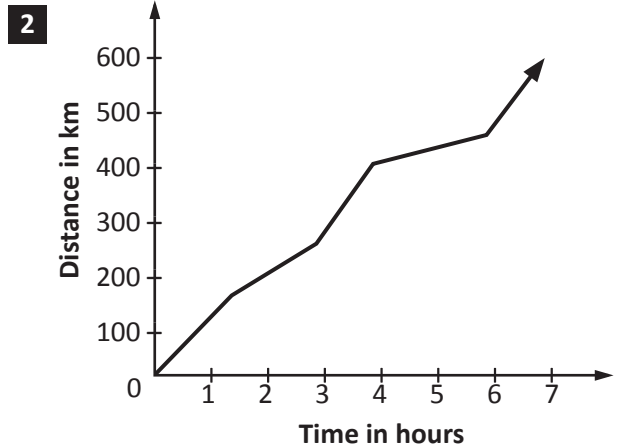
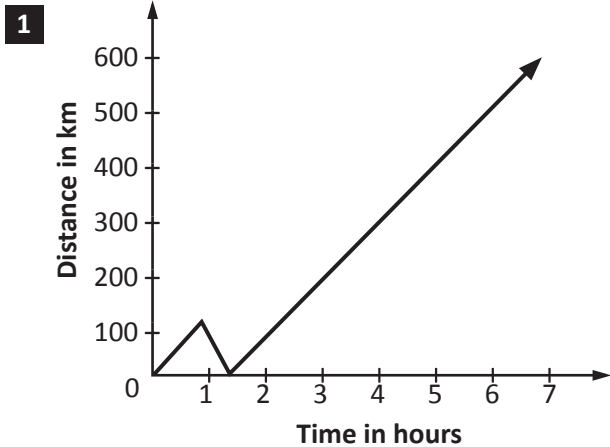
- a How many cancelled gym memberships in 2006 altogether?
- b In 2007, how many more males cancelled their memberships than females?
- c In which year do you think Fitbods Gym had free child minding services?
- d Estimate the number of females who cancelled midway through 2008.

Skills	Not yet	Kind of	Got it
• Constructs a line graph that shows continuous change			
• Uses an appropriate scale			
• Interprets data based on information shown between plotted points			

# Travel graphs

Name \_\_\_\_\_

1 Look carefully at the following travel graphs:



Match each travel graph to one of the following stories by writing the graph number.

a The Devlin family travelled from London to Newcastle by car. There was not much traffic at the start of their journey but they slowed down after 4 hours of travelling.

b Yasmin left the coffee shop and started her long car ride to her holiday home down south. After awhile, she realised she'd left her mobile phone in the coffee shop and had to return to collect it.

c Michelle drove at a constant speed to her holiday home. In 6 hours she had driven 500 km.

d Sara and Zoe had driven for 400 km when they decided to stop for a break before resuming their journey.

Skills	Not yet	Kind of	Got it
• Reads and interprets travel graphs			

# Collecting and analysing data

Name \_\_\_\_\_

**1 Find the mean of each set of scores. You may use a calculator if you wish.**

a 8, 4, 7, 6, 5, 3, 2, 1, 9 Mean

b 24, 12, 16, 28, 32, 46, 52, 30 Mean

c 12, 15, 19, 26, 28 Mean

d 158, 172, 159, 164, 167 Mean

**2 Find the mode for each set of scores:**

a 5, 6, 6, 7, 7, 7, 7, 8, 9 Mode

b 22, 35, 35, 28, 20  
28, 29, 19, 20, 20, 19  
32, 32, 36, 40, 21, 20 Mode

**3 Find the range for each set of numbers:**

a 23, 15, 18, 12, 2, 39  
Range

b 231, 148, 192, 223, 84, 139  
Range

c 3.2, 9.7, 13.5, 1.8, 8.4, 3.9  
Range

**4 Find the median for each set of numbers:**

a 14, 15, 16, 17, 23, 25, 28, 30, 31  
Median

b 37, 38, 42, 43, 44, 45, 48, 50, 53  
Median

**5 Colour match each term on the left with its example:**

mean

The teacher studied the test results and found the most common score.

mode

The estate agent subtracted the lowest house price from the highest house price to get a better idea of the suburb's housing values.

median

Tim added up the goals he scored in each football game of the season and then divided this total by the number of games.

range

The photographer wrote down the pupils' heights in order from shortest to tallest to find who should be in the centre of the photo.

Skills	Not yet	Kind of	Got it
• Recognises and finds mean			
• Recognises and finds mode			
• Recognises and finds median			
• Recognises and finds range			

1 Here are 3 different sets of data. Look at each table and decide which is the most appropriate graph to use for each one.

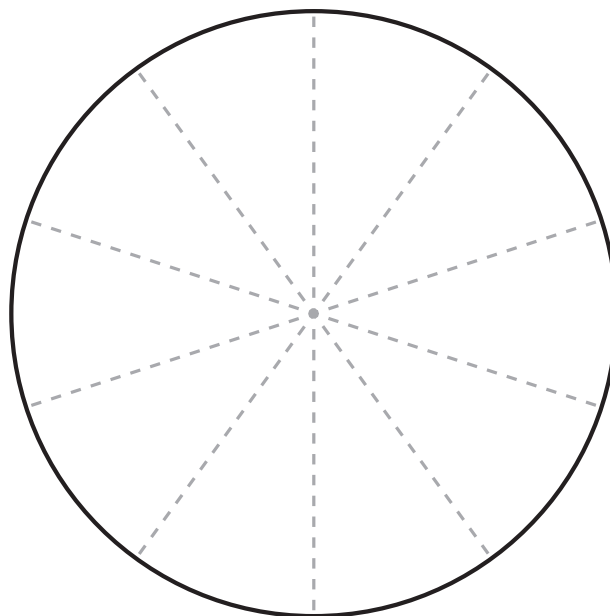
Name	Number of Ribbons
Adrian	12
Omar	5
Paige	8
Imogen	4

Week	Height of Plant (in cm)
1	7
2	10
3	14
4	15

Item	Profit
Fiction books	£40
Non-fiction books	£30
Picture books	£20
Bookmarks	£10

Construct the graphs using the templates below and on the next page. Don't forget to work out the scale, label the axes and add a heading.

- a Show how many ribbons each person won at the school swimming carnival. It should be clear who won the most and who won the least.
- b Show the growth of the plant over 4 weeks.
- c Show what made up the library sale's £100 profit.



# Displaying data 2

Name \_\_\_\_\_



Skills	Not yet	Kind of	Got it
<ul style="list-style-type: none"> <li>Selects most appropriate graph for data</li> </ul>			

# Series G – Statistics – Student Progress Record

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

What went well: \_\_\_\_\_

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What I need to improve: \_\_\_\_\_

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# Series G – Statistics – Student Progress Record

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

What went well: \_\_\_\_\_

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What I need to improve: \_\_\_\_\_

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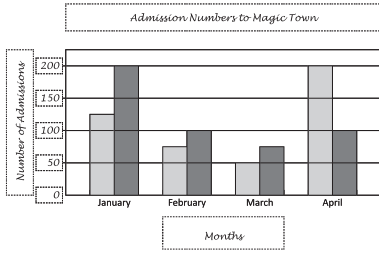


# Series G – Statistics

## ASSESSMENT ANSWERS

### Page 5

1

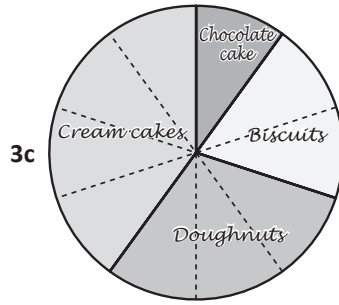
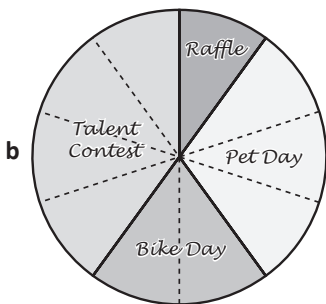
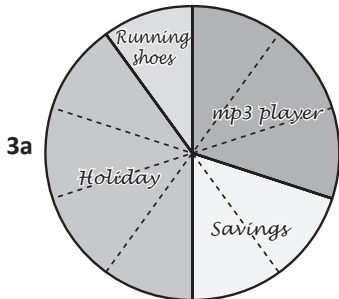


- 2a January  
 b March  
 c April  
 d Because the previous month (March) was low.

### Pages 6–7

1 Circle a

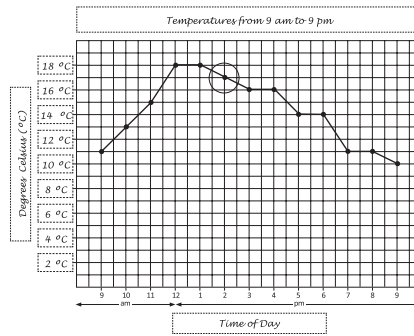
- 2a  $\frac{4}{10}$  or  $\frac{2}{5}$   
 b  $\frac{2}{10}$  or  $\frac{1}{5}$   
 c 10%  
 d 30



- 4a  $\frac{3}{10}$   
 b 10%  
 c 20%  
 d £180

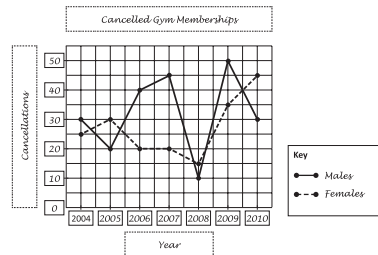
### Pages 8–9

1a–e



f 15°C

2



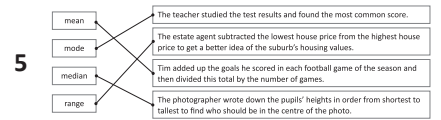
- 3a 60  
 b 25  
 c 2008  
 d 25

### Page 10

- 1a 2  
 b 1  
 c 4  
 d 3

### Page 11

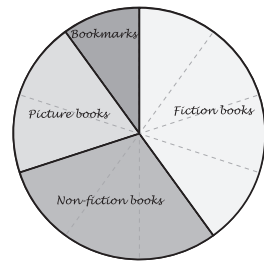
- 1a 5  
 b 30  
 c 20  
 d 164  
 2a 7  
 b 20  
 3a 37  
 b 147  
 c 11.7  
 4a 23  
 b 44



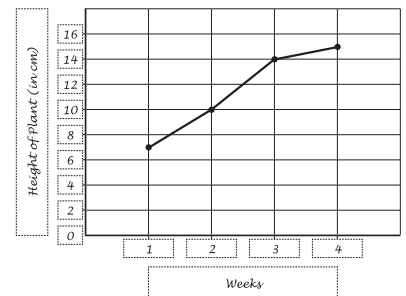
### Pages 12–13

1a–c

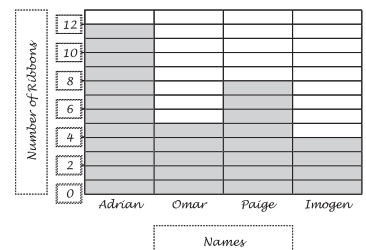
School Library Sale



Growth of Plant



School Swimming Carnival Ribbons



## Series G – Statistics

Topic	Reference	Strand	Objective
<b>Types of Graphs</b>	6S1	Statistics	Interpret and construct pie charts and line graphs and use these to solve problems.
<b>Collecting and Analysing Data</b>	6S3	Statistics	Calculate and interpret the mean as an average.
<b>Data Investigations</b>	6S1	Statistics	Interpret and construct pie charts and line graphs and use these to solve problems.