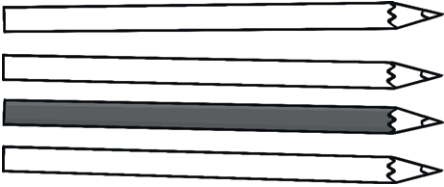Name:

Maths Assessment Year 6 Term 2: Statistics

You will need a ruler and coloured pencil crayons for this assessment (4 different colours).

1. Interpret and construct pie charts and line graphs and use these to solve problems.

2. Calculate and interpret the mean as an average.

Maths Assessment Year 6 Term 2: Statistics

1. Interpret and construct pie charts and line graphs and use these to solve problems.

a) A clothes shop records the number of items sold each month, rounding them to the nearest 10.
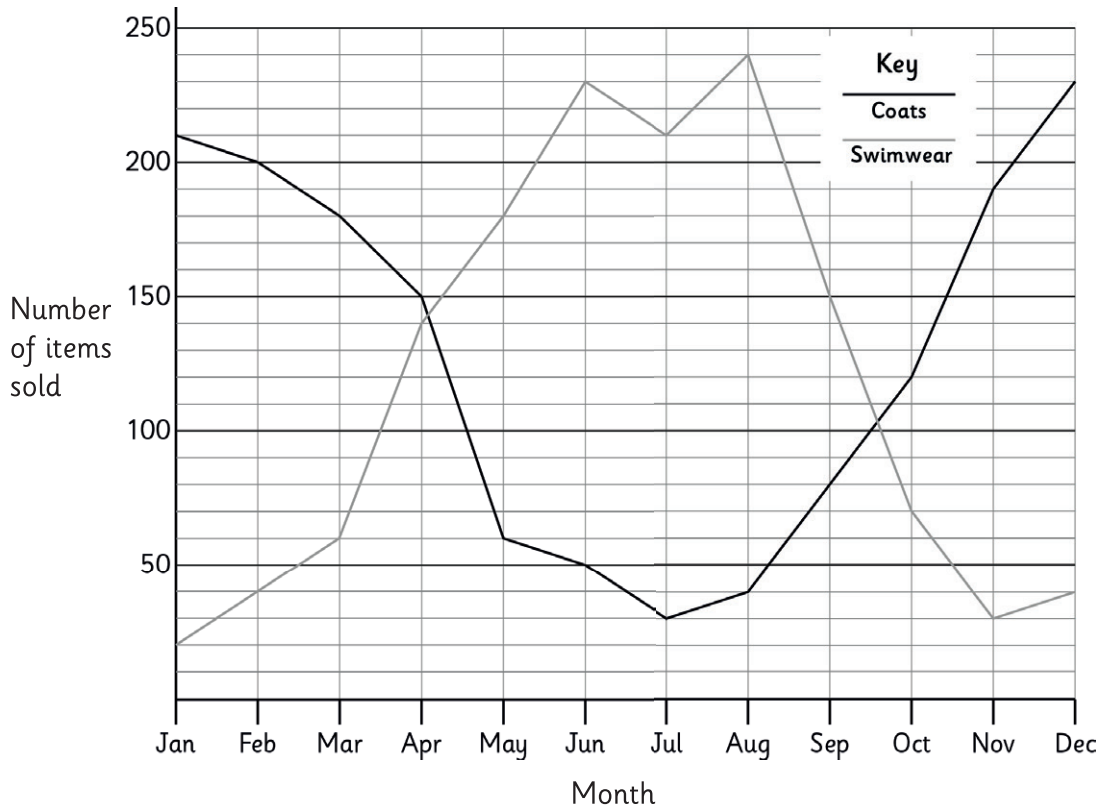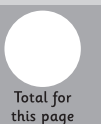

i) What is the more popular item in April?	
ii) How many coats and items of swimwear are sold in February?	
iii) In which months are more than 100 coats and more than 100 swimwear items sold?	
iv) In which month is the greatest difference between the number of coats and swimwear items sold?	
v) In which month are the most coats and swimwear items sold?	

5 marks

vi) Coats are sold for three times the price of swimwear. Does the shop take more money in February or July in the sale of coats and swimwear.
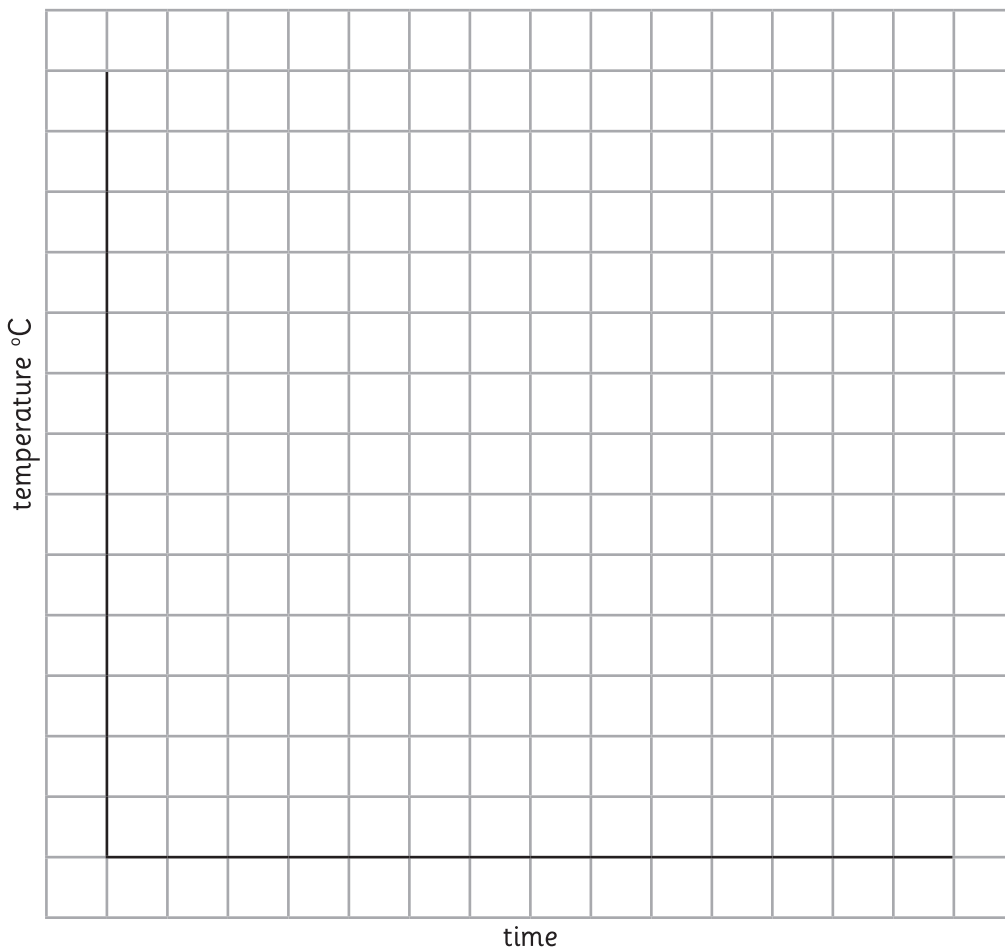
Show your working out:

2 marks

Total for this page

b) Alice measures the temperature in the playground at each hour during the school day. She records the information in a table:

Time	Temperature
09:00	2^0C
10:00	5^0C
11:00	7^0C
12:00	11^0C
13:00	13^0C
14:00	9^0C
15:00	7^0C

i. Plot a line graph showing the information in the table:

temperature °C

time

ii. Using the graph, estimate the temperature at 10:30.

iii. What on the graph shows when the temperature is changing fastest?

....

....

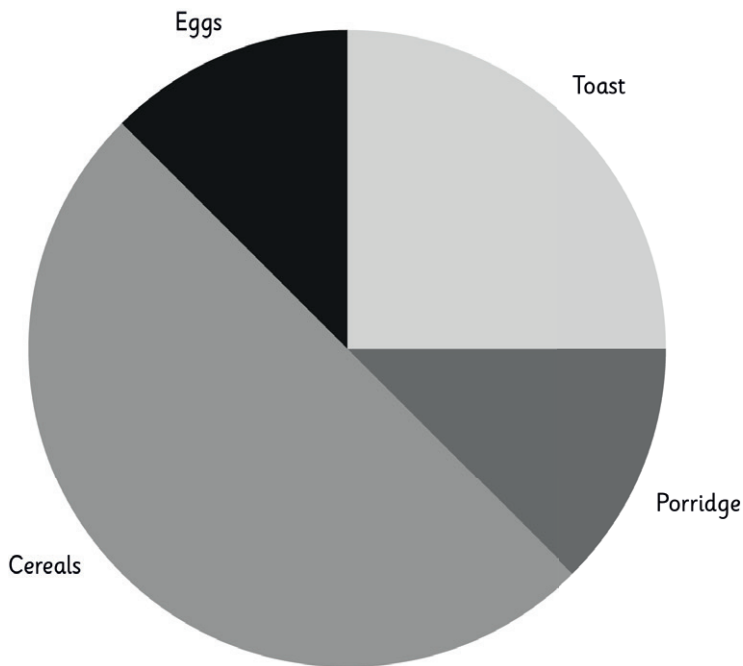**c)** 24 children chose their favourite breakfast food. Here is a pie chart to show their reponses:

A pie chart to show people's favourite breakfast food.

i) What percentage of children said their favourite breakfast was toast?	
ii) How many children chose cereals as their favourite breakfast?	
iii) How many more children chose toast than eggs as their favourite breakfast?	

iv) The children are going on a residential visit and the teacher wants to only offer 2 different choices for breakfast.

What should the teacher choose and why? Explain as fully as you can.

....

....

....
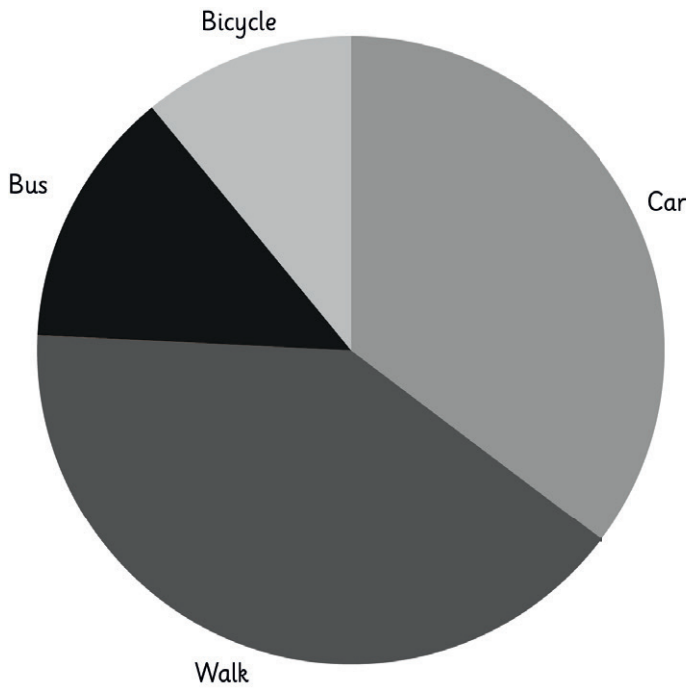
d) All the Key Stage 2 children at Westcliffe Primary were asked how they got to school. The following pie chart is created from the information.

i. If 30 children walked to school, estimate how many came by car.

ii. Estimate the percentage of children who came to school by car.

iii. Which mode of transport was least popular?

**iv.** Estimate the number of children who took part in the survey?

e) Some children were asked about their favourite type of book.

The following table shows the results.

Books	Number of children
Animal	4
Humour	12
Adventure	6
Real life	2
Non-fiction	8

i. Use the frame below to create a pie chart to show this information. Colour in the pie chart and key to show what each section represents.
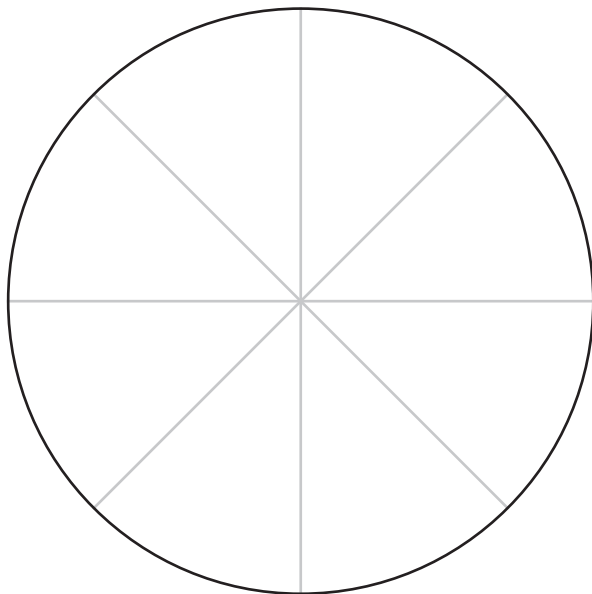
Key

☐ Animal

☐ Humour

☐ Adventure

☐ Real life

☐ Non-fiction

ii. Which type of book did 25% of the children choose as their favourite?
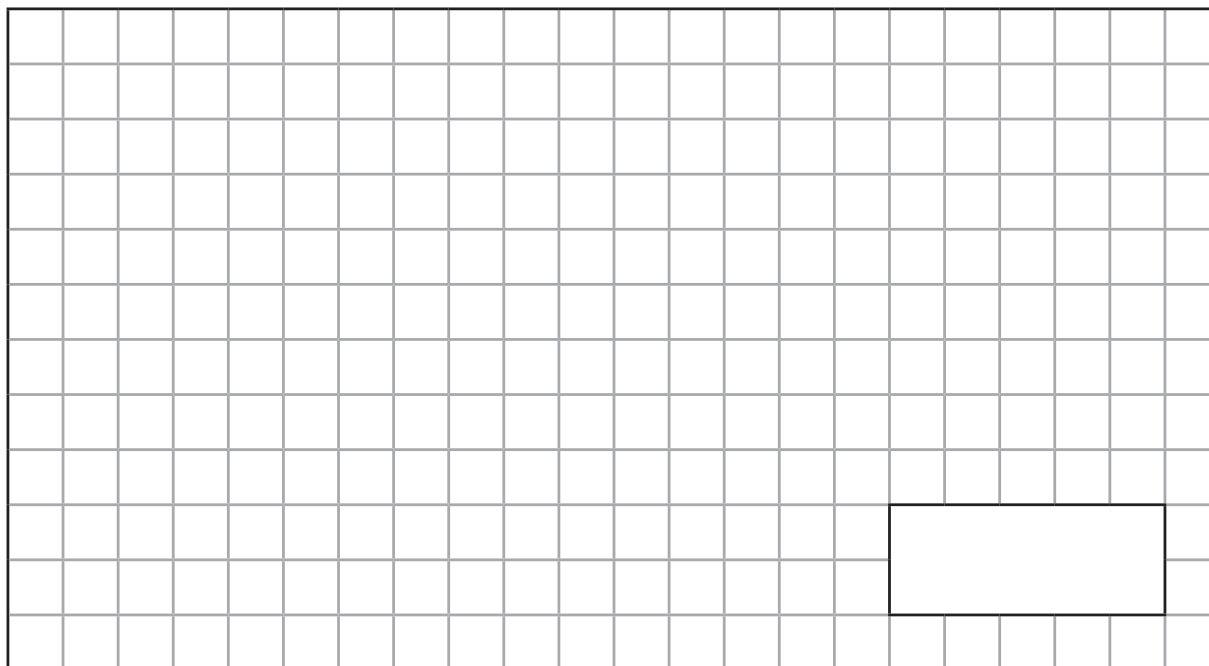
2. Calculate and interpret the mean as an average.

Jacob measures the temperature in his garden each evening at 6pm.

Day	Temperature
Sunday	12^0C
Monday	14^0C
Tuesday	13^0C
Wednesday	16^0C
Thursday	9^0C
Friday	7^0C
Saturday	13^0C

a) Calculate the mean temperature at 6pm over the week.

b) Some children are playing tiddlywinks, where they flick counters onto a board. The score is the mean of the numbers upon which the counters land.

This is what the board looks like after Alisha's turn:

i. What is the mean score for Alisha?

This is what the board looks like after Nina has flicked 4 counters onto the board:

ii. What must Nina's final counter land on so that she has a higher mean than Alisha?

c) A grocer keeps a record of how many boxes of bananas he sells each month. Here is his record for January to May:

Month	Number of boxes
January	15
February	13
March	17
April	16
May	14

Use the information to predict how many boxes the grocer will sell over the whole year.

2 marks

Total for this page

question	answer	marks	notes
	1. Interpret and construct pie charts and line graphs and use these to solve problems.		
a	**i)** What is the more popular item in April? → **Coats** **ii)** How many coats and items of swimwear are sold in February? → **240** (200 + 40) **iii)** In which months are more than 100 coats and more than 100 swimwear items sold? → **April** **iv)** In which month is the greatest difference between the number of coats and swimwear items sold? → **August** **v)** In which month are the most coats and swimwear items sold? → **April**	5	Award one mark for each correct answer.
	vi) February	2	2 marks for February with a calculation showing that the ratio would be 640:300. 1 mark for the correct answer February.
b.i.		1	
ii.	6°C	2	Award one mark for each correct answer.
iii.	The steepest line	2	Award one mark for the answer 'no' identified. Award a further mark for a relevant explanation.
c.i	25%	1	
ii.	12	1	
iii.	3	1	

question	answer	marks	notes
iv.	Toast and cereals They are the most popular	2	1 mark for toast and cereals. 1 mark for explaining they are the most popular or most children will like them.
d.i.	32-40	1	1 mark for any answer between 32 and 40 inclusive.
ii.	30%-40%	1	1 mark for any answer between 30% and 40% inclusive.
iii.	Bicycle	1	
iv.	85 − 95 or 80 - 84 and 96 - 100	2	2 marks for 85 − 95 inclusive. 1 mark for 80 - 84, 96 − 100 inclusive.
e.i.		2	2 marks for all correct. 1 mark for 1 error (which will mean 2 segments incorrect). Note the order can vary. Animals is 1 segment. Humour is 3 segments. Adventure is 1 ½ segments. Real life is ½ segment. Non-fiction is 2 segments.
ii.	Non-fiction	1	
2. Calculate and interpret the mean as an average.			
a	12^0	1	
b.i.	24	1	
ii.	25 or 50	1	
c	180	2	2 marks for a correct answer. 1 mark for incorrect answer with a correct method and only 1 mistake in calculation.
		Total 30	