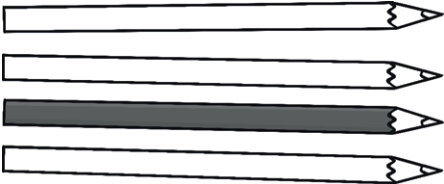


Name:

Maths Assessment Year 6 Term 3: Statistics

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



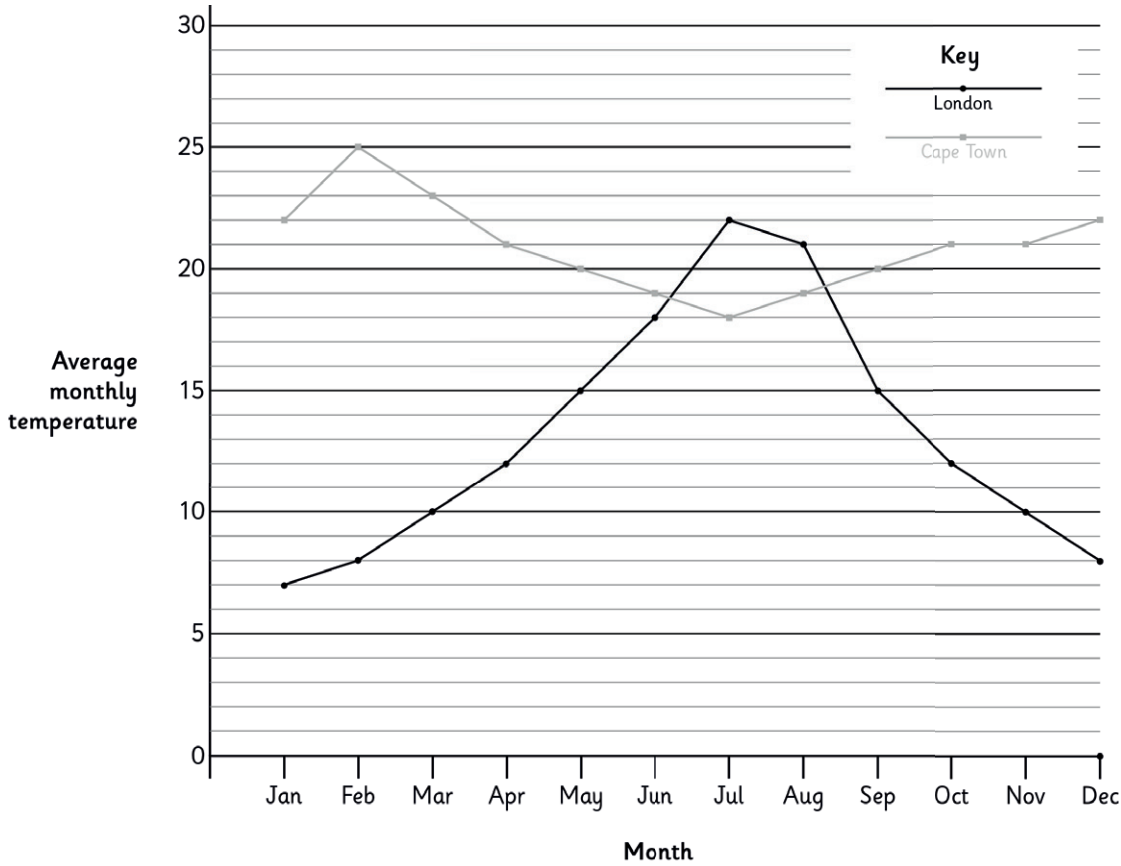
1. Interpret and construct pie charts and line graphs and use these to solve problems.
2. Calculate and interpret the mean as an average.



Maths Assessment Year 6 Term 3: Statistics

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

a) Here is a graph showing the average monthly temperatures over a year in London, England and Cape Town, South Africa.



i) What is the average temperature in London in March?	
ii) What is the difference between the average monthly temperature in Cape Town and the average monthly temperature in London in November?	
iii) In which months is it warmer in London than in Cape Town?	
iv) In which month is the greatest difference between the average temperatures in London and Cape Town?	
v) In which month is the least difference between the average temperatures in London and Cape Town?	

vi) In which months is the average temperature in both London and Cape Town between (not including) 11°C and 22°C?

5 marks

2 marks

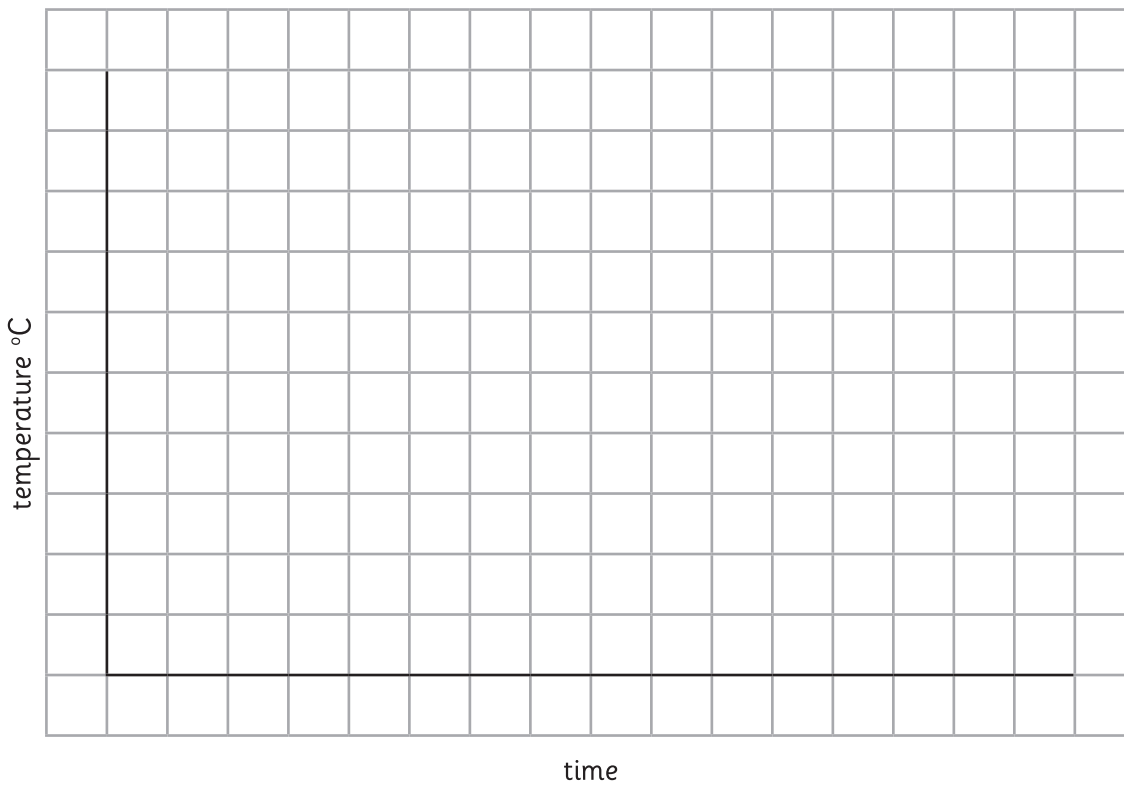
Total for this page

b) A school monitors the temperature in the playground at each hour:

Time	Temperature °C
10:00	1
11:00	4
12:00	12
13:00	15
14:00	13
15:00	6
16:00	9
17:00	3

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

A graph to show the temperature in the playground



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

iii. Between which hours is the greatest change in the temperature?

.....

.....



3 marks



1 mark



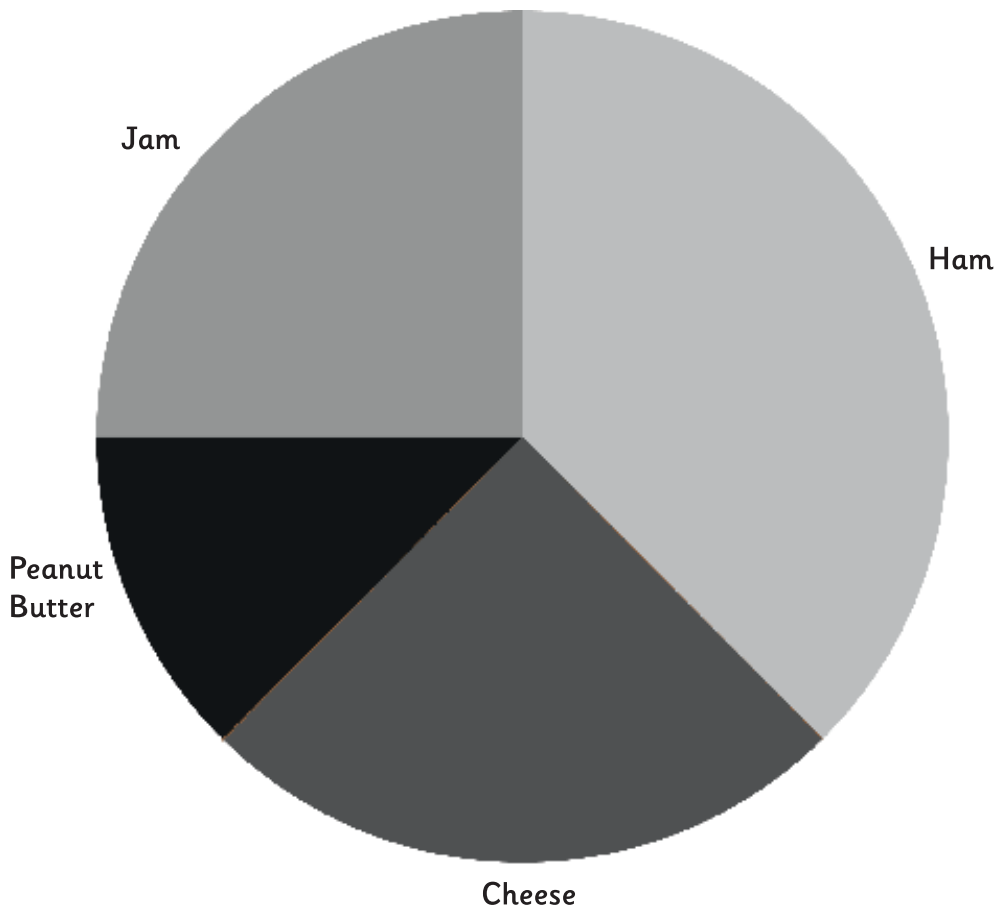
1 mark



Total for this page

c) 32 children chose their favourite sandwich filling. Here is a pie chart to show their responses:

A pie chart to show people's favourite sandwich filling.



i) What percentage of children said their favourite sandwich filling was cheese?	
ii) How many children chose ham as their favourite sandwich filling?	
iii) How many more children chose jam than peanut butter as their favourite sandwich filling?	

iv) Peanut butter is removed from the choices. All the children who chose peanut butter choose cheese. What is the most popular sandwich filling now?

.....

.....

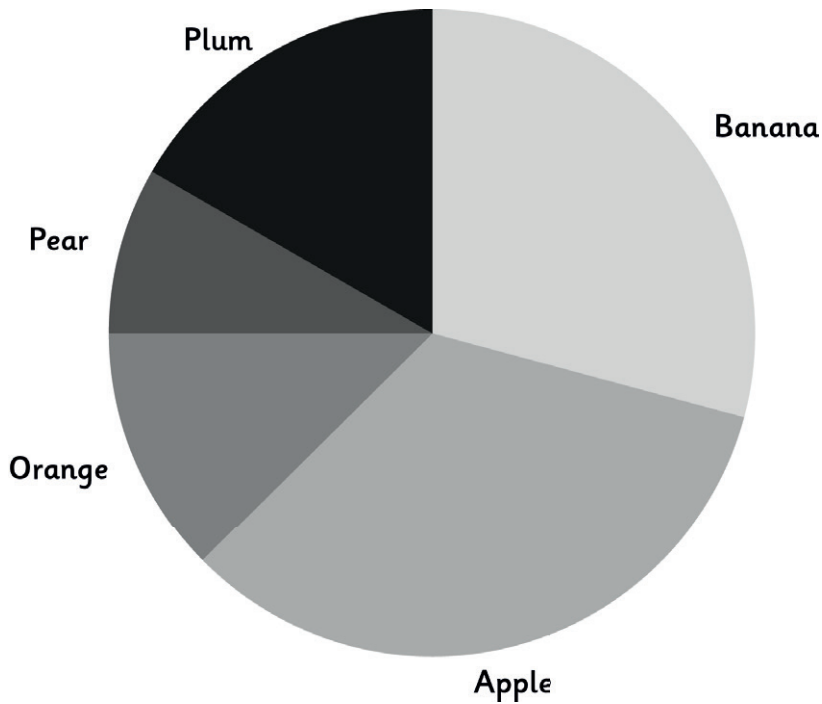
.....

3 marks

2 marks

Total for this page

d) All the children in Key Stage 2 in a school are asked what was the last piece of fruit that they ate. The following pie chart is created from the information.



i. If 20 children ate a plum, estimate how many children ate a pear.

1 mark

ii. Estimate the percentage of children who ate an apple.

1 mark

iii. Which fruit was least popular?

1 mark

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

2 marks

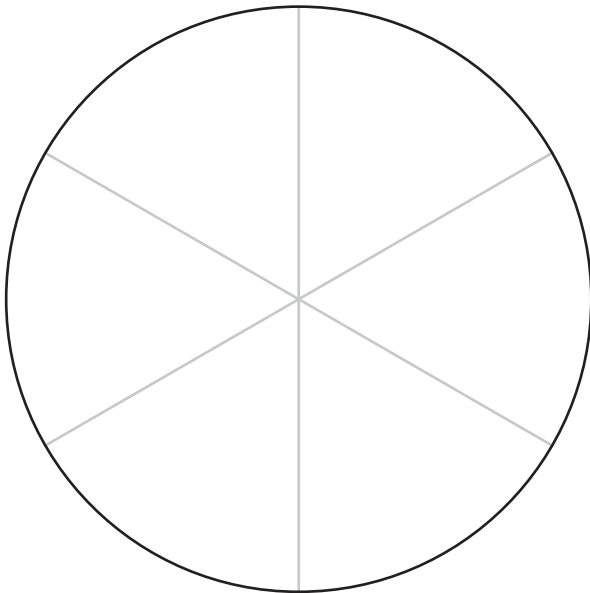
Total for this page

e) Some children were asked whether they had any pets.

The following table shows the results.

Pet	Number of children
Cat	8
Dog	8
Rabbit	3
Fish	2
Guinea Pig	3

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



Key	
<input type="checkbox"/>	Cat
<input type="checkbox"/>	Dog
<input type="checkbox"/>	Rabbit
<input type="checkbox"/>	Fish
<input type="checkbox"/>	Guinea Pig

ii. Which pet or pets did 12.5% of children have?



2 marks



1 mark



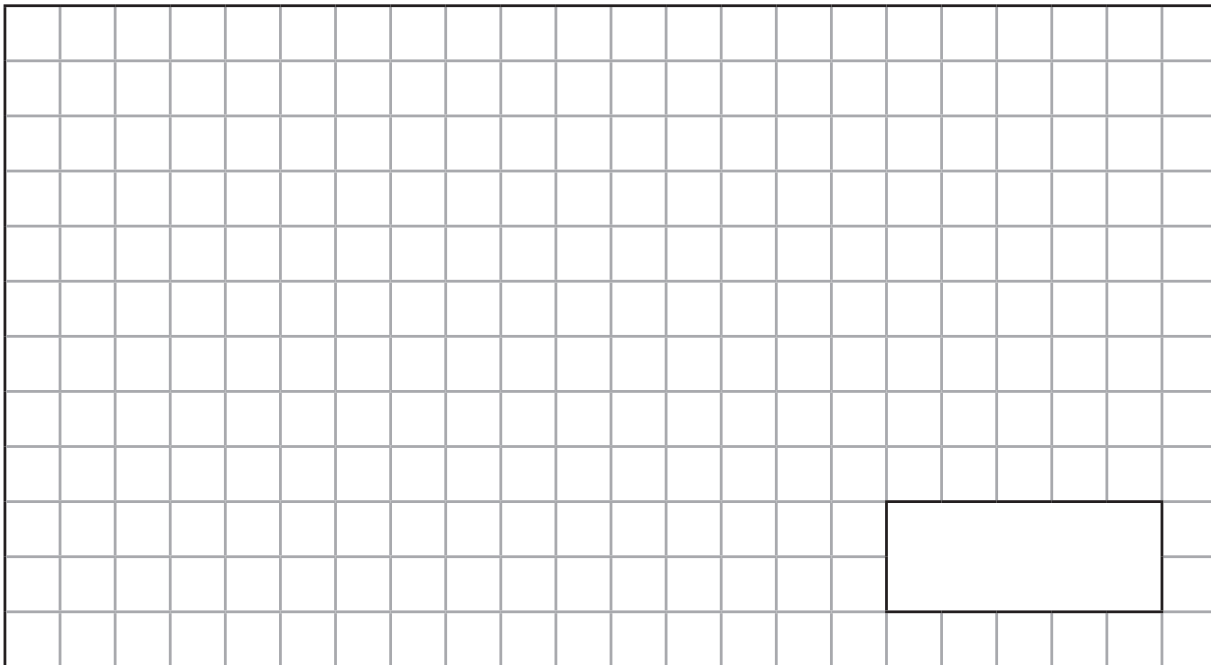
Total for this page

2. Calculate and interpret the mean as an average.

A class of children count the number of vehicles that go past the school each hour during a school day.

Time	Number of vehicles
09:00 – 10:00	21
10:00 – 11:00	15
11:00 – 12:00	13
12:00 – 13:00	9
13:00 – 14:00	12
14:00 – 15:00	14

a) Calculate the mean number of cars passing the school each hour.



1 mark

Total for this page

c) A school manager keeps a record of how many boxes of paper are used each week in school. Here is her record for the first 5 weeks:

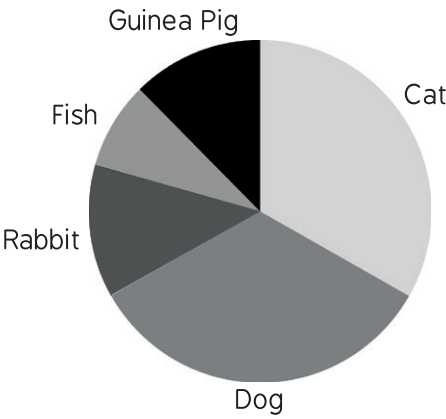
Week	Number of boxes
1	8
2	13
3	9
4	13
5	12

Use the information to predict how many boxes of paper the school will use in a 14 week term.

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 average temperature in London in March?	10°C	5
	ii) What is the difference between the average monthly temperature in Cape Town and the average monthly temperature in London in November?	11°C	
	iii) In which months is it warmer in London than in Cape Town?	July and August	
	iv) In which month is the greatest difference between the average temperatures in London and Cape Town?	February	
	v) In which month is the least difference between the average temperatures in London and Cape Town?	June	
	vi) April, May, June, August, September, October		2
b.i.		1	1 mark for a correct labelling of the axes. Allow variations of scale as long as they are correct. 1 mark for correct marking all points. 1 mark for correctly drawing a line through the points drawn (even if incorrect).
ii.	2.5	2	1 mark for correct answer. Accept between 2.4 - 3.
iii.	11:00 – 12:00	2	1 mark for any description that explains the steepest line shows the fastest change in temperature.
c.i	25%	1	
ii.	12	1	
iii.	3	1	

question	answer	marks	notes
iv.	Cheese and ham are both most popular.	2	2 mark for correct answer. 1 mark for calculating that 12 like ham and 12 like cheese.
d.i.	9-11	1	1 mark for any answer between 9 and 11 inclusive.
ii.	30%-37%	1	1 mark for any answer between 30% and 37% inclusive.
iii.	Pear	1	
iv.	110 - 125	2	2 marks for 115 – 125 inclusive. 1 mark for 110 - 114, 126 – 300 inclusive.
e.i.	 <p>A pie chart showing the distribution of pet preferences. The chart is divided into five segments: Guinea Pig (black, 1/4), Cat (light grey, 2/4), Dog (medium grey, 2/4), Rabbit (dark grey, 3/4), and Fish (medium-dark grey, 1/2).</p>	2	2 marks for all correct 1 mark for 1 error (which will mean 2 segments incorrect) Note the order can vary. Cat is 2 segments Dog is 2 segments Rabbit is $\frac{3}{4}$ segments Fish is $\frac{1}{2}$ segment Guinea pig is $\frac{3}{4}$ segment.
ii.	Rabbit and Guinea Pig	1	
2. Calculate and interpret the mean as an average.			
a	14	1	
b.i.	17	1	
ii.	15, 20 or 30	1	
c	154	2	2 marks for a correct answer. 1 mark for incorrect answer with a correct method and only 1 mistake in calculation.
		Total 30	