

Check out

You should now be able to ...

✓	Questions	
✓	Draw a frequency polygon.	7
✓	Find trends using moving averages.	8
✓	Estimate the mean from a grouped frequency table.	7
✓	Interpret a scatter diagram.	7
✓	Draw and use a cumulative frequency graph.	8
✓	Compare distributions.	6
✓	Use box plots to make comparisons between data sets.	8

Test it

Questions

7	1
8	2
7	3
7	4
8	5
6	6
8	7



Language Meaning Example

Hypothesis	A statistical statement to prove or disprove.	Small dogs live longer than large dogs.
Population	The whole group to be investigated.	All adults of voting age in UK
Sample	A small selection of the population.	A smaller sample chosen to predict the outcome of an election
Bias	Not fair.	A biased sample does not truly represent the whole population.
Frequency polygon	A graph showing the distribution of a grouped frequency table.	See page 136
Line of best fit	A straight line (or curve) drawn through a set of points to show a trend.	See page 142
Moving average	A way of removing season cycles to show the overall trend.	See page 138
Box plot	A diagram to show range, median and quartiles of a distribution.	See page 150
Quartiles	The value of the 75% (upper) and 25% (lower) item in an ordered data set.	See page 144
IQR	Interquartile range = upper quartile – lower quartile	See page 144

- 1 A group of students recorded how many pieces of homework they were set in a week.

Homework	0-4	5-9	10-14	15-19
Frequency	5	11	9	2

- a Estimate the range of the number of pieces of homework.
 b Find the modal class.
 c Draw a frequency polygon for the data.

- 2 The price of a share (pence) in a company over a 3-week period is shown in the table.

Week	1	2	3
Monday	25.9	26.0	34.8
Tuesday	25.7	26.1	35.7
Wednesday	25.9	26.3	38.0
Thursday	26.7	28.9	37.5
Friday	25.8	29.4	39.3

- a Plot the data on a time series graph.
 b Calculate the five-point moving averages and plot them on the graph.
 c Draw a trend line for the moving averages.

- 3 The number of words in text messages sent by Louise is summarised in the table.

Number of Words, w	Number of Messages
$0 < w \leq 5$	20
$5 < w \leq 10$	35
$10 < w \leq 20$	15
$20 < w \leq 40$	5

Estimate the mean number of words.

What next?

Score	0 - 3	4 - 6	7
	Your knowledge of this topic is still developing. To improve look at Formative test: 3C-8; MyMaths: 1194, 1195, 1201, 1204, 1212, 1213, 1248, 1333 and 1936	You are gaining a secure knowledge of this topic. To improve look at InvisiPen: 413, 414, 427, 432, 433, 434 and 449	You have mastered this topic. Well done, you are ready to progress!

- 4 The table gives the percentage of the population of men and of women who smoked cigarettes over several years.

Year	% Men	% Women
1974	52	41
1982	38	33
1990	31	29
1998	30	27
2006	26	23

Plot the percentages of men and women on a scatter graph and comment on any correlation.

- 5 For the data in question 3.

- a Plot a cumulative frequency graph.
 b Use your graph to estimate the median.
 c Use your graph to estimate the IQR.

- 6 For the data in question 4, draw a graph which shows the trend over time and compares men and women.

- 7 The table gives information about the age and gender of employees of a company.

Age	Male	Female
Median	34	29
Lowest	17	19
Highest	65	59
Lower Quartile	27	22
Upper Quartile	40	33

- a Draw a pair of box plots to show this information.
 b Use your box plots to compare the ages of male and female employees.