

The Mean

In class 7E there are 8 girls, and 6 boys.  
The mean weight of the girls is 39.4kg.  
The mean weight of the boys is 43.7kg.  
What is the mean weight of the students? = 41.2kg

There are 20 bags of sweets on a shelf.  
The mean number of sweets in a bag is 13. The table shows how many sweets are in 19 of the bags.

Number of sweets	Frequency
12	9
13	5
14	3
15	2

How many sweets are in the 20<sup>th</sup> bag?  
= 15

Mean from Grouped Data

The table gives information on the mass of each member of a squad of rugby players.

Mass, $m$ (kg)	Frequency
$70 < m \leq 80$	7
$80 < m \leq 90$	12
$95 < m \leq 100$	8
$105 < m \leq 110$	7
$110 < m \leq 120$	6

Work out an estimate of the mean mass of a squad member. Give your answer to one decimal place.  
= 94.2 kg

Time Series

The diagram shows the quarterly download figures for an app over a three year period.

- a) To the nearest thousand, estimate the number of downloads in each year.  
= 2014: 28000, 2015: 41000, 2016: 62000
- b) Is it possible to estimate how many times the app will be downloaded in 2018, using this diagram?  
Explain your reasoning.  
= Not without more data. Overall trend is upward but extrapolation would not be reliable.



Stem and Leaf

This diagram shows 10 participants resting heart rate before and after a training programme. Compare the two distributions using descriptive statistics.

BEFORE	AFTER
4	6 8
6 5	5 3 5 7
7 3	6 0 1 1 7
9 8 5 4 0	7 4
3	8
KEY: 4   6 means 64	KEY: 7   3 means 73

Range 28 before and after.  
BEFORE: median = 72 iqr = 15  
AFTER: median = 58.5 iqr = 8  
Median is lower after the programme. Greater consistency over the middle 50% of participants after.

Measures of Location and Spread

For the following data,  
3.2, 7.5, 2.2, 2.8, 6.5, 5.8, 5.8, 4.9, 5.0

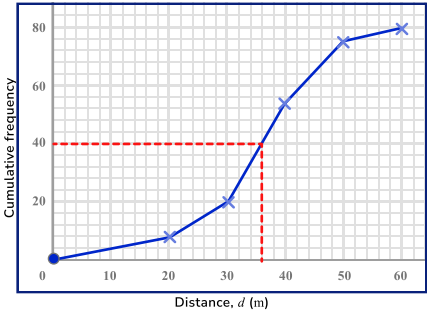
- Find:
- a) The range = 5.3  
b) The median = 5.0  
c) The lower quartile = 3.0  
d) The upper quartile = 6.15  
e) The interquartile range = 3.15

Cumulative Frequency

The best distance achieved by year 10 students throwing a javelin is recorded below.

- a) Complete the table and plot a cumulative frequency diagram
- b) Use your diagram to estimate the median distance the javelin was thrown.  $\approx 36m$

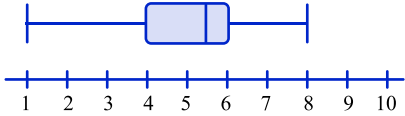
Distance, $d$ (m)	Frequency	Cumulative frequency
$d \leq 20$	8	8
$20 < d \leq 30$	12	20
$30 < d \leq 40$	34	54
$40 < d \leq 50$	21	75
$50 < d \leq 60$	5	80



Box Plots

A box plot is created to represent some data. Use this box plot to state.

a) The range = 7  
b) The median = 5.5  
c) The interquartile range = 2



Histograms

The heights of plants in a garden are recorded in this table.

- a) Use the histogram to calculate the missing frequencies.
- b) Complete the histogram

Height, $h$ (cm)	Frequency	Frequency density
$0 < h \leq 15$	60	4
$15 < h \leq 20$	25	5
$20 < h \leq 30$	30	3
$30 < h \leq 40$	15	1.5
$40 < h \leq 50$	20	2

