

Mode, Median, Mean and Range

When we have a set of data, sometimes we wish to find an *average* (one piece) that will represent the whole set of data. An average is very useful as it means we can compare one set of data against another set of data just by comparing two average values. There are various ways of finding this average, the most common being the mode, median and mean.

Mode

The mode is the most common item from a list.

E.g. 4, 7, 3, 4, 5, 7, 4, 3, 4, 6, 5, 4

Put in ascending order

3, 3, **4, 4, 4, 4, 4**, 5, 5, 6, 7, 7

or Tally

Number	Frequency
3	2
4	5
5	2
6	1
7	2

Here we can see that 4 is the **most** common number, hence Mode = 4.

E.g. 7, 5, 9, 6, 9, 7, 3, 5, 6, 7, 8, 5, 4

Put in ascending order

3, 4, **5, 5, 5**, 6, 6, **7, 7, 7**, 8, 9, 9

Here we see that both **5** and **7** are the most popular. Hence there are two modes, 5 and 7.

E.g. 14, 16, 5, 19, 13, 11, 3, 21, 6

Put in ascending order

3, 5, 6, 11, 13, 14, 16, 19, 21

Here there is **no mode** as no number occurs more than any other number.

The mode can be used on words (qualitative data) as well as numbers (quantitative data).



E.g. Blue, Brown, Green, Blue, Blue, Green, Red, Green, Brown, Green, Red, Blue, Green, Green

Tally

Colour	Frequency
Blue	4
Brown	2
Green	6
Red	2

Here Green is the modal value.



Median

The median is the middle value when the data has been ordered in size from lowest to highest (ascending order).

E.g. 7, 5, 9, 6, 9, 7, 3, 5, 6, 7, 8, 5, 4

Put in ascending order

3, 4, 5, 5, 5, 6, 6, 7, 7, 7, 8, 9, 9

Median = 6

If there are two middle values, then we find the middle of these two values ie.add up the two numbers and divide by 2.