

Averages and Range

When interpreting data it is useful to calculate averages and look at the spread of the data.

Mean	Sum of the items divided by the number of items
Mode	The value that occurs most commonly in the list
Median	Mid point of the data set Total number of items (n) + 1 divided by 2 $(n+1) / 2 = \text{th value or middle value}$ Remember to count to that value to get your answer
Range	The highest number minus the lowest number

The Rules:

1. Always rearrange the numbers into ascending order

Example:

0, 1, 4, 1, 5, -3, -2, 1, 5, 5, 2, 4, 0, 7, 1, 3, 0

First rearrange the numbers so they are in numerical order:

-3, -2, 0, 0, 0, 1, 1, 1, 1, 2, 3, 4, 4, 5, 5, 5, 7

		Answer
Mean	$\frac{-3 - 2 + 0 + 0 + 0 + 1 + 1 + 1 + 1 + 2 + 3 + 4 + 4 + 5 + 5 + 5 + 7}{17}$	$34 / 17 = 2$
Mode	there are more number 1's than any other value, so the most common number is 1	1
Median	$(n+1) / 2 = \text{th value}$ $(17 + 1) / 2$ $18 / 2 = 9$ 9 th value = the median (count in 9 numbers from the left) $-3 - 2 + 0 + 0 + 0 + 1 + 1 + 1 + 1 + 2 + 3 + 4 + 4 + 5 + 5 + 5 + 7$ $\uparrow = 9^{\text{th}} \text{ value}$	$17 + 1 = 1$
Range	Highest value = 7 minus lowest value = -3 7 - - 3 (- and - = +) 7 + 3	7 + 3 = 10