

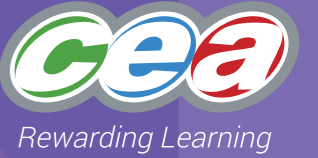
What is an average?

Averages can be used to make general statements and draw conclusions about a set of data.

Types of average

We commonly use three types of average:

1. **Mean** the sum of all values \div the number of values
2. **Median** the midpoint of data when it is arranged in order
3. **Mode** the most frequently occurring value or item



How to calculate the mean of a set of values

Mean is the sum of all values \div the number of values.

1. Find the total by adding all the values.
2. Find how many values there are.
3. Divide the total by the number of values.

Example

Find the **mean** of the following numbers:

13, 18, 13, 14, 13, 16, 14, 21, 13

1. $13 + 18 + 13 + 14 + 13 + 16 + 14 + 21 + 13 = 135$
2. 9 values
3. $135 \div 9 = 15$

Mean = 15

Other types of averages

Teacher Note: This is covered at Level 6 but is included here for pupil information.

How to calculate the median of a set of values

Median is the midpoint of data when it is arranged in order.

1. Arrange the numbers in order of size, for example smallest to largest.
2. Find the middle value by adding 1 to the number of values and dividing by 2

Example

Find the **median** of the following numbers:

13, 18, 13, 14, 13, 16, 14, 21, 13

1. Arrange in order of size:
13, 13, 13, 13, 14, 14, 16, 18, 21
2. Find the middle number.
There are nine numbers in the list; $9 + 1 = 10$, $10 \div 2 = 5$ so the fifth value is in the middle:
13, 13, 13, 13, **14**, 14, 16, 18, 21

Median = 14

How to find the mode of a set of values

Mode is the most frequently occurring value in the data.

Example

Find the **mode** of the following numbers:

13, 18, 13, 14, 13, 16, 14, 21, 13

Mode = 13, as it appears the most often.

There are times when there is more than one mode.

Example

Find the mode of the following numbers:

11, 12, 14, 15, 15, 17, 18, 19, 19

This time there are two modes, 15 and 19

Level 5

Understand, calculate and use the mean.