D4.1 Mean

This spread will show you how to:

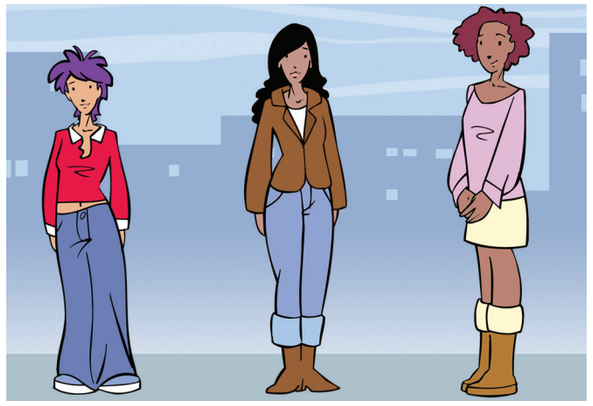
- Calculate the mean of small sets of data

Keywords

Average
Mean
Representative value

The **average** 15-year-old girl in the UK is 164 cm tall.

This does not suggest that every girl's height is 164 cm, but that 164 cm can be used to represent the height of all the 15-year-old girls in the UK.



You can use one value to represent a set of data.
One **representative value** is called the **mean**.

- Mean = $\frac{\text{total sum of the values}}{\text{number of values}}$

Example

Five students measured their pulse rates.
The beats per minute for the students were

64 73 75 78 68

Calculate the mean pulse rate.

$$\text{Mean} = \frac{\text{total sum of the values}}{\text{number of values}}$$

$$= \frac{64 + 73 + 75 + 78 + 68}{5}$$

$$= \frac{358}{5}$$

$$= 71.6 \text{ beats per minute}$$

Notice that the mean does not have to be one of the values.

Exercise D4.1

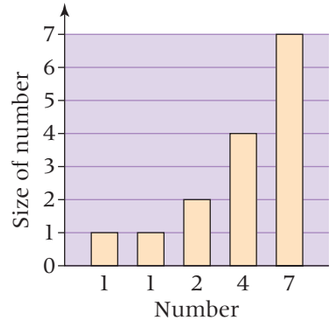
1 **a** Calculate the mean of these five numbers

1, 1, 2, 4, 7

b Copy the diagram to illustrate the five numbers.

c Mark the mean on your diagram with a horizontal line.

d Show how the parts of bars above the mean can be moved to give five equal numbers.



2 **a** Calculate the mean of these six numbers

1, 2, 2, 6, 6, 7

b Draw a diagram to illustrate the six numbers.

c Mark the mean on your diagram.

d Show how seven parts of bars can be moved to give six equal numbers.

3 The times taken for Pete to travel to work are

Monday	Tuesday	Wednesday	Thursday	Friday
24 mins	18 mins	21 mins	17 mins	15 mins

Calculate his mean time taken.

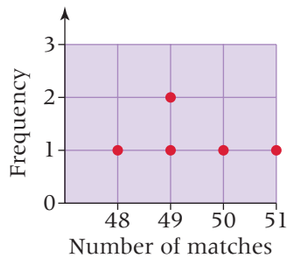
4 Calculate the mean for each set of numbers.

a 4, 9, 7, 12
b 8, 11, 8
c 3, 2, 2, 3, 0
d 1, 9, 8, 6
e 2, 2, 4, 1, 0, 3
f 23, 22, 25, 26
g 17, 19, 19, 20, 18, 17, 16
h 103, 104, 105
i 14, 10, 24, 12
j 4, 6, 7, 6, 4, 4, 3, 7, 3, 6

5 Calculate the mean for each set of numbers.

a 3, 2, 1, 4, 2
b 8, 7, 6, 5
c 3, 2, 2, 5, 1, 2
d 14, 15, 15, 13, 18, 15, 16, 18
e 108, 107, 110, 101

6 The numbers of matches in five different matchboxes are shown on the diagram.
Calculate the mean number of matches in a box.



7 The mean of these three numbers is 8.
Calculate the missing number.

6 9 ?

8 Find two numbers with a mean of 3.5.