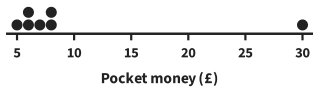


Choosing the Best Average

1 an outlier pulls the mean

Pocket money for 7 students. Which average describes the group better?



5, 6, 6, 7, 8, 8, 30

Median Mean

$$70 \div 7 = 10$$

Better: mean

Why: no outlier

2 Test scores for 7 students. Which average describes the group better?



10, 12, 13, 13, 15, 17, 18

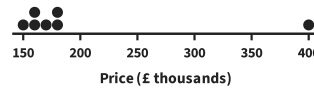
Median Mean

$$98 \div 7 = 14$$

Better: median

Why: an outlier

3 Prices of 7 houses. Which average describes the group better?



150, 160, 160, 170, 180, 180, 400

Median Mean

$$1400 \div 7 = 200$$

Better: mean

Why: no outlier

4 Heights of 7 students. Which average describes the group better?



150, 152, 153, 154, 157, 159, 160

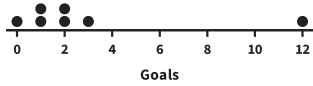
Median Mean

$$1085 \div 7 = 155$$

Better: median

Why: an outlier

5 Goals scored by 7 players. Which average describes the group better?



0, 1, 1, 2, 2, 3, 12

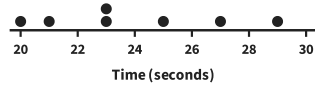
Median Mean

$$21 \div 7 = 3$$

Better: mean

Why: *12 is an outlier*

6 Times for 7 runners. Which average describes the group better?



20, 21, 23, 23, 25, 27, 29

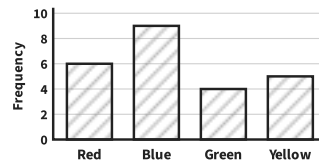
Median Mean

$$168 \div 7 = 24$$

Better: median

Why: *there is no outlier*

7 *Notice the change!*
Favourite colours in a class.
Which average can describe this group?

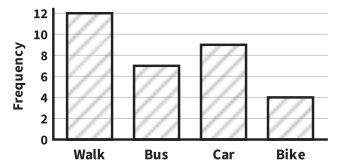


mean median

It is

The data are numbers

8 How students travel to school.
Which average can describe this group?



mean median

It is

The data are numbers

Choosing the Best Average *further practice*

9 Spelling test scores for 7 students.
Which average describes the group better?



Median Mean

$$119 \div 7 = 17$$

Better

Why

10 A shoe shop sold these sizes yesterday.
The manager wants to know which size to order most of. Which average should she use? Find it.
7, 5, 8, 6, 7, 9, 7, 6, 4

mean median

size 7 sold most often

Size

11 Ring the best average to describe each set of data.

(a) Favourite crisp flavours in a class

mean median

(b) Pay at a small firm where the owner earns far more than everyone else

mean mode

(c) Heights of the players in a hockey team

median mode

12 The heights of 6 plants, in cm, are
12, 14, 15, 15, 17, 18

A seventh plant, 40 cm tall, is added.
Which changes more, the mean or the median? Show your working.

	6 plants	7 plants
Mean	15.2	18.7
Median	15	15

Answer

13 Max wants to show his parents that his friends get a lot of pocket money.
Their weekly pocket money, in pounds, is
5, 5, 5, 8, 10, 12, 18
Work out all three averages.
Which one should Max use?

Mean	Median	Mode
£9	£8	£5

Answer

14 The times, in minutes, two plumbers took to arrive at their last 5 jobs.
Plumber A: 20, 25, 30, 35, 140
Plumber B: 40, 45, 45, 50, 55
Which plumber usually arrives sooner?
Use a suitable average.

140 is an outlier, so use the median

Plumber A

Plumber B

Answer

15 The yearly pay, in thousands of pounds, of the 7 people at a small firm is
21, 22, 22, 23, 24, 26, 100
An advert says the average pay is £34 thousand. Which average does the advert use? Is it fair? Explain.

the owner's 100 pulls the mean up, the median of 23 is fairer

Average

Fair?

16 Jo says the mode is always the best average to use for numbers.
Write down five numbers that show she is wrong. Explain.

the mode is 1, but most of the numbers are near 10

Example