Maths: Measure of Location

Worksheet | Answers

Compare distributions using average and range

1. Which average gives the highest value for the data in the list below?

   5, 8, 7, 9, 6, 5, 7, 5, 10, 5

   Mean = 67/10 = 6.7 (highest value)

   Median = 6

   Mode = 5

2. The ages of people in a swimming club are shown below. Which average is not suitable to represent this data? You must give a reason for your answer.

   11, 16, 21, 18, 16, 15, 15, 18, 88, 20

   The mean would not be suitable because the list contains one very large value, an outlier, which would affect the value of the mean average.

3. The table below shows the average attendance of a class weekly over 2 months.

November	84%	99%	86%	99%
June	92%	90%	96%	96%

   Which average shows that the attendance is higher, on average, in November than in June?

   November mean = 368 / 4 = 92%

   June mean = 374 / 4 = 93.5%

   November median = 92.5%

   June median = 94%

   November mode = 99%

   June mode = 96%

   The mode average shows that attendance is generally higher in November compared with June.

4. At the end of a football season, the average number of goals scored and the range of goals scored were calculated for 2 teams. Which team was more consistent? Give a reason for your answer.

Team	Mean goals per game	Range of goals per game
Alpha	2.1	1
Beta	2.9	4

Alpha have a smaller range of goals compared with Beta which shows that they are more consistent with the number of goals that they score each game.

5. A test is sat by 2 groups of students and the results are shown below.

Class 1	20%	92%	20%	88%	54%	69
Class 2	55%	52%	52%	58%	57%	52%

Which of these statements is not true?

a. Class 1 have a higher mean average than class 2.

This statement is true

Class 1 mean = 343/6 = 57.2 % (1 dp)

Class 2 mean = 326 / 6 = 54.3 % (1 dp)

b. Class 2 are much more consistent in their scores than class 1.

This statement is true and shown by class 2 having a much lower range:

Class 1 range = 92 – 20 = 72 %

Class 2 range = 58 - 52 = 6 %

c. Class 1 have a higher mode average than class 2.

This statement is NOT true:

Class 1 mode = 20 %

Class 2 mode = 52 %

d. Class 1 have a higher median average than class 2.

This statement is true

Class 1 median = 61.5 %

Class 2 median = 53.5 %