Compare distributions using averages and the range

1 A class has a spelling test every week.

Here are the results of four students over a six-week period.

Teddy	6 8 8 9 4 8

Esther	2 6 7 8 9 9

Rosie	7 7 7 7 7 7

Scott	8 6 7 8 7 6

a) Work out the mean result of each student.

Teddy ☐   Rosie ☐   Esther ☐   Scott ☐

b) Work out the range of results for each student.

Teddy ☐   Rosie ☐   Esther ☐   Scott ☐

c) Which student had the greatest mean? _____

d) Which student was the most consistent? _____

e) Who do you think revised for the tests?

2 Tommy comes to school either by bus or by car.

He compares his travel times (in minutes) by bus and by car.

	Mean	Range
Bus	16	7
Car	12	18

a) On average, which method of transport is faster? _____

How do you know?

_____

b) Which method of transport has the least consistent journey times?

_____

How do you know?

_____

3 Filip and Brett are training for a 200 m sprint.

The times (in seconds) for their practice runs are shown.

Filip | 27 | 25 | 26 | 25 | 29 | 26 | 25 | 27 | 25 |

Brett | 25 | 24 | 31 | 32 | 29 | 29 | 27 | 30 | 30 |

a) Who has the fastest practice run time? _____

b) Work out the median practice run time for each student.

Filip ☐   Brett ☐

c) Work out the range of practice run times for each student.

Filip ☐   Brett ☐

d) Who has the best median running time? _____

e) Who is the most consistent? _____

4 A boys' rugby team plays seven games.

Here is the number of points they score in each game.

| 14 | 31 | 12 | 27 | 22 | 45 | 16 |

a) Find the median of the number of points scored.

b) Find the range of the number of points scored.

A girls' rugby team also plays seven games.

Their median score is 28 points and the range of their scores is 44 points.

c) Use the median and range to compare the performances of the boys' rugby team and the girls' rugby team.

Median: _____

_____

Range: _____

_____

5 For an English assignment, Nijah is comparing the number of words in thirty sentences of two different authors.

	Number of words in shortest sentence	Number of words in longest sentence	Median number of words per sentence
Author A	6	15	10
Author B	10	23	14

a) Work out the range of the number of words per sentence for each author.

author A [ ]   author B [ ]

b) Make two comparisons about the number of words per sentence written by the authors.

1. _____

2. _____

6 The table shows the scores of a group of students in English and Science tests.

| English | 47 | 36 | 72 | 42 | 51 | 78 | 38 | 47 | 38 | 52 |
| Science | 58 | 67 | 74 | 59 | 68 | 66 | 68 | 59 | 63 | 24 |

a) Complete the table.

	Mean	Median	Range
English marks			
Science marks			

b) Use an average and the range to make two comparisons between the English and Science marks.

1. _____

_____

2. _____

_____

7 At a charity 10,000 m race, twenty experienced runners finish with a mean time of 48 minutes and a range of 10 minutes.

Here are the times (in minutes) of ten first-time runners in the race.

| 62 | 70 | 58 | 75 | 66 | 57 | 59 | 98 | 72 | 61 |

Make two comparisons between the experienced and first-time runners.

1. _____

_____

2. _____

_____

Will your comparisons change if the runner who took 98 minutes is not included in the data?