Statistics Lesson Practice

<u>Comparing the mean</u>

Paul rolled a dice ten times.

- His mean roll was 5

- His range was 2

Karen rolled a dice ten times.

- Her mean roll was 4

- Her range was 5

Write a comment to compare the results.

Jake recorded his weight over a month.

- His mean weight was 83kg

- His range was 12

Sarah recorded his weight over a month.

- His mean weight was 75kg

- His range was 10

Write a comment to compare the results.

<u>Calculating Standard Deviation</u>

1. Calculate the mean and standard deviation of

   20 21 19 22 18

2. Calculate the mean and standard deviation of

   18   6   9   30   4   28   78

3. A general knowledge test is marked out of 50. The results for a group of people are shown

   30   25   38   45   36   40   27   43   39

   (a) Calculate the mean mark

   (b) Calculate the standard deviation

4. Nesta notes the price of a load of bread sold in 5 different shops.

   £1.20   £1.25   £1.40   £1.28   £1.35

   Calculate the standard deviation of the prices.

Calculating and Comparing SD/Mean

1. The times, in seconds, taken by some boys and some girls to swim one
   length of a pool are shown.

   Boys: 28.3 25.6 29.4 26.5 32.7 27.3 26.2 24.8
   Girls: 33.3 29.7 32.5 29.4 30.6 33.2

(a) Calculate the mean and standard deviation for boys

(b) Calculate the mean and standard deviation for girls

(c) Use the mean and standard deviation to compare the swimming times
    of the boys and girls.

2. (a) The heart rates, in beats per minute, of 6 athletes are:

   61   45   48   52   53   49

   Calculate the mean and standard deviation of this data.

   (b) The heart rates, in beats per minute, of 6 sedentary adults have a mean
   of 65 beats per minute and a standard deviation of 7.6 beats per minute.

   Make two comparisons between the heart rates of the athletes and the
   sedentary adults surveyed.

Creating a 5 figure summary

Practice: Create a 5 figure summary of the following data:

(a) 1 3   4   7   7   9   13

(b) 13   13 15 16 21 23 24 28 29.

(c) 3·2 3·5 3·6 3·8 3·8 4·0 4·4 4·4 4·7 5·3 5·4 5·9

(d) 48, 51, 54, 54, 58, 64, 67, 71, 73, 78.

Determining median, IQR and SIQR

Practice: For each of the following, determine the median, the IQR and the SIQR in your jotters.

a) Examination marks in English of a class of 15 girls:
    58, 61, 48, 43, 62, 62, 51, 43, 54, 43, 70, 65, 42, 59, 48

b) Mathematics marks of the same class:
    49, 53, 87, 56, 45, 38, 54, 39, 62, 70, 41, 43, 83, 49, 49

c) Daily noon temperatures in °C at a seaside resort over a 14 day period.
    19, 20, 19, 17, 21, 18, 19, 24, 25, 25, 28, 25, 23, 18.

Comparing median, IQR and SIQR

1. Make two valid comparisons based on the information shown in the table:

	Team A	Team B
Median	13	15
SIQR	4.5	2

2. A factory manager noted the number of absences, due to 'illness', both the men and women had during 2004.

   Men 2, 2, 2, 3, 3, 3, 5, 5, 5, 6, 7, 7, 7, 7, 7, 8, 8, 8, 10, 11, 11, 12, 12, 13, 17

   Women 0, 0, 0, 0, 1, 1, 1, 2, 2, 2, 2, 3, 4, 4, 4, 6, 6, 7, 8, 8, 8, 8, 8, 9, 9

(a) Find the median and SIQR for each set of data.
(b) Make two valid comparisons.

3. A fertiliser is being tested. Twelve plants grown using the fertiliser and twelve without have their heights measured in centimetres at harvesting.
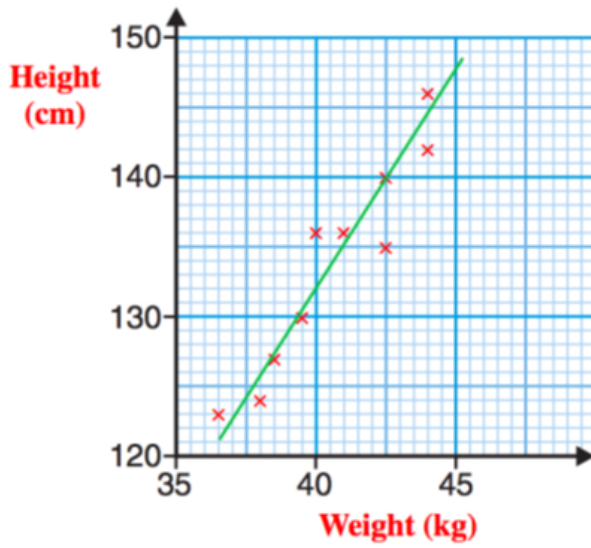
   With fertiliser: 5, 6, 7, 10, 15, 16, 18, 22, 23, 28, 29, 30

   Without fertiliser: 3, 4, 4, 7, 11, 12, 13, 17, 17, 21, 24, 25
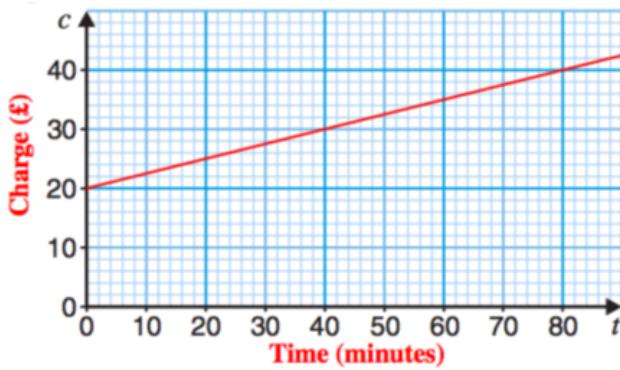
(a) Find the median and SIQR for each.
(b) Make 2 valid comparisons.

Comparing Distributions

(a) Determine the equation of the line of best fit in terms of H and W.

(b) Estimate the height of a boy weighing 42kg.

(a) Determine the equation of the line of best fit in terms of C and t.

(b) Estimate the cost of a repair taking 52 minutes.