

# Comparing Box and Whisker Plots

When comparing box plots it is important to look for how many comparisons they want. The number of marks on offer tells you how many comparisons they want, i.e. 3 marks means 3 comparisons. You need to do your best to comment on different aspects of the box plots rather than all on the same thing. You must also make sure that you use the correct statistical language

The four main comparison areas are 'SASKIA':

Spread

- this refers to the ranges or interquartile ranges calculated from the box plots.

Averages

- this refers to the medians seen on the box plots

Skew

- this refers to the skews\* seen on the box plots

Interpretation

- this refers to an explanation of the spread or average **IN CONTEXT**

Anomalies

- this refers to outliers

\*See skew for separate notes on this

Spread

Use the scale to work out the values for the range and IQR in each box plot.

State which box plot has the largest spread

Decide which is the most significant (usually you will see a more significant difference between the box plots in one than the other)

Averages

Use the scale to work out the value for the median in each box plot

State which box plot has the highest median

Skew

**Positive Skew**

The median is closer to the lower quartile than the upper quartile

This means that although the range of the data is wide, the average of the data is towards the lower end of the scale

Neither of these distributions are better than the other, it just helps us describe the distribution of the data and compare them

**Negative Skew**

The median is closer to the upper quartile than the lower quartile

This means that although the range of the data is wide, the average of the data is towards the upper end of the scale

Interpretation

Comment on how much more 'spread out' the data is for one set or how the data is spread similarly for both sets

Comment on which set of data is higher/lower/faster/slower etc 'on average'

Anomalies

You may also wish to mention any outliers that can be seen with an 'X' on the box plots