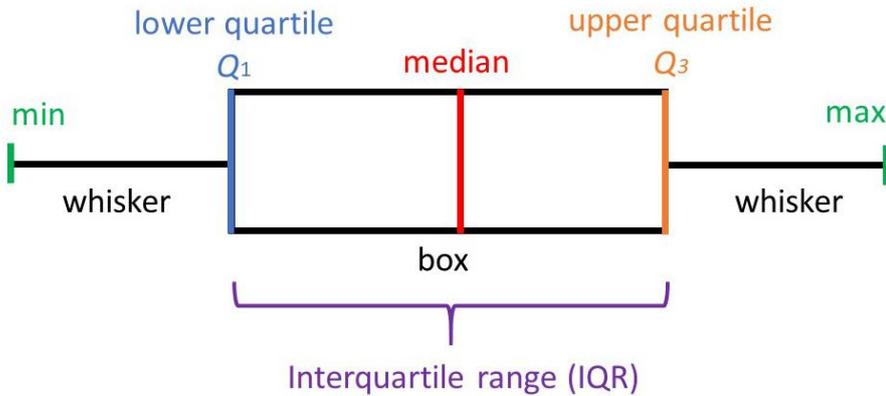


Summarising Data

Examples and key information



Key words

- mean
- mode
- median
- range
- interquartile range
- percentile
- interpercentile range
- modal class interval
- interpolate
- interdecile range
- standard deviation
- outliers

FINDING AN INTERPERCENTILE RANGE

You can find **interpercentile ranges** in much the same way. For any two percentiles, the interpercentile range between them is just their difference. E.g. the **20th to 80th** interpercentile range is $P_{80} - P_{20}$. There are many interpercentile ranges but you find them all in the **same way**.

FINDING THE INTERDECILE RANGE

Deciles, D_1 to D_9 , divide the data into **ten** equal groups — you work them out in a similar way to quartiles and percentiles. E.g. the position of D_9 is $\frac{9(n+1)}{10}$. The **interdecile range** is just the difference between the first and the ninth deciles: $D_9 - D_1$. This is the same as the P_{10} to P_{90} percentile range.

The nine deciles are the same as the percentiles $P_{10}, P_{20}, \dots, P_{90}$.

You don't need to learn these formulas — you'll be given them in the exam. You do need to know **HOW TO USE THEM** though.

$$\sigma = \sqrt{\frac{1}{n} \sum (x - \bar{x})^2}$$

or

$$\sigma = \sqrt{\frac{\sum x^2}{n} - \left(\frac{\sum x}{n}\right)^2}$$

This is \bar{x}^2 (i.e. the mean²).

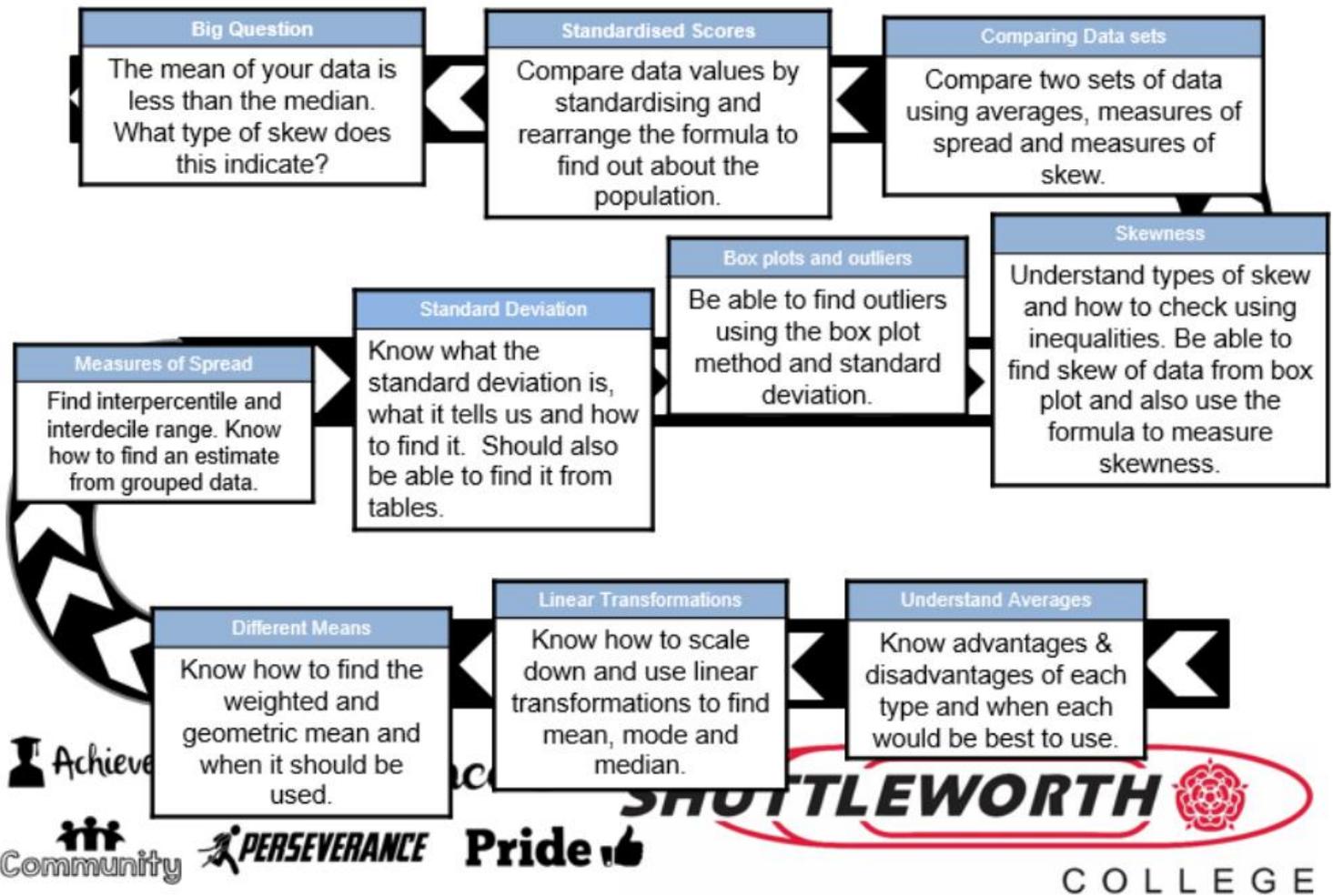
$$\text{standardised score} = \frac{\text{value} - \text{mean}}{\text{standard deviation}} = \frac{x - \mu}{\sigma}$$

This ISNT on the formula sheet — so read it, close your eyes, and get memorising.

Success Criteria: Summarising Data
I can...
Calculate the 10th to 90th percentile from a cumulative frequency graph.
Calculate the standard deviation when given summary statistics.
Make comparisons when given two box plots.
Calculate and interpreting skew if given the mean, median and standard deviation.
Justifying by calculation that a point on a box plot is a outlier.

Think big.
Chase dreams.
Succeed together.

Mathematics Learning Journey: Summarising Data



<p>DEFINITION</p> <p>ETYMOLOGY/MORPHOLOGY</p>	<p>CHARACTERISTICS</p>
<p>EXAMPLES</p>	<p>NON-EXAMPLES</p>