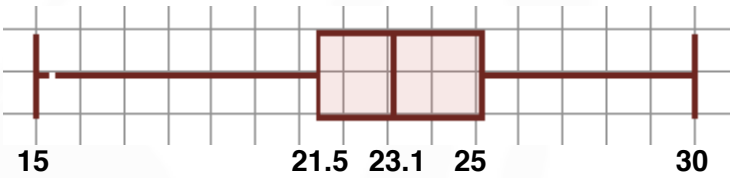
Box Plots

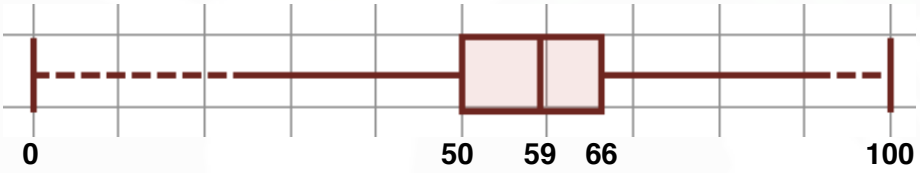
E.g. 1 Draw a box plot for the heights of the set of plants (E.g. 1 from cumulative frequency lesson).

Working:
Median ≈ 23.1 cm (line in the box)
Lower quartile, $Q_1 \approx 21.5$ (LHS of the box)
Upper quartile, $Q_3 \approx 25$ (RHS of the box)
The first interval is $15 \leq h < 18$ so the lowest possible value is 15 — this value becomes the start of the line
The final interval is $27 \leq h < 30$ so the highest possible value is 30 — this value becomes the end of the line



E.g. 2 Draw a box plot for the marks of the students in the maths test. (E.g. 2 from cumulative frequency lesson).

Working:
Median ≈ 59 cm (line in the box)
Lower quartile, $Q_1 \approx 50$ (LHS of the box)
Upper quartile, $Q_3 \approx 66$ (RHS of the box)
The first interval is $0 \leq h < 10$ so the lowest possible value is 0 — this value becomes the start of the line
The final interval is $90 \leq h < 100$ so the highest possible value is 100 — this value becomes the end of the line



E.g. 3 Compare the following data for the English test scores of two classes:

Class	Lowest score	Lower quartile	Median	Upper quartile	Highest score
10X	36	53	65	74	93
10Y	38	48	70	76	87

Working:
1st comment = central tendency
Class 10Y did better on the English because their median is better than the one of 10X (70 vs 65)
2nd comment = spread
However, class 10X's results were more consistent because their interquartile range is lower than 10Y's (21 vs. 28)

Video: Drawing and reading box plots

Solutions to Starter and E.g.s

Exercise

9-1 class textbook:	p483 E14.3 Qu 1-6
A*-G class textbook:	p439 M14.8 Qu 1-6
9-1 homework book:	p166 E14.3 Qu 1-5
A*-G homework book:	p123 M14.8 Qu 1-5

Homework book answers (only available during a lockdown)