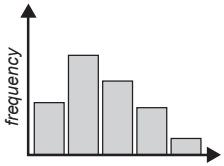
Mathematics - Data

Averages

Mean is average
Mean is average
Mode is most
Mode is most
Median's in the middle
Median's in the middle
Range, high - low
Range, high - low

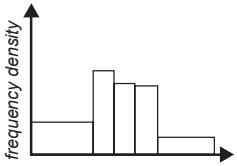
(sing this to the tune of 'Frere Jacques')

Bar Graph



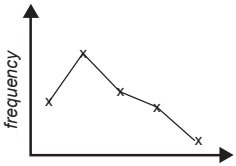
Used for discrete data.
Bars are all the same width.
Bar height represents frequency.

Histogram



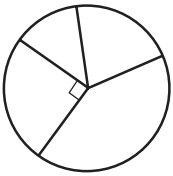
Used for continuous numerical data which has been classified into groups. Bars may be different widths. The area of the bar represents frequency.

Frequency Polygon



May be used for both discrete & continuous data.
Points should be plotted in the middle of corresponding bars (bar chart or histogram)

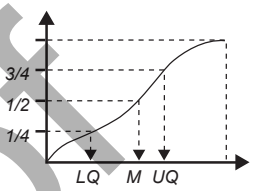
Pie Chart (Pie Graph)



Size of angle = $\frac{\text{frequency}}{\text{total frequency}} \times 360°$

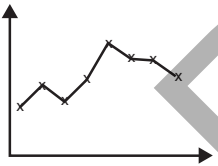
the angles should add up to 360°
Used to show proportions of an identifiable whole.

Cumulative Frequency Graph



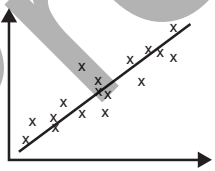
Useful for estimating median & quartiles for grouped data. Plot at the top end of the groups.

Line Graph (Jagged Line Graph)



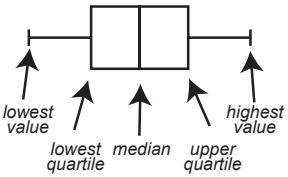
Used for continuous data. Shows relationship between two variables.

Scatter Graph



Used to show correlation. Drawing a line of best fit allows estimation of values of one variable from values of the other variable.

Box and Whisker Plot



Clearly identifies the middle 50%

Calculator skills

Always check how your calculator works
Try the calculation 2 + 3 x 5 ...

If your result is 25

Your calculator works every step out in order before performing the next step.
You should work each bit of a calculation out in turn, write each result down and bring all then bits together in a final calculation.

If your result is 17

Your calculator uses BIDMAS/BODMAS
Brackets
Indices
Division
Multiplication
Addition
Subtraction

This is the best calculator

Standard index form
Use the 'exp' or 'x 10^x' button

Calculator display
$6.2 \times 10^6 = 6.2 \times 1.000\,000 = 6\,200\,000$
$6.2 \times 10^{-6} = 6.2 \times 0.000\,001 = 0.000006\,2$

Useful Buttons

+/-	can make a number positive or negative
$\mathbf{x}^2$	squares a number
$\mathbf{x}^y$	raises x to the power of y
$\sqrt{}$	finds the square root
π	gives pi accurately
a b/c	gives fractions
shift/inv/2ndF	Gets the inverse function over the button to work