

Year 11 Higher Unit 1 Knowledge Organiser – Collecting Data, Cumulative Frequency, Box Plots and Histograms, Quadratics, Expanding, Sketching Graphs.

Statistics and Sampling		
1	Primary Data	Data that has been collected from the original source.
2	Secondary Data	Data obtained from another source.
3	Population	The group of individuals from which the data has been obtained.
4	Sample	A selection of individuals taken from the population
5	Biased sample	A sample that doesn't represent the whole population.
Cumulative Frequency, Box Plots and Histograms		
1	Cumulative frequency	The sum of the frequency up to the upper-class boundary.
2	Cumulative frequency diagram	A cumulative frequency diagram is drawn by plotting the upper-class boundary with the cumulative frequency.
3	Upper quartile	The number that is the middle of the upper half of the data set, at $\frac{3}{4}$.
4	Lower quartile	The number that is the middle of the lower half of the data set, at $\frac{1}{4}$.
5	Median	The middle value of a set of numbers after they have been put in ascending order.
6	Range	Largest value – smallest value.
7	Box plot	A chart that displays the minimum, maximum, lower quartile, upper quartile and median of a data set.
8	Histogram	A bar chart where the area (not the height) of the bar represents the frequency.
9	Frequency on a histogram	$frequency = class\ width \times frequency\ density$
10	Frequency density	The frequency per unit for the data in each class. $Frequency\ density = \frac{Frequency}{Class\ Width}$
Quadratics, expanding more than two brackets, sketching graphs, graphs of circles cubes and quadratics		
1	Quadratic function	An equation written as $y = ax^2 + bx + c$. Creates a curved graph.
2	Roots	Where the graph cuts the x axis / $y=0$.

3	Y Intercept	The point in which the graph crosses the y axis (c).
4	Maximum turning point	Where the gradients of a graph changes from positive to negative.
5	Minimum turning point	Where the gradients of a graph changes from negative to positive.
6	Cubic functions	An equation written as $y = ax^3 + bx^2 + cx + d$. Creates a curved graph.
7	Simultaneous equations	Two or more equations that have the same solution to their variables.
8	Graphical solutions to simultaneous equations	Where the graphs of each simultaneous equation intercept each other.
9	Iteration	The repetition of a mathematical process applied to the result of the previous application.