

Brockington College

Mathematics

Personal Learning Checklist



To help you use this personal learning checklist, the target levels for each topic have given to help you decide what to focus on for your tier of entry

Topic	Target Level	Sub-Topic	RAG Rating	Additional Support?
Algebra	9	Approximate solutions to equations using iteration.		
	9	Equation of a circle		
	9	Equation of a tangent		
	8	Algebra and Proof		
	8	Gradients and area under a graph		
	8	Graphs of trigonometric functions		
	8	Quadratic equations (completing the square)		
	7	Composite functions		
	7	Expand the product of two or more binomials		
	7	Factorising difficult quadratic expressions		
	7	Geometric Sequences		
	7	Graphs of exponential functions		
	7	Quadratic equations (needing re-arrangement)		
	7	Quadratic equations (quadratic formula)		
	7	Real-life exponential graphs		
	7	Represent quadratic inequalities		
	7	Simultaneous equations (non-linear)		
	7	Solve quadratic inequalities		
	7	Translations and reflections of a function		
	7	Turning points & completing the square		
	6	Algebraic fractions		
	6	Identifying parallel lines		
	6	Inverse functions		
	6	Linear inequalities in two variables		
	6	n th term of a quadratic sequence		
	6	Quadratic equations (factorisation)		
	6	Quadratic equations (graphical methods)		

6	Represent linear inequalities		
6	Simultaneous equations (linear)		
5	Algebraic argument		
5	Algebraic terminology		
5	Cubic and Reciprocal graphs		
5	Deduce quadratic roots algebraically		
5	Derive an equation		
5	Equation of a line		
5	Expand the product of two binomials		
5	Factorising quadratic expressions		
5	Fibonacci, quadratic and simple geometric sequences		
5	Graphical solution to equations		
5	Inequalities on number lines		
5	Linear equations		
5	Quadratic graphs		
5	Reciprocal real-life graphs		
5	Simplify indices		
5	Simplify surds		
5	Solve linear inequalities in one variable		
5	Writing formulae and expressions		
4	Changing the subject		
4	Collecting like terms		
4	Expressions		
4	Factorise single bracket		
4	Finding the equation of a line		
4	Graphs of linear functions		
4	Graphs of quadratic functions		
4	Linear equations one unknown		
4	Multiplying single brackets		
4	Non-standard real life graphs		
4	n th term of a linear sequence		
4	Number machines		
4	Substitution		
4	Using " $y = mx + c$ "		
3	Coordinates in four quadrants		
3	Plotting straight line graphs		
3	Position to term rules		
3	Sequences of square, triangular and cube numbers		
3	Using Formulae		
2	Sequences and Rules		

Geometry and Measures

8	Circle theorems		
8	Vector arguments and proof		
7	Area of a triangle		
7	Cosine Rule		
7	Pythagoras and trig 2D and 3D		
7	Sine Rule		
6	Combined transformations		
6	Congruence and Similarity		
6	Standard trigonometric ratios		
5	Arc lengths and sectors		
5	Derive triangle results		
5	Enlargements and negative SF		
5	Loci		
5	Pythagoras		
5	Similarity and Congruence		
5	Standard constructions		
5	Surface Area		
5	Trigonometric ratios		
5	Volume		
4	Alternate and corresponding angles		
4	Area of a circle		
4	Areas of composite shapes		
4	Areas of triangles, trapezia and parallelograms		
4	Bearings		
4	Circle terminology		
4	Circumference of a circle		
4	Congruent triangles		
4	Enlargements and fractional SF		
4	Perimeter of 2D shapes		
4	Plans and elevations		
4	Polygons		
4	Solve geometrical problems		
4	Vector arithmetic		
4	Volume of prisms		
3	3-D Shapes		
3	Congruent and similar shapes		
3	Geometric terminology and diagrams		
3	Measuring lines and angles		
3	Properties of quadrilaterals		
3	Properties of triangles		
3	Translations and vectors		
3	Using standard units		

Number

8	Surds		
7	Index Laws (negative and fractional)		
7	Product rule		
7	Recurring Decimals		
7	Upper and lower bounds		
6	Finance 1		
6	Powers and Roots		
6	Product of prime factors		
6	Using Pi		
5	Calculating with fractions		
5	Error intervals		
5	Index Laws		
5	Limits of accuracy		
4	Adding and subtracting fractions		
4	Checking calculations		
4	Compound measures		
4	Converting metric units		
4	Estimation		
4	Fractions and percentages		
4	Fractions and ratio problems		
4	Interpret calculator displays		
4	LCM and HCF		
4	Multiples and factors		
4	Multiplying fractions		
4	Operations		
4	Order of operations		
4	Powers		
4	Rounding		
4	Standard Form		
4	Terminating decimals and fractions		
3	Decimals		
3	Listing outcomes		
3	Prime numbers		
3	Using standard units		
2	Add and Subtract integers		
2	Dividing integers		
2	Multiplying integers		
2	Ordering numbers		
2	Place value		

Probability	7	Conditional Probability		
	5	Probability of dependent events		
	5	Probability of independent events		
	4	Mutually exclusive sum		
	4	Relative Frequency		
	4	Tables and Grids		
	4	Theoretical Probability		
	4	Unbiased Samples		
	4	Venn Diagrams		
	3	Frequency Trees		
	3	Probability of equally likely outcomes		
Ratio, Proportion and Rates of change	9	Gradients and the rate of change		
	7	General iterative processes		
	6	Direct and inverse proportion		
	5	Compound Units		
	5	Gradient & the rate of change		
	5	Growth and decay		
	5	Interpret Proportion		
	5	Percentage change		
	5	Problems with compound units		
	5	Scale factors and similarity		
	5	Simple Interest and Financial Maths		
	5	Solve Proportion Problems		
	4	Compare Fractions, Decimals and Percentages		
	4	Compare lengths, area, volume		
	4	Comparing quantities as a ratio		
	4	Division of a quantity as a ratio		
	4	Express one quantity as a % of another		
	4	Percentage change		
	4	Problems involving ratio		
	4	Proportion and ratio		
	4	Ratio and fractions		
	4	Ratio Sharing		
	3	Convert standard units		
	3	Express one quantity as a fraction of another		
	3	Use ratio notation		
	3	Use scale factors, diagrams and maps		

Statistics

6	Boxplots		
6	Cumulative frequency		
6	Histograms with unequal class widths		
6	Quartiles and Interquartile Range		
5	Histograms with equal class widths		
5	Scatter graphs		
4	Comparing data using graphs		
4	Comparing Distributions		
4	Correlation		
4	Population		
4	Sampling		
4	Scatter Diagrams		
4	Time series		
3	Charts and Diagrams		
3	Pie Charts		
3	Types of data		
3	Vertical Line Charts		