

GCSE Maths HIGHER CHECKLIST

Algebra

- ❖ Approximate solutions to equations using iteration
- ❖ Equation of a circle
- ❖ Equation of a tangent
- ❖ Algebra and Proof
- ❖ Gradients and area under a graph
- ❖ Graphs of trigonometric functions
- ❖ Quadratic equations (completing the square)
- ❖ Composite functions
- ❖ Expand the product of two or more binomials
- ❖ Factorising difficult quadratic expressions
- ❖ Geometric Sequences
- ❖ Graphs of exponential functions
- ❖ Quadratic equations (needing re-arrangement)
- ❖ Quadratic equations (quadratic formula)
- ❖ Real-life exponential graphs
- ❖ Represent quadratic inequalities
- ❖ Simultaneous equations (non-linear)
- ❖ Solve quadratic inequalities
- ❖ Translations and reflections of a function
- ❖ Turning points & completing the square
- ❖ Algebraic fractions
- ❖ Identifying parallel lines
- ❖ Inverse functions
- ❖ Linear inequalities in two variables
- ❖ nth term of a quadratic sequence
- ❖ Quadratic equations (factorisation)
- ❖ Quadratic equations (graphical methods)
- ❖ Represent linear inequalities
- ❖ Simultaneous equations (linear)
- ❖ Algebraic argument
- ❖ Algebraic terminology
- ❖ Cubic and Reciprocal graphs
- ❖ Deduce quadratic roots algebraically
- ❖ Derive an equation
- ❖ Equation of a line
- ❖ Expand the product of two binomials
- ❖ Factorising quadratic expressions
- ❖ Fibonacci, quadratic and simple geometric sequences
- ❖ Graphical solution to equations
- ❖ Inequalities on number lines
- ❖ Lines
- ❖ n equations
- ❖ Quadratic graphs

- ❖ Reciprocal real-life graphs
- ❖ Simplify indices
- ❖ Simplify surds
- ❖ Solve linear inequalities in one variable
- ❖ Writing formulae and expressions
- ❖ Changing the subject
- ❖ Collecting like terms
- ❖ Expressions
- ❖ Factorise single bracket
- ❖ Finding the equation of a line
- ❖ Graphs of linear functions
- ❖ Graphs of quadratic functions
- ❖ Linear equations one unknown
- ❖ Multiplying single brackets
- ❖ Non-standard real life graphs
- ❖ nth term of a linear sequence
- ❖ Number machines
- ❖ Substitution
- ❖ Using " $y = mx + c$ "

Geometry and Measures

- ❖ Circle theorems
- ❖ Vector arguments and proof
- ❖ Area of a triangle
- ❖ Cosine Rule
- ❖ Pythagoras and trig 2D and 3D
- ❖ Sine Rule
- ❖ Combined transformations
- ❖ Congruence and Similarity
- ❖ Standard trigonometric ratios
- ❖ Arc lengths and sectors
- ❖ Derive triangle results
- ❖ Enlargements and negative SF
- ❖ Loci
- ❖ Pythagoras
- ❖ Similarity and Congruence
- ❖ Standard constructions
- ❖ Surface Area
- ❖ Trigonometric ratios
- ❖ Volume
- ❖ Alternate and corresponding angles
- ❖ Area of a circle
- ❖ Areas of composite shapes
- ❖ Areas of triangles, trapezia and parallelograms
- ❖ Bearings
- ❖ Circle terminology
- ❖ Circumference of a circle
- ❖ Congruent triangles

- ❖ Enlargements and fractional SF
- ❖ Perimeter of 2D shape
- ❖ Plans and elevations
- ❖ Polygons
- ❖ Solve geometrical problems
- ❖ Vector arithmetic
- ❖ Volume of prisms

Statistics

- ❖ Boxplots
- ❖ Cumulative frequency
- ❖ Histograms with unequal class widths
- ❖ Quartiles and Interquartile Range
- ❖ Histograms with equal class widths
- ❖ Scatter graphs
- ❖ Comparing data using graphs
- ❖ Comparing Distributions
- ❖ Correlation
- ❖ Population
- ❖ Sampling
- ❖ Scatter Diagrams
- ❖ Time series

Probability

- ❖ Conditional Probability
- ❖ Probability of dependent events
- ❖ Probability of independent events
- ❖ Mutually exclusive sum
- ❖ Relative Frequency
- ❖ Tables and Grids
- ❖ Theoretical Probability
- ❖ Unbiased Samples
- ❖ Venn Diagrams

Number

- ❖ Surds
- ❖ Index Laws (negative and fractional)
- ❖ Product rule
- ❖ Recurring Decimals
- ❖ Upper and lower bounds
- ❖ Finance 1
- ❖ Powers and Roots
- ❖ Product of prime factors
- ❖ Using Pi
- ❖ Calculating with fractions
- ❖ Error intervals
- ❖ Index Laws

- ❖ Limits of accuracy
- ❖ Adding and subtracting fractions
- ❖ Checking calculations
- ❖ Compound measures
- ❖ Converting metric units
- ❖ Estimation
- ❖ Fractions and percentages
- ❖ Fractions and ratio problems
- ❖ Interpret calculator displays
- ❖ LCM and HCF
- ❖ Multiples and factors
- ❖ Multiplying fractions
- ❖ Operations
- ❖ Order of operations
- ❖ Powers
- ❖ Rounding
- ❖ Standard Form
- ❖ Terminating decimals and fractions

Ratio, Proportion and rates of change

- ❖ Gradients and the rate of change
- ❖ General iterative processes
- ❖ Direct and inverse proportion
- ❖ Compound Units
- ❖ Gradient & the rate of change
- ❖ Growth and decay
- ❖ Interpret Proportion
- ❖ Percentage change
- ❖ Problems with compound units
- ❖ Scale factors and similarity
- ❖ Simple Interest and Financial Maths
- ❖ Solve Proportion Problems
- ❖ Compare Fractions, Decimals and Percentages
- ❖ Compare lengths, area, volume
- ❖ Comparing quantities as a ratio
- ❖ Division of a quantity as a ratio
- ❖ Express one quantity as a % of another
- ❖ Percentage change
- ❖ Problems involving ratio
- ❖ Proportion and ratio
- ❖ Ratio and fractions
- ❖ Ratio Sharing