



GCSE 9-1 MATHS

HIGHER TIER REVISION TOPIC LIST

NUMBER

- Basic arithmetic
- Negative numbers
- Powers and roots
- Primes, factors and multiples
- Order of operations (BIDMAS)
- HCF/LCM
- Use of a calculator
- Working with decimals
- Working with fractions
- Working with percentages
- Reverse percentages
- Growth and decay - including simple/compound interest
- Working with ratios
- Direct/inverse proportion
- Indices
- Standard units
- Compound units
- Converting area and volume units
- Simplifying/rationalising surds
- Standard form
- Estimation
- Estimate powers and roots
- Capture/recapture questions
- Counting combinations
- Upper/lower bounds, error intervals, giving answers to "an appropriate degree of accuracy"
- Recurring decimals



ALGEBRA

- Algebraic manipulation
- Forming and solving equations
- Expanding and factorising
- Expanding three brackets
- Linear simultaneous equations
- Non-linear simultaneous equations
- Solving simultaneous equations graphically
- Factorising/solving quadratic equations
- Factorising harder quadratics
- Completing the square
- The quadratic formula
- Changing the subject of a formula
- Algebraic fractions
- Functions
- Proof
- Iteration
- Straight line graphs
- Quadratic and cubic graphs
- Trigonometric and exponential graphs
- Reciprocal graphs
- Equation of a circle (including finding the equation of a tangent)
- Transformations of functions/graphs - translations and reflections
- Real life graphs
- Speed/time graph
- Rates of change / estimating gradients
- Estimating areas under curved graphs
- Solving linear inequalities
- Linear inequalities on a graph
- Solving quadratic inequalities
- nth term of arithmetic sequences and Fibonacci sequences
- Quadratic sequences
- Recurrence relations
- Geometric progressions / exponential growth and decay

GEOMETRY

- Angles and parallel lines
- Area and perimeter
- Volume
- Circles, arcs and sectors
- Polygons
- Congruence
- Similar shapes : length
- Similar shapes : area and volume
- Pythagoras' Theorem
- SOHCAHTOA
- Sine rule / cosine rule / area formula
- Exact trigonometry values
- 3D trigonometry
- Transformations (rotations, translations, enlargements)
- Successive transformations and invariance
- Bearings
- Loci and constructions
- Circle theorems
- Proofs of circle theorems
- Plans and elevations
- Vectors

STATISTICS

- Interpreting and representing data
- Stem and leaf diagrams
- Sampling
- Averages
- Quartiles and box plots
- Cumulative frequency
- Histograms
- Scatter diagrams and correlation
- Probability
- Relative frequency / experimental probability
- Tree diagrams
- Sets and venn diagrams
- Conditional/"Given that" probability
- Frequency trees