Maths Higher

www.mrbartonmaths.com (videos, notes, worksheets with answers, GCSE questions)

www.corbettmaths.com (videos, practice papers, worksheets, revision cards)

www.pythagorasandthat.co.uk (notes)

www.mymaths.co.uk (online lessons and homeworks with immediate feedback)

Year 10

- Percentages (writing a number as a percentage of another, percentages of an amount, increase/decrease, multipliers, compound interest, simple interest, depreciation, reverse percentages)
- Indices (square numbers and square roots, cube numbers and cube roots, using positive powers, laws of indices, zero indices, negative indices, fractional indices)
- Standard form (add, subtract, multiply, divide)
- Surds (simplify, multiplying and dividing surds, expanding brackets with surds)
- Probability (basic probability problems, two way tables, tree diagrams, Venn diagrams, expectation, relative frequency)
- Statistics (mode, median, mean, including from a frequency table, range, interquartile range, cumulative frequency, box plots, scatter graphs, histograms, comparing distributions)
- Circle Theorems
- Circumference and area of circles including length of an arc, area of a sector
- Volume of 3D shapes (use formulae for cone, sphere, cylinder)
- Measures (metric and imperial, standard units, speed, density, bounds/error intervals/ limits of accuracy)
- Pythagoras' Theorem
- Trigonometry (SOH CAH TOA, exact trig values)
- Sketching graphs (linear, quadratic, cubic, reciprocal, exponential)
- Quadratics (expanding, factorising, solving by factorising/ using the quadratic formula, DOTS, plotting graphs, roots, turning points)
- Polygons (angles in parallel lines, interior, exterior angles) – Did in Year 8 and 9
- Inequalities (solving, represent on a number line, graphical inequalities)
- Solving linear equations including simultaneous equations

Year 11

- Rearranging Formulae
- Trigonometry (sine rule, cosine rule, area of a triangle, sine graph, cosine graph)
- Transformations (including negative enlargements and combinations of transformations)
- Direct and Inverse Proportion (equations involving the constant k)
- Sequences (nth term of linear and quadratic sequences)
- Vectors (notation, adding and subtracting vectors, solving problems and proofs)
- Similar Shapes (1D, 2D, 3D)
- Linear Graphs (y = mx + c, parallel and perpendicular-lines)
- Equations of circles and tangents
- Functions (notation, composite functions, iterations)
- Pre-calculus (rates of change)
- Exponential growth and decay
- Quadratic inequalities
- Algebraic proof
- Graph transformations
- Fractions and recurring decimals
- Geometric progression (just need to recognise them)
- Congruence (SSS, SAS, ASA or AAS, RHS)
- Velocity-time graphs, area under a curve

Prior knowledge

- Converting mixed numbers and improper fractions
- Converting fractions and decimals
- Product of prime factors
- Fraction of an amount (including going backwards)
- Mid-point of a line
- Expanding brackets and factorising linear expressions
- Converting units of area and volume
- Scale drawings and bearings
- **Constructions/ Loci**
- **Area (triangle, parallelogram, trapezium, and with algebra)**
- **Compound area (often with circles)**
- **Plans and Elevations**
- **Ratio**
- **Distance-time graphs**
- Pie charts