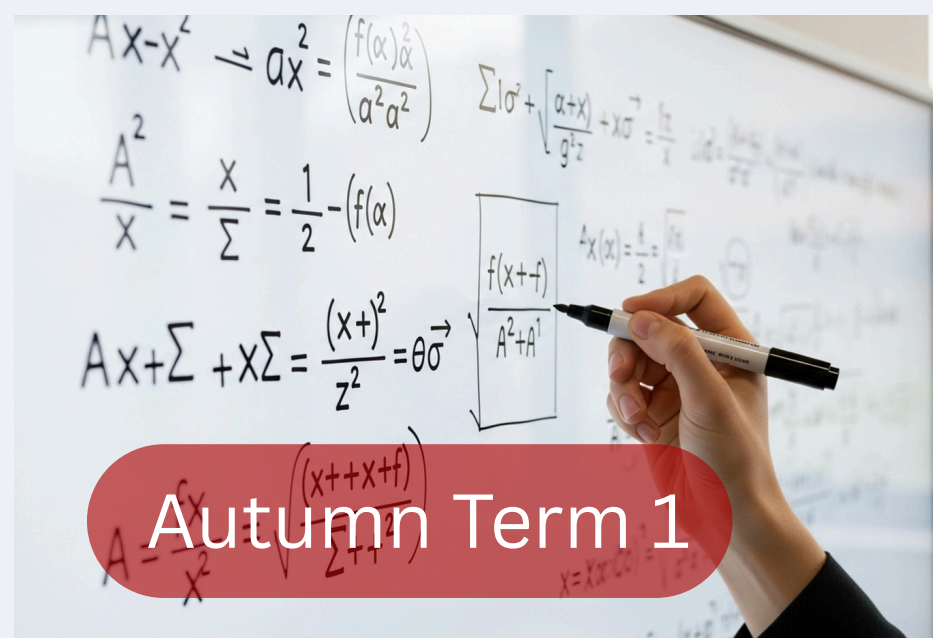


MATHS

YEAR 10 HIGHER LEARNING JOURNEY INFORMATION



Algebraic manipulation
Equations
inequalities and formulae Quadratic
expressions and equations



Autumn Term 1

Students begin by consolidating algebraic manipulation, including simplifying expressions, laws of indices, expanding and factorising brackets, and solving equations and inequalities. They learn to change the subject of simple and complex formulae, including cases where the subject appears more than once. Quadratic work includes expanding double and triple brackets, factorising, completing the square, and solving quadratics using different methods. The term also covers percentages: calculating amounts, percentage change, repeated change, and interest problems, both simple and compound.

Perimeter
area and volume
Interpret and represent data
Non-linear graphs



Spring Term 2

This term introduces data handling techniques such as averages, grouped frequency tables, scatter graphs, interpolation, and extrapolation. Students learn to draw and interpret histograms, cumulative frequency diagrams, and box plots. Non-linear graphs are explored, including quadratics, cubics, tangents, and estimating areas under curves. Oracy explain their thinking Angle work includes rules for points, lines, triangles, quadrilaterals, and polygons, as well as parallel lines and proofs of geometric facts.

Percentages
Ratio and Scale
Work with fractions



Autumn Term 2

This half term focuses on ratio and scale, including sharing in a ratio, linking ratios and fractions, and solving ratio problems algebraically. Students work with fractions and algebraic fractions, performing all four operations and simplifying complex cases. Non-calculator methods are revisited for multi-step problems and recurring decimals. Straight-line graphs are introduced in depth, covering plotting, finding equations, gradients, intercepts, and perpendicular lines, as well as representing inequalities graphically and interpreting real-life graphs.

Angles Graphs
and diagrams
Vectors



Summer Term 1

Students consolidate graphing skills with pie charts, time-series graphs, and frequency polygons. They compare distributions using box plots and cumulative frequency diagrams. Vectors are introduced, covering notation, scalar multiplication, addition, subtraction, and journeys in shapes, including parallel vectors. Probability is revisited with Venn diagrams and set notation, reinforcing understanding of independent and dependent events.

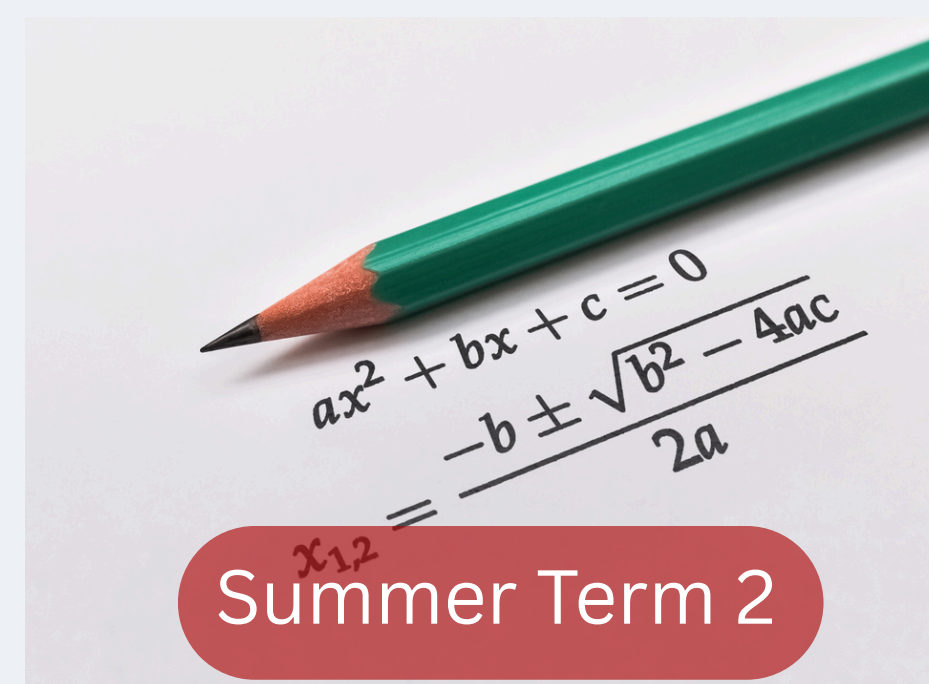
Non-calculator methods
Straight line graphs
Probability
Rounding and estimation



Spring Term 1

Students study probability, including listing outcomes, relative frequency, tree diagrams for independent and dependent events, and conditional probability. They also cover rounding, estimation, error intervals, and bounds. Geometry topics include perimeter, area, and volume of 2D and 3D shapes, circles, sectors, prisms, and cylinders, alongside nets and surface area. These skills are applied to problem-solving tasks and prepare students for cumulative assessment.

Factors powers and surds
Pythagoras' theorem and
trigonometry
Simultaneous equations



Summer Term 2

The final term focuses on powers, roots, and surds, including simplifying, rationalising denominators, and expanding brackets with surds. Pythagoras' theorem is applied in 2D and 3D contexts. Trigonometry is extended to include sine, cosine, and tangent ratios, exact values, and solving problems in non-right-angled triangles using sine and cosine rules. Students also tackle simultaneous equations, including linear and non-linear cases, using graphical, substitution, and elimination methods.