

Year 9 Units

| | Autumn (HT1 and 2) | Spring (HT3 and 4) | Summer (HT5) |
|----------------------|---|--|---|
| Pi 3 Support | <ul style="list-style-type: none"> • Number properties and calculations – negatives, squares, cubes, roots and powers. • Sequences and equations – the nth term and solving equations • Statistics - planning a survey, tables, comparing data, pie charts and scatter graphs. • Fractions, decimals and percentages – recurring decimals. Comparing proportion, the four operations with fractions (+, -, x, ÷) | <ul style="list-style-type: none"> • Geometry in 2D and 3D – Angles, maps, scales, constructions, 3D solids and Pythagoras’ theorem. • Algebraic and real-life graphs – reading and plotting distance-time graphs, midpoints, intercepts and gradients. • Multiplicative reasoning – using ratios, proportions, measuring and conversions. • Algebraic and geometric formulae – substitution, formulae in geometry, compound shapes and circles. | <ul style="list-style-type: none"> • Probability – experiments, sample space diagrams, two-way tables and probability trees. • Polygons and transformations – Quadrilaterals, triangles, transformations and congruent shapes |
| Theta 3 Core | <ul style="list-style-type: none"> • Indices and standard form – calculations, estimates and the laws of indices. • Expressions and formulae – substitution, writing expressions, single and double brackets. • Dealing with data – planning a survey , collecting data, display and average analysis to compare data sets and write a report. • Multiplicative reasoning – enlargement, scale factors, percentage and rates of change. | <ul style="list-style-type: none"> • Constructions – scales and loci • Equations, inequalities and proportionality – using and solving equations, simultaneous equations, trial and improvement. • Circles, Pythagoras’ theorem and prisms. • Sequences and graphs – straight line graphs, quadratic functions and non-linear graphs. | <ul style="list-style-type: none"> • Probability – experiments, probability diagrams and independent events. • Comparing shapes – ratios in triangles, congruent and similar shapes, trigonometry ratios. |
| Delta 3 Extension | <ul style="list-style-type: none"> • Powers and roots – Indices, reciprocals and standard form. • Quadratics – sequences, expanding, factorising and solving quadratic equations. • Inequalities, equations and formulae – Using index laws, changing the subject and algebraic fractions. • Collecting and analysing data – estimating statistics, cumulative frequency, box plots and histograms. | <ul style="list-style-type: none"> • Multiplicative reasoning – direct and non-linear proportion, arcs and sectors of circles. • Non-linear graphs – quadratic, cubic and reciprocal graphs, solving quadratic equations using graphs. • Accuracy and measure – rates of change, density and pressure, upper and lower bounds. • Graphical solutions to simultaneous equations, using $y = mx + c$, solving inequalities. | <ul style="list-style-type: none"> • Trigonometric ratios – sine, cosine and tangent, trigonometric graphs. • Mathematical reasoning - modelling real-life situations, explain, show, justify and proof. |
| | <p><u>Assessments</u></p> <ul style="list-style-type: none"> • Each unit will include a unit assessment. • A half termly test will be based on all of the work encountered up to that point in the year. | | |