



Subject Curriculum – Year 9 Most Able

Big Ideas & Purpose

The aims of teaching and learning mathematics are to encourage and enable students to: recognise that mathematics permeates the world around us; appreciate the usefulness, power and beauty of mathematics and enjoy mathematics and develop patience and persistence when solving problems.

Programme of Study

HT1	HT2	HT3	HT4	HT5	HT6
Powers and roots Reciprocals Indices Standard form STEM: Calculating with standard form Fractional indices Surds Quadratics Sequences Expanding Factorising Solving quadratic equations Inequalities, equations and formulae Inequalities Using index laws Solving equations Changing the subject Algebraic fractions	Collecting and analysing data STEM: Data collection Presenting and comparing data Estimating statistics Box plots Cumulative frequency graphs Histograms	Multiplicative reasoning Direct proportion Solving problems using direct proportion Non-linear proportion Arcs and sectors of circles Non-linear graphs Graphs of quadratic functions Solving quadratic equations Graphs of cubic functions STEM: Graphs of reciprocal functions	Accuracy and measures Rates of change Density and pressure Upper and lower bounds Calculating with bounds STEM: Accurate measures in real life Graphical solutions Simultaneous equations Using $y = mx + c$ More simultaneous equations Graphs and simultaneous equations Solving inequalities	Trigonometry The tangent ratio The sine ratio The cosine ratio Using trigonometry to find angles Solving problems using trigonometry Trigonometric graphs	Mathematical reasoning Explain, show and justify MODELLING: Real-life situations Proof More proof

Key Assessments

- Assessments take place after every unit.
- Usually 2 per half term.
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- Year 9 will take an end of year examination in the summer term.

Key Skills

- To provide opportunities for learner to demonstrate their knowledge of mathematics across a whole range of topic areas.
- To allow learners to develop their problem-solving strategies and provide the confidence and skills required to tackle unfamiliar challenges.

Links to Careers

- Mathematics teaches accuracy and precision in work. The analytical and problem-solving skills you learn are valuable in many different careers, for example Accountancy, Teaching, Business, Medicine, Architecture and Computer Studies.



Subject Curriculum – Year 9 Middle Ability

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Programme of Study	HT1	HT2	HT3	HT4	HT5	HT6
	Indices and standard form Indices Calculations and estimates STEM: Standard form Expressions and formulae Substituting into expressions Writing expressions and formulae STEM: Using formulae Rules of indices and brackets Expanding double brackets	Dealing with data Planning a survey Collecting data Calculating averages Display and analyse data Writing a report Multiplicative reasoning Enlargement Negative and fractional scale factors FINANCE: Percentage change Rates of change Problem-solving	Constructions Using scales Basic constructions Constructing triangles Loci Equations, inequalities and proportionality Solving equations Using equations Trial and improvement Using and solving Inequalities STEM: Proportion Simultaneous equations	Circles, Pythagoras and prisms Circumference of a circle Area of a circle Pythagoras' theorem Prisms and cylinders STEM: Errors and bounds Sequences and graphs nth term of arithmetic sequences Non-linear sequences Graphing rates of change Using $y = mx + c$ More straight-line graphs More simultaneous equations Graphs of quadratic functions Non-linear graphs	Probability Experimental probability Probability diagrams Independent events	Comparing shapes Congruent and similar shapes Ratios in triangles The tangent ratio The sine ratio The cosine ratio

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Key Skills

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Links to Careers

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Subject Curriculum – Year 9 Lower Ability

Big Ideas & Purpose

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Programme of Study

HT1	HT2	HT3	HT4	HT5	HT6
Number calculations Adding and subtracting Multiplying Dividing Multiplying and dividing negative numbers Squares, cubes and roots More powers Calculations Sequences and equations Algebraic expressions Using the nth term Finding the nth term Solving equations	Statistics Planning a survey Statistics from tables Comparing data Pie charts and scatter graphs FINANCE: Misleading graphs Writing a report Fractions, decimals and percentages Equivalent proportions Recurring decimals Adding and subtracting fractions Multiplying fractions Dividing fractions Comparing proportions FINANCE: Percentage change	Geometry in 2D and 3D Angles Maps and scales Constructions 3D solids MODELLING: Pythagoras' theorem Algebraic and real-life graphs Reading graphs Plotting graphs Distance-time graphs Midpoints Intercepts and gradients	Multiplicative reasoning STEM: Using ratios Using proportions Problem-solving with proportions Measures and conversions Algebraic and geometric formulae Substituting into formulae More complex formulae Formulae in geometry Compound shapes Circles	Probability Probability experiments Sample space diagrams MODELLING: Two-way tables Tree diagrams	Polygons and transformations Quadrilaterals Triangles Transformations Enlargement Congruent shapes

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Key Skills

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- To allow learners to develop their problem-solving strategies and provide the confidence and skills required to tackle unfamiliar challenges.

Links to Careers

- Mathematics teaches accuracy and precision in work. The analytical and problem-solving skills you learn are valuable in many different careers, for example Accountancy, Teaching, Business, Medicine, Architecture and Computer Studies.