

Mathematics Curriculum Overview

Curriculum Intent:

- The teaching in the Mathematics Department provides a foundation for understanding the world, the ability to reason mathematically and appreciation of the beauty and power of mathematics. We aim to develop a sense of enjoyment and curiosity about the subject and to engage students in developing a deeper understanding of fundamental concepts. Students will be able to recall and apply knowledge in real life situations and cross curricular subjects.
- Students develop the confidence to apply their mathematics to a variety of problems and are given the opportunity to show resilience in seeking their solutions.
- Students are frequently given the opportunity to be inquisitive through problem solving, being reflective and flexible in their approaches. Students are then empowered to show courage in applying that knowledge to other subjects and real-life situations.
- Students have opportunities to experience various enrichment activities which encourage them to be ambitious in their post 16 choices.

Year 7 Maths Curriculum Overview

HT 1	HT 2	HT 3	HT 4	HT 5	HT 6
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CORE scheme					
Unit 1 Analysing and Displaying Data 1a. Mode, median and range 1b. Displaying data 1c. Grouping data 1d. Averages and comparing data 1e. Line graphs and more bar charts 1f. Spreadsheets Unit 2 : Number Skills 2a. Mental maths 2b. Addition and subtraction 2c. Multiplication 2d. Division 2e. Finance: Time and money 2f. Negative numbers 2g. Factors, multiples and primes 2h. Square and triangle numbers	Unit 3: Equations, Functions and Formulae 3a. Functions 3b. Simplifying expressions 3c. Simplifying expressions 2 3d. Writing expressions 3e. STEM: Substituting into formulae 3f. Writing formulae Unit 4 Decimals and Measures 4a. Decimals and rounding 4b. Length, mass and capacity 4c. Scales and coordinates 4d. Working with decimals mentally 4e. Working with decimals 4f. Perimeter 4g. Area 4h. STEM: More units	Unit 5 Fractions 5a. Comparing fractions 5b. Simplifying fractions 5c. Working with fractions 5d. Fractions and decimals 5e. Understanding percentages 5f. Percentages of amounts Unit 6: Probability 6a. The language of probability 6b. Calculating probability 6c. More probability calculations 6d. Experimental probability 6e. FINANCE: Expected outcomes	Unit 7: Ratio and Proportion 7a. Direct proportion 7b. Writing ratios 7c. Using ratios 7d. Scales and measures 7e. Proportions and fractions 7f. Proportions and percentages	Unit 8 Lines and Angles 8a. Lines, angles and triangles 8b. Estimating, measuring and drawing angles 8c. Drawing triangles accurately 8d. STEM: Calculating angles 8e. Angles in a triangle 8f. Quadrilaterals Unit 9: Sequences and Graphs 9a. Sequences 9b. Pattern sequences 9c. Coordinates 9d. Extending sequences 9e. Straight-line graphs 9f. Position-to-term rules	Unit 10: Transformations 10a. Congruency and enlargements 10b. Symmetry 10c. Reflection 10d. Rotation 10e. Translations and combined transformations

Year 8 Maths Curriculum Overview

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
CORE scheme					
Unit 1a -d Number 1a. Calculations 1b. Calculating with negative integers 1c. Powers and roots 1d. Powers, roots and brackets	Unit 4a – b: Expressions and Equations 4a. Algebraic powers 4b. Expressions and brackets Unit 4c – f: Expressions and Equations 4c. Factorising expressions 4d. One-step equations	Unit 6 Decimals and Ratio 6a. Ordering decimals and rounding 6b. Place-value calculations 6c. Calculations with decimals 6d. Ratio and proportion with decimals 6e. STEM: Using ratios	Unit 8: Calculating with Fractions 8a. Adding and subtracting fractions 8b. Multiplying fractions 8c. Fractions, decimals and reciprocals 8d. Dividing fractions 8e. Calculating with mixed numbers	Unit 9: Straight Line Graphs 9a. Direct proportion on graphs 9b. Gradients 9c. Equations of straight lines 9d. STEM: Direct proportion problems Unit 10: Percentages, Decimals and Fractions 10a. Fractions and decimals	Unit 3: Statistics, Graphs and Charts 3a. Pie charts 3b. Using tables 3c. Stem and leaf diagrams 3d. Comparing data 3e. Scatter graphs 3f. FINANCE: Misleading graphs

Unit 1e: Number 1e. Multiples and factors Unit 2 : Area and Volume 2a. Area of a triangle 2b. Area of a parallelogram and trapezium 2c. Volume of cubes and cuboids 2d. 3D shapes 2e. Surface area of cubes and cuboids 2f. Problems and measures	4e. Two-step equations 4f. The balancing method Unit 5: Real Life Graphs 5a. Conversion graphs 5b. Distance-time graphs 5c. Line graphs 5d. Complex line graphs 5e. STEM: Graphs of functions 5f. More real-life graphs	Unit 7: Lines and Angles 7a. Quadrilaterals 7b. Alternate angles and proof 7c. Geometrical problems 7d. Exterior and interior angles 7e. Solving geometric problems	10b. Equivalent proportions 10c. Writing percentages 10d. Percentages of amounts 10e. FINANCE: Solving problems	
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Year 9 Maths Curriculum Overview

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Higher					
Unit 1: Number 1a. Calculations, checking and rounding 1b. Indices, roots, reciprocals and hierarchy of operations 1c. Factors, multiples, primes 1d. Standard form and surds	Unit 2: Algebra 2a. Algebra: the basics 2b. Setting up, rearranging and solving equation 2c. Sequences	Unit 3: Interpreting and Representing Data 3a. Averages and range 3b. Representing and interpreting data 3c. Scatter graphs Unit 4: Fractions, Ratio and Percentage 4a. Fractions 4b. Percentages 4c. Ratio and proportion	Unit 5: Angles and Trigonometry 5a. Polygons, angles and parallel lines 5b. Pythagoras' Theorem and trigonometry	Unit 6: Graph 6a. Graphs: the basics and real-life graphs 6b. Linear graphs and coordinate geometry 6c. Quadratic, cubic and other graphs Unit 7: Area and Volume 7a. Perimeter, area and circles 7b. 3D forms and volume, cylinders, cones and spheres 7c. Accuracy and bounds	Unit 8: Transformations and Constructions 8a. Transformations 8b. Constructions, loci and bearings
Foundation					
Unit 1: Number 1a. Integers and place value 1b. Decimals 1c. Indices, powers and roots 1d. Factors, multiples and primes	Unit 2: Algebra 2a. Algebra: the basics 2b. Expanding and factorising single brackets 2c. Expressions and substitution into formulae	Unit 3: Interpreting and Representing Data 3a. Averages and range 3b. Representing and interpreting data 3c. Scatter graphs Unit 4: Fractions and Percentage 4a. Fractions 4b. Fractions, decimals and percentages 4c. Percentages	Unit 5: Equations, inequalities and Sequences 5a. Equations 5b. Inequalities 5c. Sequences	Unit 6: Angles 6a. Properties of shapes, parallel lines and angle facts 6b. Interior and exterior angles of polygons Unit 7: Averages and Range 7a. Statistics and sampling 7b. The averages	Unit 8: Perimeter, Area and Volume 8a. Perimeter and area 8b. 3D forms and volume
Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning
Extra Curricular activities	Key resources / websites PinPoint Learning for Question Analysis https://www.pinpointlearning.co.uk/ Sparkx Maths for homework and independent study https://sparxmaths.com/				

- Students are frequently given the opportunity to be inquisitive through problem solving, being reflective and flexible in their approaches. Students are then empowered to show courage in applying that knowledge to other subjects and real-life situations.
- Students have opportunities to experience various enrichment activities which encourage them to be ambitious in their post 16 choices.

Year 10 Maths Curriculum Overview

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Higher					
Unit 9: Equations and Inequalities 9a. Solving quadratic and simultaneous equations 9b. Inequalities Unit 10: Probability 10a. Probability	Unit 11: Multiplicative Reasoning 11a. Multiplicative reasoning	Unit 12: Similarity and Congruence 12a. Similarity and congruence in 2D and 3D Unit 13: More Trigonometry 13a. Graphs of trigonometric functions 13b. Further trigonometry	Unit 14: Further Statistics 14a. Collecting data 14b. Cumulative frequency, box plots and histograms	Unit 15: Equations and Graphs 15a. Quadratics, expanding more than two brackets, sketching graphs, graphs of circles, cubes and quadratics Unit 16: Circle Theorems 16a. Circle theorems 16b. Circle geometry	Unit 17: More Algebra 17a. Changing the formulae subject (more complex), solving equations, algebraic fractions, rationalising surds, proof
Foundation					
Unit 9: Graphs 9a. Real-life graphs 9b. Straight-line graphs Unit 10: Transformations 10a. Transformations I: translations, rotations and reflections 10a. Transformations II: enlargements and combinations	Unit 11: Ratio and Proportion 11a. Ratio 11b. Proportion	Unit 12: Right Angle Triangles 12a. Right-angled triangles: Pythagoras and trigonometry Unit 13: Probability 13a. Probability I 13b. Probability II	Unit 14: Multiplicative Reasoning 14a. Multiplicative reasoning	Unit 15: Constructions, Loci and Bearings 15a. Plans and elevations 15b. Constructions, loci and bearings Unit 16: Quadratic equations and Graphs 16a. Quadratic equations: expanding and factorising 16b. Quadratic equations: graphs	Unit 17: Perimeter, Area and Volume 2 17a. Circles, cylinders, cones and spheres
Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning
Extracurricular activities			Key resources / websites PinPoint Learning for Question Analysis https://www.pinpointlearning.co.uk/ Sparkx Maths for homework and independent study https://sparxmaths.com/		

Year 11 Maths Curriculum Overview

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Higher					
Unit 18: Vectors and Geometric Proof 18a. Vectors and geometric proof	Unit 19: Proportions and Graphs 19a. Reciprocal and exponential graphs; Gradient and area under graphs 19b. Direct and inverse proportion	Focussed Revision time and Exam preparation	Focussed Revision time and Exam preparation	Exams	Exams
Foundation					
Unit 18: Fractions, Indices and Standard Form 18a. Fractions and reciprocals 18b. Indices and standard form Unit 19: Congruence, Similarity and Vectors 19a. Similarity and congruence in 2D 19b. Vectors	Unit 20: More Algebra 20a. Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations	Focussed Revision time and Exam preparation	Focussed Revision time and Exam preparation	Exams	Exams
Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning	Deeper Learning
Extra Curricular activities	Key resources / websites PinPoint Learning for Question Analysis https://www.pinpointlearning.co.uk/ Sparkx Maths for homework and independent study https://sparxmaths.com/				

Key Stage 5 Maths Curriculum Overview

Year 12 Maths Curriculum Overview

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Transition Transition activities will take place within the first six weeks of Year 12					
Pure Mathematics Year 1 Ch 1 – Algebraic Expressions Ch 2 – Quadratics Ch 3 – Equations and Inequalities Ch 4 – Graphs and Transformations Ch 5 – Straight Line Graph	Pure Mathematics Year 1 Ch 7 – Algebraic Methods Ch 6 – Circles	Pure Mathematics Year 1 Ch 9 – Trigonometric Ratios Ch 10 – Trigonometric Identities and Equation	Stats and Mechanics Year 1 Ch 1 – Data Collection Ch 2 – Measures of location and spread Ch 3 – Representations of Data Ch 4 – Correlation	Stats and Mechanics Year 1 Ch 5 – Probability Ch 6 – Statistical Distributions Ch 7 – Hypothesis Testing Revision: Pure and Statistics	Pure Mathematics Year 2 Ch 3 – Sequences and Series Ch 4 – Binomial Expansion
Stats and Mechanics Year 1 Ch 5 – Probability Ch 8 – Modeling in Mechanics Ch 9 – Constant Acceleration	Stats and Mechanics Year 1 Ch 4 – Correlation Ch 6 – Statistical distribution Ch 10.1- 10.4 – Forces and Motion	Stats and Mechanics Year 1 Ch 1 – Data Collection Ch 2 – Measures of location and spread Ch 10.5 – 10.6. – Forces and Motion continues	Stats and Mechanics Year 1 Ch 10 – Forces and Motion Ch 11 – Variable Acceleration	Revision: Pure and Mechanics	Pure Mathematics Year 2 Ch 1 – Algebraic Methods Ch 2 – Functions and Graphs
Key resources / websites Physics and Maths tutor Maths Genie Hegarty Maths Edexcel/Pearson Active Learn Save My Exams					

Year 13 Maths Curriculum Overview

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Pure Mathematics Year 2 Teacher: Mr. Whittaker Year 1 Revision Ch1 - Algebraic Methods Ch2 - Functions and Graphs	Pure Mathematics Year 2 Teacher: Mr. Whittaker Ch3 - Sequences and Series Ch4 - Binomial Expansion	Pure Mathematics Year 2 Teacher: Mr. Whittaker Ch 5 – Radians Ch 6 - Trigonometric Functions Ch 7 – Trigonometry and Modelling	Pure Mathematics Year 2 Teacher: Mr. Whittaker Ch8 - Parametric Equations Ch9 - Differentiation Ch10 - Numerical Methods	Pure Mathematics Year 2 Teacher: Mr. Whittaker Ch 11 - Integration Ch 12 - Vectors	Revision of Pure, Mechanics and Statistics
Stats and Mechanics Year 2 Teacher: Mr. Whittaker Ch 4 – Moments	Stats and Mechanics Year 2 Teacher: Mr. Whittaker Ch1 - Regression, Correlation/Hypothesis testing Ch 5 – Forces and Friction	Stats and Mechanics Year 2 Teacher: Mr. Whittaker Ch 6 – Projectiles Ch 2 – Conditional Probability	Stats and Mechanics Year 2 Teacher: Mr. Whittaker Ch7 - Application of Forces Ch 3 – The normal distribution	Stats and Mechanics Year 2 Teacher: Mr. Whittaker Ch 8 - Further Kinematics	Revision of Pure, Mechanics and Statistics
Key resources / websites Physics and Maths tutor Maths Genie Hegarty Maths Edexcel/Pearson Active Learn Save My Exams					