



Eastlea
COMMUNITY SCHOOL

Long Term Plan

Maths

KS3 (Year 7, Year 8, Year 9)

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Subject intent/vision:

In maths we provide a knowledge rich and an ambitious curriculum that allows our students to thrive academically.

We provide our students with reasoning, critical thinking and problem solving opportunities that help them to flourish personally in and beyond the classroom.

To enable all students to achieve, our subject curriculum is underpinned by the following principles:



Ambitious – all students will study a three year KS3 curriculum that interlinks with our KS4 maths curriculum. This will enable all students to sit the GCSE exam in maths at the end of year 11 - some students will do the further maths exams in year 10. Top set students will sit the Statistics exam in year 11.



Sequenced / Spiral – all of our lessons begin with a Do Now activity that recaps prior learning and supports retrieval so that students know and remember more. Some topics are retaught throughout the five years so that knowledge can be built and sequenced over time. All of the units have work that is interleaved allowing students to apply their procedural knowledge and recap key facts. We have a centralised homework system which is bespoke to individual learners. The purpose of our homework is for our students to recall and retrieve prior learning. We do this by ensuring our homework lags with the class learning.



Literacy – In all Maths lessons we explicitly teach tier 2/3 vocabulary with our students, and we carry out a choral practice. Teachers also define the word and illustrate examples, non-examples and characteristics to ensure our students understand and can relate to abstract ideas.



Cultural Capital – our students have the opportunity to learn about profit and loss, repayments, growth, turning points (stability), perimeter, area, volume, sequences and much more. Students have the opportunity to take part in maths challenges and apply their learning in real life situations.

Long term plan:

From September 2025: KS3 Maths Programme of Study (Year 7)

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place Value and Proportion: Place Value and Ordering Integers and Decimals: - Position numbers on a number line - Round to nearest 10, 100, 1000 and simple approximation - Order integers and use inequality symbols to compare numbers - Calculate the range and median from a set of integer values - Represent decimals and place values on a number line - Introduction to basic indices Fraction, Decimal and Percentage Equivalence: - Representing tenths and hundredths and fractions on a number line - Rounding to decimal places and significant figures - Convert fractions to decimals and percentages	Algebraic Thinking: Sequences: - Describe and predict sequences - Represent sequences graphically - Recognising linear and a non linear sequence - Explain term to term rule Understand & Use Algebraic Notation: - Using function machines to generate sequences including algebraic expressions Equality and Equivalence: - Use bar models to create equations - Solve one-step linear equations - Understand the meaning of like, unlike terms and equivalence - Simplify algebraic expressions by collecting like terms	Applications of Number: Solving Problems with Addition and Subtraction: - To add and subtract integers and decimals - Solve problems in standard form - Solve problems involving tables and timetables - Solve problems with bar charts and line charts Solving Problems with Multiplication and Division: - Understand and use factors and multiples - Multiply and divide integers and decimals by powers of 10 - BIDMAS - Solve problems using the area of rectangles, triangles and parallelograms Fractions & Percentages of Amounts: - Find fraction of amounts - Find percentage of amounts - Calculating fractions of amounts where fractions >1 - Calculating percentage of amounts where percentage $>100\%$	Directed Numbers: Operations & Equations with Directed Number: - Ordering numbers using number line and inequalities - Add, subtract, multiply and divide directed numbers - Solving 1 step equations - Solving 2 steps equations Addition & Subtraction of Fractions: - Convert between mixed numbers and fractions - Add and subtraction fraction with the same and different denominators - Add and subtract mixed numbers - Understand and use equivalent fractions - Add and subtract fractions using LCM to make common denominators - Use equivalence to add and subtract decimals and fractions - Add and subtract simple algebraic fractions	Angles and Lines: Constructing, Measuring & using Geometric Notation: - Draw and measure line segments - Understand angles as a measure of turn - Classify and measure angles - Drawing angles between 180 to 360 degrees - Identify parallel and perpendicular lines - Recognise types of triangles - Recognise different types of quadrilaterals and polygons - Construct triangles using SSS, SAS and ASA - Interpret pie charts Developing Geometric Reasoning: - Understand and use the sum of angles at a point - Understand and use of sum of angles on a straight line - Understand and use the equality of vertically opposite angles - Know and apply the sum of angles in a triangle and quadrilateral - Find and use the angle of any polygon - Angles in Parallel Lines	Reasoning with Number: Developing Number Sense: - Know and use mental strategies to add, subtract, multiply and divide integers and decimals - Use factors to simplify calculations - Using estimation to check mental calculations - Use number and algebraic facts to derive other facts - Interpret and create Venn diagram - Know and use probability vocabulary - Calculating probability of an event - Use probability scale Prime Numbers and Proofs: - Recognise and identify prime number, square numbers and triangular numbers - Find common numbers - Find HCF and LCM - Write numbers as product of prime factors
Assessment: 2 Post-tests (AO1, AO2 and AO3)	Assessment: 2 Post-tests	Assessment: 2 Post-tests	Assessment: 2 Post-tests	Assessment: 2 Post-tests	Assessment: 2 Post-tests End of Year Exam

From September 2025: KS3 Maths Programme of Study (Year 9 Foundation)

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Linear Graphs: - Compare gradients - Compare intercepts - Drawing Linear Graphs ($Y = mx + c$) - Write an equation in the form $y = mx + c$ - Calculate the equation of a line from a graph - Interpret gradients and intercepts of real life graphs - Draw and interpret quadratic graphs - Interpret graphs, including reciprocal and piecewise Algebra: - Solve one and two step equations and inequalities - Solve equations and inequalities with unknowns on both sides - Explore equations and inequalities in other mathematical contexts - Formulae and equations - Rearranging formulae	Transformations: - Identify the order of rotational symmetry of a shape - Compare and contrast rotational symmetry with line symmetry - Rotation - Translation - Reflection Enlargement & Similarity: - Recognise enlargement and similarity - Enlargement by a positive integer scale factor - Enlargement by a negative scale factor - Calculate missing sides and angles of similar shapes - Problem solving with similar triangles - Explore ratios in right angled triangles Pythagoras' Theorem - Pythagoras' Theorem - Calculating Hypotenuse - Pythagoras' Theorem - Calculating Shorter Sides	Angles. Construction and Loci: - Drawing Triangles using SSS. - Congruent Triangles - Perpendicular Bisector - Constructing 30, 45, 60 and 90 Degrees - Drawing Loci Number 1: - Factors, Multiples and Prime Numbers - LCM and HCF - Laws of Indices - Positive and Negative Powers - Roots and Fractional Powers - Bounds - Calculations with bounds - Error intervals Algebra 1: - Collecting Like Terms - Index Laws - Linear Sequence - Quadratic Sequence	- Standard Form and Indices - Surds - Expand and Simplify Surds Statistics: - Qualitative and Quantitative Data - Mode, Median, Range and Mean - Bar Charts - Two-Way Tables - Draw and interpret Pie Charts - Stem & Leaf Diagrams - Grouped Frequency Table - Box Plots - Histograms - Frequency Polygon - Scatter Graphs	Angles and Polygons: - Angles in Quadrilaterals - Angles in Parallel Lines - Angles in Polygons - Angles in Regular Polygons Algebra 2: - Solving Linear Equations with Brackets and Unknown on Both Sides - Representation of Inequality on a Number Line - Solving Linear Inequality - Forming and Solving Equations - Changing the Subject of Equations Linear Sequences and Linear Graphs: - Describing Patterns - Linear Sequences - Function Machines and Coordinates - Drawing Linear Graphs ($Y = mx + c$) - To find gradient and y-intercept from linear equations) - Real life conversion graphs	Fractions and Percentages: - Mixed Numbers - Fractions of Amounts - Convert Fractions to Percentages - Percentage of Amounts - Percentage Change - Simple Interest - Compound Interest Averages and Range: - Finding Mode, Mean, Mode and Range from a Frequency Table and Stem & Leaf Diagram - Finding Mode, Median and Mean from a Grouped Frequency Table - Reverse mean - Grouped frequency table - Cumulative frequency table - Box plots
Assessment: 2 Formative Assessments	Assessment: 1 Formative Assessment 1 Summative Assessment	Assessment: 2 Formative Assessments	Assessment: 1 Formative Assessment 1 Summative Assessment	Assessment: 2 Formative Assessments	Assessment: 1 Formative Assessment 1 Summative Assessment

From September 2025: KS3 Maths Programme of Study (Year 9 Higher)

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Linear Graphs: • Compare gradients • Compare intercepts • Drawing Linear Graphs ($Y = mx + c$) • Calculate the equation of a line from a graph • Interpret gradients and intercepts of real life graphs • Model real life graphs involving inverse proportion • Explore perpendicular lines • Draw and interpret quadratic graphs • Interpret graphs, including reciprocal and piecewise • Investigate graphs of simultaneous equations (H) Algebra: • Solve one and two step equations and inequalities • Solve equations and inequalities with unknowns on both sides • Explore equations and inequalities in other mathematical contexts	• Formulae and equations • Rearranging formulae Transformations: • Identify the order of rotational symmetry of a shape • Compare and contrast rotational symmetry with line symmetry • Rotation • Translation • Reflection Enlargement & Similarity: • Recognise enlargement and similarity • Enlargement by a positive integer scale factor • Enlargement by a negative scale factor • Calculate missing sides and angles of similar shapes • Problem solving with similar triangles • Explore ratios in right angled triangles	Pythagoras' Theorem • Pythagoras' Theorem - Calculating Hypotenuse • Pythagoras' Theorem - Calculating Shorter Sides Angles, Construction and Loci: • Drawing Triangles using SSS. • Congruent Triangles • Perpendicular Bisector • Constructing 30, 45, 60 and 90 Degrees • Drawing Loci Number 1: • Factors, Multiples and Prime Numbers • LCM and HCF • Laws of Indices • Algebraic index laws • Positive and Negative Powers • Roots and Fractional Powers • Bounds • Calculations with bounds • Error intervals	Algebra 1: • Collecting Like Terms • Index Laws • Linear Sequence • Quadratic Sequence • Geometric Sequence Standard Form and Indices • Surds • Expand and Simplify Surds Statistics: • Qualitative and Quantitative Data • Mode, Median, Range and Mean • Bar Charts • Two-Way Tables • Draw and interpret Pie Charts	• Stem & Leaf Diagrams • Grouped Frequency Table • Box Plots • Histograms • Frequency Polygon • Scatter Graphs Angles and Polygons: • Angles in Quadrilaterals • Angles in Parallel Lines • Angles in Polygons • Angles in Regular Polygons Algebra 2: • Expanding Single Brackets • Expanding and Simplifying Double Brackets • Expanding and Simplifying Triple Brackets • Factorise Algebraic Expressions • Factorise Quadratics Expressions	Perimeter, Area, Surface Area and Volume: • Conversion between Metric Units • Area of Rectangles and Triangles • Area of Trapezium • Area of Parallelograms • Perimeter of Polygons • Area and Perimeter of Circles • Area and Perimeter of Sectors • Plans and Elevations • Surface Area of Cubes and Cuboids • Volume of Cubes and Cuboids Compound Measures: • Calculating Speed • Reading D-T Graphs • Acceleration • Density • Pressure • Area under speed-time graph • Rate of change
Assessment: 2 Formative Assessments	Assessment: 1 Formative Assessment 1 Summative Assessment	Assessment: 2 Formative Assessments	Assessment: 1 Formative Assessment 1 Summative Assessment	Assessment: 2 Formative Assessments	Assessment: 1 Formative Assessment 1 Summative Assessment

Learning Resources

<https://www.mathsgenie.co.uk> - A bank of exam questions by topic with worked solutions.
Videos and Worksheets – Corbettmaths- A bank of exam questions by topic with worked solutions.

Sparx Maths - This is the online platform used for KS3 homework setting. The learning is available to students 24/7 and each student receives a personalised login.