

The Curriculum Overview is the long-term planning of **priority essential knowledge** of the curriculum alongside interleaved prior essential knowledge. It details the content that will be taught and the order it will be taught and assessed. It also indicates where this is aligned across the trust. Sitting behind this overview of long-term planning are the schemes of work.

Curriculum Intent statement: Maths is taught to all students up to GCSE level. The curriculum ensures that students become independent learners and enjoy success in applying their learning to real life contexts. We are committed to combining traditional and successful classroom based approaches to learning with an increasing emphasis on investigations, problem solving and ICT based maths. This enables students to see maths in everyday life, as well as giving them a useful experience in using and applying maths. GCSE revision sessions are organised each year. The national curriculum for mathematics aims to ensure that all students:

- Become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that students develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems.

Curriculum Overview for Year 7

Year 7 Assessment Point 1: JAN 26 - The current attainment descriptor will be reported home at this assessment point.

Year 7 Assessment Point 2: JUN 26 - The current attainment descriptor will be reported home at this assessment point.

The table below details the curriculum content students will be covering each half term in this subject area. Assessments will aim to assess the knowledge and skills a student has covered up to that point in their education, this also includes the curriculum covered in the previous year/s.

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Understand place value-whole numbers Order whole numbers on number lines Key Knowledge: Working with Integers (BODMAS) Skills: • Becoming fluid with the four basic operations (+, -, ×, ÷) and using consistent methods. • Understand the order in which a sum should be attempted and be able to use brackets and indices within calculations.	Prior Learning: Understand place value-whole numbers Order whole numbers on number lines Key Knowledge: Basic Algebra and Coordinates Ratio and Proportion Skills: • Be able to collect like terms and understand how terms are written in algebra. • Be able to expand brackets and substitute into expressions. • Confidently plot coordinates to calculate the midpoint of line segments. • Simplify ratios and find equivalent ratios. • Divide amounts into ratios. • Be able to solve proportional problems with ratios.	Prior Learning: Fluent with all four operations with integers Key Knowledge: Rounding and Multiplying by Powers of 10 Fractions, Decimals and Percentages Skills: • To be able to round to whole numbers, nearest 10, 100, 1000, 1 decimal place and significant figures. • Be confident with dealing with multiplication and division with powers of 10. • Find fractions and percentages of amounts. • Convert between fractions, decimals and percentages and illustrate these on diagrams.	Prior Learning: Be able to collect like terms and understand how terms are written in algebra. Be able to expand brackets Key Knowledge: Equations and Formulae Skills: • Understand language used in algebra questions. • Be able to solve simple equations and rearrange simple formulae. • Be able to solve and understand inequalities.	Prior Learning: Know the types of angles Estimate size of angles Key Knowledge: 2D Shapes and Angle Rules Area and Volume Skills: • Understand and be able to apply all properties of 2D shapes. • Know and be able to apply angle rules to find missing angles. • Understand how to calculate area and perimeter of 2D shapes. • Be able to find the volume of prisms	Prior Learning: Fluent with all four operations with integers Inverse operations Understanding of basic number properties Key Knowledge: Statistics Skills: • Find all averages from lists of data and tables. • Construct and interpret statistical diagrams. • Understand methods for collecting accurate data.

	Future Links: Manipulation of the four operations including brackets and indices. Be able to convert between and perform the four operations with fractions, decimals and percentages.	Future Links: Be able to write and manipulate basic expressions. Understand and use the language to describe sequences.	Future Links: Be able to convert between and perform the four operations with fractions, decimals and percentages.	Future Links: Be able to write and manipulate basic expressions. Understand and use the language to describe sequences.	Future Links: Know and use the properties of 2D and 3D shapes. Know and be able to reason with rules of angles. Be able to draw and interpret plans and elevations of 3D shapes. Be able to calculate the area of 2D shapes and the volume of 3D shapes.	Future Links: Draw and interpret statistical diagrams. Calculate basic averages
Assessment: The key assessment objectives that will be used.	A tiered unit assessment (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students.	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 2: Indices and BODMAS. Unit 3: Identifying 2D shapes.	Skills gained in Unit 4 are also tested in the tiered Unit 5 assessment (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Place value, rounding, and calculations with decimals.	A tiered unit assessment (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Negative integers and BODMAS. Use of formulas for areas of triangle and perimeter are introduced to support later learning and revisit KS2.	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 7: Substituting into formulae and rearranging of expressions. Unit 8: Multiplying and dividing by powers of 10, converting metric units.	A tiered unit assessment (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Decimal integers, rounding, and reading inequalities.

Curriculum Overview for Year 8

Year 8 Assessment Point 1: JAN 26 - The current attainment descriptor will be reported home at this assessment point.

Year 8 Assessment Point 2: JUN 26 - The current attainment descriptor will be reported home at this assessment point.

The table below details the curriculum content students will be covering each half term in this subject area. Assessments will aim to assess the knowledge and skills a student has covered up to that point in their education, this also includes the curriculum covered in the previous year/s.

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Becoming fluid with the four basic operations (+, -, ÷, x) and using consistent methods. Understand the order in which a sum should be attempted Key Knowledge: Working with Integers (BODMAS) Fractions, Decimals and Percentages. Skills: • Manipulation of the four operations including brackets and indices. • Be able to convert between and perform the four operations with fractions, decimals and percentages. Future Links: Be able to manipulate all operations and calculations with integers and decimals including the order of operations.	Prior Learning: Learn about sets, set notation and systematic listing strategies Key Knowledge: Probability Reciprocal reading Basic Algebra Sequences Skills: • Be able to represent probability on scales and with fractions, decimals and percentages. • Calculate the probability of an outcome occurring. • Be able to write and manipulate basic expressions. • Understand and use the language to describe sequences. Future Links: Calculate the probability of events and answer functional questions relating to probability. Be able to draw tree diagrams and find the probability of independent and dependent events.	Prior Learning: Reading and plotting points in the first quadrant Using a ruler to draw straight lines Read a set of coordinate axes Key Knowledge: Graphs Reciprocal reading Transformations Skills: • Be able to draw and interpret graphs. • Describe and accurately carry out rotations, reflections, translations and enlargements. Future Links: 3D finding midpoints and endpoints.	Prior Learning: Know what squaring is Know what cubing is Know the inverse operations for squaring and cubing and be able to find the roots of square and cube numbers Key Knowledge: Equations and Formulae Skills: • Be able to solve equations. • Substitute and manipulate formulae including brackets and indices. Future Links: Be able to write and manipulate linear expressions including the expanding of brackets and factorising.	Prior Learning: Know the basic properties of angles, (straight line and angles around at point) Calculate area and perimeter of rectangles and squares Know the parts of a circle Key Knowledge: Shapes, lines and Angle rules Area and Volume Skills: • Know and use the properties of 2D and 3D shapes. • Know and be able to reason with rules of angles. • Be able to draw and interpret plans and elevations of 3D shapes. • Be able to calculate the area of 2D shapes and the volume of 3D shapes. Future Links: Understand properties of 3D shapes and be able to draw nets of these	Prior Learning: Simplify ratios and find equivalent ratios. Divide amounts into ratios. Be able to solve proportional problems with ratios. Key Knowledge: Ratio and Proportion Reciprocal reading Statistics Skills: • Be able to simplify and divide amounts into given ratios. • Solve real-life proportion problems. • Draw and interpret statistical diagrams. • Calculate basic averages. Future Links: Be able to simplify and divide given amounts into ratios. Be able to solve functional ratio and proportion problems.

Assessment: The key assessment objectives that will be used.	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 1: Rearranging calculations, multiplying by powers of 10, and collecting algebraic like terms. Unit 2: Multiplying and dividing by powers of 10, and converting metric units.	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 3: Addition and multiplication of fractions, recognising 2D shapes, interpreting statistical diagrams and understanding statistical language. Unit 4: Indices laws, area of 2D shapes and BODMAS. Unit 5: Multiply and divide by powers of 10, negative and decimal integers, and substitution into a formula.	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 6: Properties of 2D shapes, and rearranging formulae. Unit 7: Properties of 2D shapes and using coordinates.	A tiered unit assessment (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 8: Inequalities and triangle properties .	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 9: Forming and solving equations. Unit 10: Accurately measuring line segments, and converting metric units.	Tiered unit assessments (appropriate tier selected by teacher on a topic by topic basis) which will be peer marked, teacher assessed and then reflected and improved upon by students. Unit 11: Converting metric units and creating fractions. Unit 12: Forming and solving equations and rounding.
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Curriculum Overview for Year 9

Year 9 Assessment Point 1: NOV 25 - The current attainment descriptor will be reported home at this assessment point.

Year 9 Assessment Point 2: MAR 26 - The current attainment descriptor will be reported home at this assessment point.

The following applies to all tiers in this year group.

Essential knowledge from prior learning that needs revisiting	The first 5 lessons of the year will focus on using negative numbers in various contexts. Sparx maths will be used for homework and computer-based lessons to support retention of topics. All maths lessons throughout the year will start with fluency starters covering topics taught from the KS2 and KS3 curriculum.
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The table below details the curriculum content students will be covering each half term in this subject area. Assessments will aim to assess the knowledge and skills a student has covered up to that point in their education, this also includes the curriculum covered in the previous year/s.

LAL tier – Year 9

All units in this tier allow for continuing to develop key numeracy skills and teachers are expected to teach and/or support these in all lessons until they are secure. The students accessing this tier need a smaller amount of units and concentrate on a smaller amount of content to enable them more time to move towards mastering the 'foundations' of maths. This allows us to remove the idea of any 'assumed knowledge' and regularly revisit the number skills that are involved in every unit to aid long term uptake and retention. Some units also explicitly repeat additional objectives from other units, with assessments also purposely containing repeats of question types, to prepare students for recalling higher level prior learning also.

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Be able to read, write, count and order numbers including negative numbers. Key Knowledge: Integers Skills: - Be able to read, write, count and order numbers including negative numbers. - Identify and use place value and number bonds. - Use mental and written methods for all four operations. Future Links: Use mental and written methods for all four operations.	Prior Learning: Be able to find and use coordinates in the 1st quadrant. Key Knowledge: Coordinates Skills: - Be able to find and use coordinates in 4 quadrants. - Find midpoints of lines. Future Links: Find midpoints of lines.	Prior Learning: Use and complete diagrams of fractions. Key Knowledge: FDP Conversions Skills: - Use and complete diagrams of fractions. - Find equivalents and simplest form. - Convert between fractions, decimals and percentages. Future Links: Convert between fractions, decimals and percentages.	Prior Learning: Be able to write and manipulate linear expressions, including collecting like terms Key Knowledge: Algebra Skills: - Be able to write and manipulate linear expressions, including collecting like terms, and using positive integer powers. - Substitute positive integers into expressions. Future Links: Substitute positive integers into expressions	Prior Learning: Name 3D shapes Key Knowledge: 3D shapes Skills: - Name 3D shapes and draw some on isometric paper or as nets. - Identify properties of 3D shapes. - Count cubes to calculate volume. Future Links: Count cubes to calculate volume.	Prior Learning: Identify and use inverse operations. Key Knowledge: Algebra revision and linear equations Skills: - Identify and use inverse operations. - Set up and solve one step equations involving any of the 4 operations. Future Links: Set up and solve one step equations involving any of the 4 operations.	Prior Learning: Design and complete frequency tables Key Knowledge: Collecting data Skills: - Design and complete frequency tables. - Read frequency, grouped frequency and two way tables. - Select key information to ask for to investigate something. Future Links: Select key information to ask for to investigate something.

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Foundation tier – Year 9

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
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Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Understanding of basic arithmetic operations Familiarity with place value and number lines Knowledge of factors, multiples, and divisibility Key Knowledge: Integers & decimals Skills: Be able to manipulate all operations and calculations with integers and decimals including the order of operations. Future Links: Simplifying algebraic expressions Solving equations involving decimals and integers Applying calculations in real-world contexts	Prior Learning: Understanding of number lines and positive/negative numbers Knowledge of the Cartesian coordinate system in one quadrant Plotting and interpreting points in two dimensions Key Knowledge: Coordinates Skills: Be able to find and use coordinates in 4 quadrants and 3D finding midpoints and endpoints. Future Links: Working with vectors in two and three dimensions Applications in geometry, including finding distances and gradients	Prior Learning: Understanding of fractions, decimals, and percentages as representations of parts of a whole Basic arithmetic operations with fractions and decimals Key Knowledge: Fractions, decimals & percentages Skills: - Convert confidently between fractions, decimals and percentages including in functional problems. - Find fractions and percentages of amounts including increasing and decreasing by them. Future Links: Applying percentages in ratio and proportion problems Using fractions, decimals, and percentages in algebraic contexts Probability calculations involving fractions, decimals, and percentages Real-world applications	Prior Learning: Understanding of basic algebraic terms (variables, coefficients, constants) Knowledge of arithmetic operations and their properties Simplifying expressions by collecting like terms Basic multiplication and division Key Knowledge: Algebra Skills: Be able to write and manipulate linear expressions including the expanding of brackets and factorising. Future Links: Solving linear equations and inequalities Working with quadratic expressions (expanding and factorising) Simplifying and manipulating algebraic fractions	Prior Learning: Recognizing and naming 2D and 3D shapes Understanding basic properties of 2D shapes (e.g., edges, vertices, angles) Key Knowledge: 2D & 3D shapes Skills: Understand properties of 3D shapes and be able to draw nets of these Future Links: Calculating surface area and volume of 3D shapes Solving real-world problems involving nets and 3D objects	Prior Learning: Understanding basic algebraic terms and operations Solving simple one-step and two-step equations Expanding brackets and simplifying expressions Rearranging basic equations Key Knowledge: Linear equations & formulae Skills: - Be able to solve equations including those with unknowns on both sides and brackets. - Substitute into and manipulate formulae. Future Links: Solving simultaneous equations Solving inequalities Applications in problem-solving	Prior Learning: Understanding of basic arithmetic operations and their properties Knowledge of integers and their position on the number line Familiarity with basic number line representations Key Knowledge: Inequalities Skills: Understand the inequalities symbols and be able to use them to find integers, solve and represent on a number line. Future Links: Solving and graphing linear inequalities Working with compound inequalities	Prior Learning: Basic understanding of data collection and representation Familiarity with the concept of averages (mean, median, mode) Key Knowledge: Data Skills: - Know and comment on sampling techniques, two-way tables, bias and critique questionnaires. - Be able to draw and interpret statistical diagrams. Future Links: Surveys and analysing sample data Understanding probability
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Foundation tier – Year 9

	Unit 9	Unit 10	Unit 11	Unit 12	Unit 13	Unit 14	Unit 15	Unit 16
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Identification of Sides, Angles, and Symmetry in Shapes Basic Angle Types (Acute, Right, Obtuse) Understanding of Polygons and Their Properties Key Knowledge: Shape & angle Skills: - Know properties of common shapes and use these to solve problems. - Understand the basic rules of angles including those in parallel lines and in polygons. Future Links: Applying Properties of Shapes to Solve Complex Geometrical Problems Calculating Interior and Exterior Angles of Polygons	Prior Learning: Basic Operations with Fractions (Addition, Subtraction, Multiplication, Division) Understanding Mixed Numbers and Improper Fractions Converting Between Mixed Numbers and Improper Fractions Simplifying Fractions Key Knowledge: Fractions Skills: Confidently use the four operations with fractions and mixed numbers. Future Links: Applying Operations with Fractions in Word Problems Using Fractions in Proportions and Ratios Fractional Representations in Real-Life Contexts (e.g., Measurements, Recipes)	Prior Learning: Arithmetic skills Basic Operations with Ratios (Division, Multiplication) Key Knowledge: Ratio Skills: - Be able to simplify and divide given amounts into ratios. - Be able to solve functional ratio and proportion problems. Future Links: Solving Complex Ratio and Proportion Problems Using Ratios in Real-Life Applications (e.g., Recipes, Models, Maps) Working with Direct and Inverse Proportions	Prior Learning: Understanding the Properties of Regular Polygons Basic Concepts of Perimeter and Area Key Knowledge: Perimeter & area Skills: Be able to find the perimeter and area of regular polygons and know the formulas to use. Future Links: Finding Perimeter and Area of Irregular Polygons Applying Area and Perimeter Formulas in Real-World Problems Exploring Surface Area and Volume of 3D Shapes	Prior Learning: Basic Understanding of Circles (Radius, Diameter) Knowledge of Pi (π) Area and Perimeter Formulas for Simple Shapes Key Knowledge: Circles Skills: Be able to calculate the area and circumference of a circle. Future Links: Using the Area and Circumference Formulas in Real-World Applications Solving Problems Involving Sector Area and Arc Length	Prior Learning: Understanding Averages (Mean, Median, Mode) Calculating Range from Data Reading and Interpreting Data from Lists, Tables, and Diagrams Key Knowledge: Averages & range Skills: - Be able to calculate averages and range from lists, tables and diagrams. - Be able to compare data sets. Future Links: Comparing Multiple Data Sets Using Averages and Range Representations of Data Using Data to Solve Real-World Problems	Prior Learning: Understanding Right-Angled Triangles Knowledge of Square Numbers and Square Roots Basic Geometry Concepts (Sides, Angles) Key Knowledge: Pythagoras' Theorem Skills: Know and apply Pythagoras' theorem to find missing sides in right-angled triangles. Future Links: Solving Complex Problems Involving Multiple Right-Angled Triangles Using Pythagoras' Theorem in Real-World Applications Distance and Measurement Problems	Prior Learning: Knowledge of basic geometry Understanding of ratios and fractions Familiarity with the Pythagorean theorem Confidence in rearranging equations Basic algebra skills Using a scientific calculator Understanding angles and their measurement Key Knowledge: Trigonometry Skills: Understanding Trigonometric Ratios Using Trigonometric Ratios to Solve Problems Using the Inverse Trigonometric Functions Angles of Elevation and Depression Future Links: Solving trigonometric equations Real-life applications

Assessment: The key assessment objectives that will be used.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.
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Higher tier – Year 9

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
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Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Place Value Number Types Rounding Key Knowledge: Integers & decimals Skills: Be able to manipulate all operations and calculations with integers and decimals including the order of operations. Future Links: Multiplying and Dividing Decimals Long Division Exponentiation and Powers Word Problems Involving Decimals and Integers	Prior Learning: Understanding of Coordinate Planes Plotting Points in 2D Basic Number Line Concepts Key Knowledge: Coordinates Skills: Be able to find and use coordinates in 4 quadrants and 3D finding midpoints and endpoints. Future Links: Transformations Vectors	Prior Learning: Understanding of Fractions, Decimals, and Percentages Basic Operations with Fractions Place Value in Decimals Key Knowledge: Fractions, decimals & percentages Skills: - Convert confidently between fractions, decimals and percentages including in functional problems. - Find fractions and percentages of amounts including increasing and decreasing. - Convert recurring decimals to fractions. - Solve problems with reverse percentage and compound interest. Future Links: Applications of Percentages in Real-life Problems Solving Percentage Word Problems Involving Discounts, Tax, and Interest Using Ratios in Fractional and Percentage Calculations	Prior Learning: Understanding of Variables and Algebraic Expressions Basic Operations with Algebraic Expressions Simplifying Expressions Key Knowledge: Algebra Skills: - Be able to write and manipulate linear expressions including the expanding of brackets and factorizing. - Factorise quadratics including those with an x^2 coefficient greater than 1. Future Links: Factorizing Quadratics with Coefficients of x^2 Completing the Square Solving Quadratic Equations Applying Factorization in Solving Equations Graphing Quadratic Functions	Prior Learning: Basic 2D Shapes and Their Properties Understanding of 3D Shapes (e.g., cubes, spheres, pyramids) Recognizing Faces, Edges, and Vertices of 3D Shapes Understanding of Symmetry Key Knowledge: 2D & 3D shapes Skills: - Understand properties of 3D shapes and be able to draw nets of these. - Use and draw plans and elevations of 3D shapes. Future Links: Calculating Surface Area and Volume of 3D Shapes Advanced Geometrical Constructions Understanding Cross-sections of 3D Shapes	Prior Learning: Basic Solving of Simple Equations Understanding of Operations with Variables Simplifying Expressions Using the Distributive Property (Expanding Brackets) Basic Understanding of Inequalities Key Knowledge: Formulae & equations Skills: - Be able to solve equations including those with unknowns on both sides and brackets. - Understand the inequalities symbols and be able to use them to find integers, solve and represent on a number line. - Rearrange linear and quadratic equations. Future Links: Rearranging Complex Linear Equations Rearranging Quadratic Equations Solving Systems of Equations Applications of Equations and Inequalities in Real-life Problems	Prior Learning: Understanding of Data Types (Grouped, Discrete, Continuous) Basic Data Collection Methods Organizing Data in Tables Reading and Interpreting Simple Graphs Key Knowledge: Data Skills: - Design and use data-collection sheets for grouped, discrete and continuous data. - Collect data using various methods. - Sort, classify and tabulate data and discrete or continuous quantitative data. Future Links: Analysing Data Using Measures of Central Tendency (Mean, Median, Mode) Representing Data with Histograms and Box Plots
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Higher tier – Year 9

	Unit 8	Unit 9	Unit 10	Unit 11	Unit 12	Unit 13	Unit 14
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Basic Properties of Common Shapes (Triangles, Squares, Circles, etc.) Understanding of Angles (Acute, Right, Obtuse) Identifying Symmetry in Shapes Key Knowledge: Shape & angle Skills: - Know properties of common shapes and use these to solve problems. - Understand the basic rules of angles including those in parallel lines and interior and exterior angles. Future Links: Calculating Interior and Exterior Angles of Polygons Using Angles in Geometrical Proofs Solving Complex Geometrical Problems Involving Shapes and Angles Exploring Circle Theorems and Their Applications	Prior Learning: Basic Operations with Fractions (Addition, Subtraction, Multiplication, Division) Understanding Mixed Fractions and Improper Fractions Converting Between Mixed Fractions and Improper Fractions Simplifying Fractions Key Knowledge: Fractions Skills: - Confidently use the four operations with fractions and mixed fractions. - Solve functional exam style problems with fractions. Future Links: Advanced Operations with Fractions (Complex Problems Involving Multiple Operations) Solving Word Problems with Fractions Fractional Representations in Real-Life Contexts (e.g., Recipes, Measurements) Applying Fractions in Ratio and Proportions Working with Fractions in Algebraic Expressions and Equations	Prior Learning: Understanding of Ratios and Proportions Simplifying Ratios Basic Operations with Ratios (Division, Multiplication) Understanding of Area and Volume in 2D and 3D Shapes Key Knowledge: Ratio Skills: - Be able to simplify and divide given amounts into ratios. - Be able to solve functional ratio and proportion problems. - Use volume and area scale factors to calculate missing values. Future Links: Applying Ratios in Real-Life Situations (e.g., Recipes, Maps, Models) Using Scale Factors to Solve Problems in Geometry Calculating Missing Values in Area and Volume Using Scale Factors Understanding and Using Proportional Relationships in Similar Figures	Prior Learning: Basic Properties of Regular Polygons (e.g., sides, angles) Understanding Perimeter and Area Area and Perimeter Formulas for Rectangles and Squares Key Knowledge: Perimeter & area Skills: Be able to find the perimeter and area of regular polygons and know the formulas to use. Future Links: Finding Perimeter and Area of Irregular Polygons Using Trigonometry to Calculate Areas and Perimeters of Regular Polygons Applying Area and Perimeter Formulas in Real-World Problems Exploring Surface Area and Volume of 3D Polyhedra Understanding and Using the Pythagorean Theorem in Polygons	Prior Learning: Understanding of Averages (Mean, Median, Mode) Calculating Range from Data Reading and Interpreting Tables and Diagrams Basic Data Organization (Lists, Tables) Key Knowledge: Averages & range Skills: - Be able to calculate averages and range from lists, tables and diagrams. - Be able to compare data sets. Future Links: Visualizing Data with Graphs (Bar Graphs, Histograms, Box Plots) Using Averages in Real-World Contexts (e.g., Statistics, Economics) Comparing Data Sets in Statistical Analysis Interpreting and Analyzing Multiple Data Sets Simultaneously	Prior Learning: Basic Geometry and Side Lengths of Triangles Familiarity with Square Numbers and Square Roots Basic Knowledge of Sine, Cosine, and Tangent (Introductory) Key Knowledge: Pythagoras & trigonometry Skills: - Know and apply Pythagoras' theorem to find missing sides in right-angled triangles. - Know and apply the rules of trigonometry to find missing sides and angles in right angled triangles. Future Links: Using Pythagoras' Theorem in 3D Geometry Applying Trigonometry to Non-Right-Angled Triangles (e.g., Sine Rule, Cosine Rule) Solving Complex Problems Involving Multiple Right-Angled Triangles Using Trigonometric Functions in Real-World Applications (e.g., Navigation, Engineering)	Prior Learning: Basic Graphing Skills (Plotting Points, X and Y Axes) Understanding of Linear Equations and Graphs Knowledge of Slope and Intercept in Linear Graphs Basic Understanding of Curves and Functions Key Knowledge: Graphs Skills: Be able to draw and use graphs of equations, including linear, quadratic, cubic, reciprocal and exponential graphs. Future Links: Analyzing the Properties of Graphs (e.g., Asymptotes, Intercepts) Solving Equations Using Graphs Using Graphs to Model Real-World Situations (e.g., Growth, Decay)

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Curriculum Overview for Year 10

Year 10 Assessment Point 1: NOV 25 - The current grade with target grade will be reported home at this assessment point.

Year 10 Assessment Point 2: MAR 26 - The current grade with target grade will be reported home at this assessment point.

Year 10 Assessment Point 3: JUN 26 - The current grade with target grade will be reported home at this assessment point.

The following applies to all tiers in this year group.

Essential knowledge from prior learning that needs revisiting	The first 5 lessons of the year will focus on using negative numbers in various contexts. Sparx maths will be used for homework and computer-based lessons to support retention of topics. All maths lessons throughout the year will start with fluency starters covering topics taught from the KS2 and KS3 curriculum.
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The table below details the curriculum content students will be covering each half term in this subject area. Assessments will aim to assess the knowledge and skills a student has covered up to that point in their education, this also includes the curriculum covered in the previous year/s.

LAL tier – Year 10

	Unit 14	Unit 15	Unit 16	Unit 17	Unit 18
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Basic number skills and operations Place value understanding Key Knowledge: Integers revision and types of number Skills: - Be able to round numbers to different degrees of accuracy. - Calculate with negative numbers. - Calculate multiples, factors, square and cube numbers, and square and cube roots. Future Links: Algebra: Simplifying expressions, solving equations	Prior Learning: Basic arithmetic operations (addition, subtraction, multiplication, division) Understanding of ratios and proportions Key Knowledge: Ratio and proportion revision Skills: Use unitary method to solve proportion problems. Future Links: Best buy problems Recipe Problems Calculating scale factors	Prior Learning: Number Sense: Basic operations, number patterns, place value. Key Knowledge: Patterns and sequences Skills: - Describe and continue a sequence (shape, number and pattern). - Use a rule to generate a sequence. Future Links: Drawing linear graphs Algebraic expressions	Prior Learning: Basic geometric shapes (triangles, quadrilaterals, circles) Coordinate geometry (plotting points) Key Knowledge: Symmetry and transformations Skills: - Recognise and work with lines of symmetry and rotational symmetry. - Be able to carry out simple examples of rotation, reflection, enlargement and translation. Future Links: Properties of shapes (angles, sides, diagonals)	Prior Learning: Basic geometric shapes: Rectangles, squares, triangles, circles, cubes, and cuboids. Key Knowledge: Area and volume revision Skills: Calculate the area of a parallelogram and the volume of cubes and cuboids. Future Links: Area and volume of triangles and prisms

Assessment: The key assessment objectives that will be used. ALL units revisit and reassess number skills.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.
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LAL tier – Year 10

	Unit 19	Unit 20	Unit 21	Unit 22
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Basic number sense (fractions, decimals, percentages) Key Knowledge: Probability Skills: - Recognise and use simple probability scales. - Calculate single event probabilities as fractions, and use the idea of probabilities adding to 1. Future Links: Calculate expected outcomes	Prior Learning: Understanding of shapes and their properties Key Knowledge: Symmetry, similarity and congruence Skills: - Use symmetry to complete diagrams. - Know properties of quadrilaterals. - Identify congruent shapes and consider the effect meant by similarity. Future Links: Transformations	Prior Learning: Basic arithmetic operations (addition, subtraction, multiplication, division) Understanding of variables and placeholders Key Knowledge: Substitution and formulae Skills: - Substitute into algebraic and worded formulae. - Manipulate single step formulae. Future Links: Solving linear equations Graphing linear equations	Prior Learning: Basic number sense and operations Understanding of units of measurement (length, weight, time) Key Knowledge: Real life Maths Skills: Using a calendar and working with time, money, scale and maps. Future Links: Problem-solving with money Congruent shapes
Assessment: The key assessment objectives that will be used. ALL units revisit and reassess number skills.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.

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Higher tier – Year 10

	Unit 15	Unit 16	Unit 17	Unit 18	Unit 19	Unit 20	Unit 21	Unit 22
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Understanding points, lines, angles, shapes, and their properties. Proficiency in using a ruler and compass, accurate measurements Key Knowledge: Construction & loci Skills: Be able to accurately construct bisectors, triangles and loci with mathematical instruments. Future Links: Developing logical reasoning skills to justify constructions and prove geometric theorems	Prior Learning: Understanding of factors, multiples and primes. Arithmetic skills Key Knowledge: Types of number Skills: Be confident in calculating highest common factor, lowest common multiple and prime factor decomposition. Future Links: Algebraic factorisation Simplifying algebraic Fractions	Prior Learning: highest common factor, lowest common multiple and prime factor decomposition Key Knowledge: Algebraic fractions Skills: - Add, subtract, multiply and divide algebraic fractions. - Simplify algebraic fractions. Future Links: Solving Equations Function Notation Quadratic Equations	Prior Learning: Fractions, Decimals and Percentages Ratio Key Knowledge: Proportion Skills: Be able to solve problems with direct and inverse proportionality. Future Links: Similar Shapes Scale Drawings and Maps Data Analysis Best Value Problems	Prior Learning: Solving simple linear equations and inequalities. Tables of values Key Knowledge: Coordinate geometry Skills: Find and use equations of lines. Future Links: Understanding translations, rotations, reflections, and enlargements. Circle Theorems: Applying coordinate geometry to prove circle theorems. Vectors: Representing vectors as coordinates and performing vector operations.	Prior Learning: Data Handling Frequency Tables Grouped Data Bar Charts Key Knowledge: Histograms Skills: Construct and interpret histograms. Future Links: Data Analysis Statistical Measures (Mean, Median, Mode, Range) Probability Distributions Hypothesis Testing	Prior Learning: Basic Arithmetic Operations Number Patterns Algebraic Thinking Key Knowledge: Sequences Skills: Continue a sequence, (number and pattern) state the rule and find nth terms of sequences including quadratic sequences. Future Links: Algebra (Linear and Quadratic Sequences) Functions Statistics and Probability (Data Analysis)	Prior Learning: Basic number operations Number line Inequalities symbols Solving equations Key Knowledge: Inequalities Skills: - Solve two linear inequalities in x, find the solution sets and compare them to see which value of x satisfies both. - Solve linear inequalities in two variables algebraically. - Represent the solution set for inequalities using set notation, i.e. curly brackets and 'is an element of' notation. - Solve quadratic inequalities. Future Links: Quadratic inequalities Simultaneous equations

Assessment: The key assessment objectives that will be used.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.
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Higher tier – Year 10

	Unit 23	Unit 24	Unit 25	Unit 26	Unit 27	Unit 28	Unit 29
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Understand coordinate and axes Using scales Identify polygons Applying ratio Key Knowledge: Transformations Skills: Be able to accurately carry out and describe rotation, reflection, enlargement and translation including negative enlargements. Future Links: Straight line graphs Congruence and Similarity	Prior Learning: Fractions, decimals and percentages Multiplying and adding fractions Key Knowledge: Probability Skills: - Calculate the probability of events and answer functional questions relating to probability. - Be able to draw tree diagrams and find the probability of independent and dependent events. Future Links: Stem and leaf diagrams Exam style questions involving algebra and statistical diagrams	Prior Learning: Draw and use Venn diagrams Probability Key Knowledge: Set theory Skills: Use set theory notation and solve probability problems involving venn diagrams. Future Links: Solving conditional probability problems	Prior Learning: Perimeter and area Key Knowledge: Surface area & volume Skills: Be able to find the volume and surface area of 3D shapes including cones and spheres. Future Links: Compound measures Conversion of units Similarity and congruence	Prior Learning: Surface area & volume Calculate with fractions Key Knowledge: Compound measures Skills: - Be able to convert measures of length, area and volume. - Use formulae involving speed, density and pressure. Future Links: Real-life problems involving estimation and accuracy Similarity & congruence	Prior Learning: Surface area & volume Compound measures Key Knowledge: Similarity & congruence Skills: - Understand what similarity and congruence are and be able to apply the concepts to problems. - Be able to prove that two shapes are similar or congruent to one another. Future Links: Complex transformations of shapes	Prior Learning: Manipulating expressions Calculating with negative numbers Expanding and factorising Key Knowledge: Rearranging formulae Skills: Be able to change the subject of a formula including the use of factorizing. Trust aligned Future Links: Algebraic proof Solving worded problems

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Curriculum Overview for Year 11

Year 11 Assessment Point 1: OCT 25 - The current grade with target grade will be reported home at this assessment point.

Year 11 Assessment Point 2: JAN 26 - The current grade with target grade will be reported home at this assessment point.

Year 11 Assessment Point 3: MAR 26 - The current grade with target grade will be reported home at this assessment point.

The following applies to all tiers in this year group.

Essential knowledge from prior learning that needs revisiting	The first 5 lessons of the year will focus on using negative numbers in various contexts. Sparx maths will be used for homework and computer-based lessons to support retention of topics. All maths lessons throughout the year will start with fluency starters covering topics taught from the KS2 and KS3 curriculum. All students have voluntary access to, or may be requested by a teacher to attend, extra weekly intervention Sessions.
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The table below details the curriculum content students will be covering each half term in this subject area. Assessments will aim to assess the knowledge and skills a student has covered up to that point in their education, this also includes the curriculum covered in the previous year/s.

LAL tier – Year 11

	Unit 23	Unit 24
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Know the types of angles Estimate size of angles Key Knowledge: Constructing triangles and circles and measuring Skills: - Be able to accurately use a ruler, protractor and compasses. - Construct squares, rectangles, circles, and triangles. Future Links: Constructing bisectors and loci Identifying angles in parallel lines	Prior Learning: Using scales Substitution Key Knowledge: Coordinates revision and straight line graphs Skills: - Use equations for horizontal and vertical lines. - Read and plot tables of coordinates. - Identify y-intercepts of other straight lines. Future Links: Reading and interpreting graphs
Assessment: The key assessment objectives that will be used.	- Name and classify 2D shapes. - Use a protractor	- Be able to find and use coordinates in 4 quadrants. - Find midpoints of lines.

Foundation tier – Year 11

	Unit 29	Unit 30	Unit 31	Unit 32	Unit 33
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Measuring and angle drawing skills Key Knowledge: Constructions & loci Skills: Be able to accurately construct bisectors, triangles and loci with mathematical instruments. Future Links: Proof that two triangles are congruent	Prior Learning: Round numbers to a given power of 10 and decimals to the nearest whole number. Place value Multiplication and division Key Knowledge: Standard form Skills: - Convert large and small numbers into standard form and vice versa. - Add and subtract numbers in standard form. - Multiply and divide numbers in standard form. Future Links: Using standard index form to perform applied calculations	Prior Learning: Know how to read and plot coordinates in all four quadrants Know how to draw lines of the type $x=a$, $y=a$, $y=x$ and $y=-x$ Key Knowledge: Coordinate geometry Skills: Find and use equations of lines. Future Links: Interpreting and drawing linear and non-linear graphs	Prior Learning: Solve linear equations Draw line graphs Key Knowledge: Simultaneous equations Skills: Be able to solve linear simultaneous equations by elimination. Future Links: Real-life problems involving statistical analysis Algebraic manipulation	Prior Learning: Key Knowledge: Further percentages Skills: Be able to use successive percentages and solve reverse percentage problems. Future Links:
Assessment: The key assessment objectives that will be used.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.

Foundation tier – Year 11

	Unit 34	Unit 35	Unit 36	Unit 37
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Solving and manipulating expressions Key Knowledge: Quadratics Skills: Factorise, expand and draw quadratics to be able to solve quadratics problems. Future Links: Sketching graphs of quadratic equations	Prior Learning: Coordinates Transformation Key Knowledge: Vectors Skills: Use vector notation and find missing vectors from diagrams. Future Links: Real-life problems involving navigation, bearings and construction	Prior Learning: Manipulate and substitute into algebraic expressions Key Knowledge: Algebraic proof Skills: Use algebra to prove a statement or equation is always true. Future Links: Algebraic manipulation	Prior Learning: Algebraic Substitution Using a calculator Key Knowledge: Trial & improvement Skills: Use trial and improvement to solve equations to a given degree of accuracy. Future Links: Estimation and error checking
Assessment: The key assessment objectives that will be used.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.

Higher tier – Year 11

	Unit 30	Unit 31	Unit 32	Unit 33	Unit 34
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Solve linear and quadratic equations Key Knowledge: Simultaneous equations Skills: To be able to solve linear and quadratic simultaneous equations. Future Links: Real-life problems involving statistical analysis Algebraic manipulation	Prior Learning: Basic angle facts Substitute into and rearrange expressions Key Knowledge: Functions Skills: - Use function notation. - Find $f(x) + g(x)$ and $f(x) - g(x)$, $2f(x)$, $f(3x)$ etc algebraically. - Find the inverse of a linear function. Future Links: Real-life problems involving statistical analysis Problems involving programming and logical reasoning	Prior Learning: Area and circumference of a circle Basic angle facts Key Knowledge: Circle theorems Skills: - Know circle theorems and use these to find missing angles. - Be able to prove circle theorems using angle rules. Future Links: Linear and quadratic simultaneous equations Graphs of circles Volume and algebra	Prior Learning: Powers and roots Factors and multiples Plotting graphs Understanding inequalities Key Knowledge: Index notation & surds Skills: Know and apply laws of indices (including fractional and negative) and know and apply rules of surds. Future Links: Solving quadratics Bounds and compound measures Simultaneous equations	Prior Learning: Solving equations and inequalities which involve brackets Solving inequalities involving negative numbers Key Knowledge: Quadratics Skills: - Generate points and plot graphs of simple quadratic functions, then more general quadratic function. - Find approximate solutions of a quadratic equation from the graph of the corresponding quadratic function. - Find the intersection points of the graphs of a linear and quadratic function. Future Links: Linear and quadratic simultaneous equations Graphs of circles Volume and algebra
Assessment: The key assessment objectives that will be used.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.

Higher tier – Year 11

	Unit 35	Unit 36	Unit 37	Unit 38	Unit 39
Curriculum Content: The key knowledge and skills that will be taught.	Prior Learning: Substitute into and rearrange expressions Key Knowledge: Iterative processes Skills: Be able to use iterative techniques to find a more accurate solution to a problem. Future Links: Problems involving programming and logical reasoning	Prior Learning: The trig ratios Substitution Key Knowledge: Sine & cosine rules Skills: - Know and apply the sine rule and cosine rule to find unknown lengths and angles. - Know and apply to calculate the area, sides or angles of any triangle. Future Links: Real-life problems involving engineering and construction	Prior Learning: Manipulate and substitute into algebraic expressions Key Knowledge: Algebraic proof Skills: Solve 'Show that' and proof questions using consecutive integers (n, $n+1$), squares (a^2, b^2), even numbers ($2n$) and odd numbers ($2n+1$). Future Links: Real-life problems involving programming and engineering	Prior Learning: Ratio and proportion Key Knowledge: Vectors Skills: - Use vectors to describe translations. - Use and interpret vectors as displacements in the plane (with an associated direction). Future Links: Problems involving programming and logical reasoning	Prior Learning: Key Knowledge: Further graphs & functions Skills: - Plot and recognise linear, quadratic, cubic, reciprocal, exponential and circular functions, $y = \sin x$ and $y = \cos x$ within the range -360° to $+360^\circ$. - Use the graphs of these functions to find approximate solutions to equations, eg. given x find y (and vice versa). - Interpret graphs of quadratic functions from real-life problems. - Sketch translations and reflections of a given function. Future Links: Level 3 Transformations of functions Level 3 Transformations of algebraic graphs
Assessment: The key assessment objectives that will be used.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.	A tiered unit assessment which will be peer marked, teacher assessed and then reflected and improved upon by students.