

Maths Curriculum Overview

Year 7

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic(s)	Unit 1 Numeracy 1 – (Core Skills): - Types of number - Addition and subtraction - Multiplication and division - Decimals - Rounding - Area and perimeter - HCF, LCM	Unit 2 Geometry 1 – (Angles and Polygons): - Draw, name, and estimate angles - Angle facts - Area of parallelograms, trapezia - Bearings	Unit 3 Numeracy 2 – (Fractions, Decimal, and Percentages): - Calculator skills - Equivalent fractions - Fractions calculations - Fractions of amounts - FDP conversion - Percentages of amounts - Percentage increase and decrease	Unit 4 Algebra 1 – (Expressions): - BIDMAS - Negative numbers - Simplify expressions - Substitution - Indices introduction	Unit 5 Ratio 1 – (Percentages): - Percentages of amounts - Non-calculator and calculator - Percentage movement - Pie charts - Multipliers	Unit 6 Statistics 1 – (Key Skills): - Data collection - Averages and measures of spread - Graphs - Analysing data - End of Year Project
Topic Objectives	To consolidate understanding of number operations and place value including applications within 2D shapes. To extend concepts of estimation, other number systems and accuracy of measurements.	To consolidate angle knowledge through estimating, measuring, and use of angle properties as well as develop understanding of area and perimeter of 2D shapes. To extend angles knowledge through constructions, bearings and angle facts in parallel lines and regular polygons.	To recap knowledge on fractions, decimals and percentages including conversions and calculations. To extend through mixed number calculations and FDP comparisons.	To introduce and develop understanding of algebra focused around expressions including simplifying, expanding brackets and substitution. Extension will include use of indices and negative values.	To recap basic skills such as percentages of amounts, percentage increase and decrease. To construction and interpretation of pie charts. To extend through problem solving with reverse and compound increase percentages.	To recap statistical representations and develop construction and interpretation of graphs and data collection techniques. To extend through comparisons of data and justification of decision making.

Acquired Knowledge/ Skills	Recap core skills of number, extend understanding of place value and indices. This will be extended to develop problem solving skills by applying number skills to area of 2D shapes.	Recap core terminology and properties of angles and 2D shapes. Development of reasoning by using angle facts and area formulae.	Recap knowledge of place value and notation of types of number. To develop reasoning to convert and order FDP.	Understanding of core terminology in algebra and ability to use this to identify how to solve problems. Extension skills include a greater detail of number knowledge that is applied in algebraic problems (e.g. indices and negative values).	Able to apply percentage rules to solve basic problems. Extension of reasoning skills to manipulate percentage problems and understand real life applications	Developed understanding of statistical analysis and representations. Extended through a statistical project to develop communication and application skills.
Assessments	Assessment on Unit 1.	Cumulative Unit 2 assessment, including all topics to date.	Cumulative Unit 3 assessment, including all topics to date.	Cumulative Unit 4 assessment, including all topics to date.	Cumulative Unit 5 assessment, including all topics to date.	Cumulative Unit 6 assessment, including all topics to date.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Links to money and other real-life contexts.	Use of bearings in shipping.	Understanding sales, inflation and both personal and national debt. Understanding rates of increase, including in the context of rising global temperatures, population, plastic waste.	Use of temperature, and use of maps to compare temperatures in different countries.	Understanding sales, inflation, personal and national debt, rates of increase, including in the context of rising global temperatures, population, plastic waste. Displaying information in pie charts and how this can be done poorly to mislead people and why organisations may choose to misrepresent their data.	Use of real-world data including populations, temperatures and a variety of environmental impact data.

Maths Curriculum Overview

Year 8

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic(s)	Numeracy 3 (Properties and Indices): - Types of number - Prime Factorisation - Product of Primes - HCF & LCM - Indices - Standard Form	Algebra 2 (Equations): - Inequality statements - Substitution - Algebraic manipulation - Function machines - Linear equations - Known formulae - Solving linear inequalities - Rearranging formulae	Geometry 2 (2D and 3D Shapes): - Measures - Accurate drawing - Angles in parallel lines - Composite 2D shapes - Area of trapeziums - Area & Circumference of circles - Properties of 3D shapes - Nets - Volume and surface area of prisms	Ratio/Statistics 2 (Ratio, Grouped Data, Probability): - Ratio - Comparing two data sets - Stem and leaf diagrams - Mean from grouped data - Scatter diagrams - Probability introduction	Geometry 3 (SDT and Transformations): - Converting time - SDT - Reflections - Rotations - Enlargements - Translations - Constructions	Functional Skills: - Probability - Real world applications of maths
Topic Objectives	Extend application of number to include manipulation of number to include standard form and index laws.	Extend application of algebra through substitution and solving. Application extended to linear equations that include bracket and fractions.	To consolidate measurement, 2D and 3D shape terminology and area and perimeter. Extension topics will include conversion between measurements, area and perimeter of	To recall basic ratio problems including simplifying and dividing quantities into given ratio, grouped data (stem and leaf, averages) and probability skills. Extension topics will include proportionality	To recall conversion of measurements. To recap transformations such as reflection and rotation. Extension includes the introduction of enlargement and translation.	To recap probability terminology. Extension to include construction of tree diagrams and two-way tables.

			compound shapes and calculating proportion of circles.	and the extended skills to make decision with grouped data.	Multi- step problems including SDT and transformations will also be targeted to extend and challenge students.	
Acquired Knowledge/ Skills	Challenge for higher sets include basic numeracy but extends to the laws of indices, factors and multiples, fractions and standard form.	Recap core terminology of algebraic manipulation, introduce forming, rearranging and solving linear equations.	Recap terminology of conversions and 2D shapes. To extend through reasoning and problem solving through compound problems.	To apply skills learnt using recapped terminology. Extension includes application of skills to compare data, justify decision making or understand bias.	Know and understand conversion and compound measures. Consolidate knowledge to problem solve through application of measurement conversions and multi-step problems.	To apply skills recalled to represent data using specific mathematical notations. Extensions include introduction of independent events and financial modelling with algebra, enabling students to apply skills learnt.
Assessments	Cumulative Unit 7 assessment, including all topics to date.	Cumulative Unit 8 assessment, including all topics to date.	Cumulative Unit 9 assessment, including all topics to date.	Cumulative Unit 10 assessment, including all topics to date.	Cumulative Unit 11 assessment, including all topics to date.	Cumulative Unit 12 assessment, including all topics to date.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Understanding the scale of the universe and tiny particles, linking to science topics such as atomic structure and astronomy. Understanding the importance of prime numbers in internet and banking security.	Understanding common formulae and biases which make certain formulae famous. Links to commonly used formulae in science. Using inequality statements to describe real world situations including speed limits and voting restrictions.	Applications of shapes in the real world including finding areas of sports pitches. Use of technical drawing to plot courses for ships and aeroplanes.	Links to gambling and how unsafe accumulator bets are compared to how likely a series of events seem. Comparing real world data including climate change data.	Use of time to read timetables and plan journeys.	Use of real world data and probabilities including population and climate data.

Maths Curriculum Overview

Year 9 (Foundation)

	Unit 1	Unit 2	Unit 3	Unit 4
Topic(s)	- Non-calculator arithmetic - Negative numbers - BIDMAS - Rounding and estimation - Using a calculator - Percentages - Growth and decay - Standard form	- Inverse operations - Substitution - Simplifying expressions - Expand and factorise single brackets - Solving equations - Sequences - Linear graphs - gradients - Quadratic, cubic, reciprocal graphs - Real life graphs	- Properties of shape - Symmetry - Area and perimeter - Surface area and volume - Circles 2D coordinates - Plans and elevations - Constructions and loci	- Frequency diagrams - Pie charts - Two-way tables - Averages - Mean from grouped data - Comparing two data sets - Scatter diagrams - Basic probability - Venn diagrams and sets - Sample spaces - Probability trees
Topic Objectives	Review and develop fluency of core numeracy skills. Focus on non-calculator arithmetic. Developing confidence with negative number operations. Applications of BIDMAS as an acronym for the order of operations. Using rounding methods as a means of estimation. Encouraging estimation as a means to check answers for reasonability. Calculating percentages, with use of decimal multipliers. Applications	Introduce algebraic notation. Algebraic manipulation including simplify expressions, expanding & factorising brackets. To understand use of inverse functions within algebra. Substitution. Multi-step solving of equations. Arithmetic & quadratic sequences, both as patterns and number sequences. Use of correct terminology. Starting to define sequences in terms of algebra, nth term.	Review properties of shapes for 2 and 3 dimensions. Recap facts for quadrilaterals and different types of triangle. Consider types of prism and pyramids. Interpret symmetry for 2D shapes, including order of rotational symmetry. Also planes of symmetry in 3D. Calculate area and perimeter for types of 2D shape. Applications for compound shapes and parts of a circle.	Recap of various methods of graphical representation. Diagrams to include, but not limited to, pictograms, bar charts, time series graphs. Drawing pie charts to represent proportion. Interpreting results. Grouping data. Use of two-way tables.

	for repeated percentage movements (compound). Introduction to standard form and its use in extremely large and small values.	Plotting linear graphs of the form $y=mx+c$. Interpreting values for gradient and the y intercept. Sketching non-linear graphs. Applications of graphs in real life, as distance-time or for conversion between units.	Interpreting 3-dimensional space through accurate drawing of plans and elevations. Developing skills in using mathematical equipment for both geometric construction and loci.	Analysing data with appropriate measures of average and spread. Including calculating the mean average from grouped data and understanding when it is an estimate. Making appropriate commentary for when comparing data sets based on the analysis completed. Drawing scatter graphs for bivariate data. Use of interpolation and extrapolation.
Acquired Knowledge/ Skills	Recap of core skills of number and use of calculators. Apply numeracy skills to multi-step questions. Realise applications to real world problems. Percentage movements for appreciation and depreciation. Including monetary and population changes.	Recap of core skills and terminology for algebraic problems. Extending possibilities of forming algebraic expressions and equations to aid solutions of complex problems. Develop understanding of fluency through reasoning, justification of answers through estimation and substitution, evaluation and choice of mathematical methods.	Recap core skills that allow mathematical methods to be applied to solve geometric problems. Develop key terminology for shape in order to describe and differentiate between types.	Develop understanding of statistical analysis to incorporate reasoning, undertaking of more complex calculations, comparisons to be made and supporting arguments to be given. Application of skills to a mini project on student data. Giving students the opportunity to consolidate understanding through use.
Assessments	Unit 1 assessment.	Cumulative Unit 2 assessment, including all topics to date.	Cumulative Unit 3 assessment, including all topics to date.	Cumulative Unit 4 assessment, including all topics to date.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Understanding growth and decay in the context of global and local populations, nuclear decay and what this means for the environmental impact of nuclear waste.	Real life sequences and graphs showing the underlying mathematics of the universe and how patterns are around us everywhere.	Constructions and loci to plot shipping and aeroplane routes and to plan building and town layouts.	Use of misleading statistics and diagrams in politics and the media and how to remain aware of the underlying data. Links between probability and gambling.

Maths Curriculum Overview

Year 9 (Higher)

	Unit 1	Unit 2	Unit 3	Unit 4
Topic(s)	• Non-calculator arithmetic • BIDMAS • Using a calculator • Estimation • Indices • Percentages • Standard form • Surds	• Substitution • Simplifying expressions – incl. products and quotients • Expand single and double brackets • Factorise single brackets • Solving equations • Rearranging formulae • Sequences • Linear graphs – incl. parallel and perpendicular • Quadratic, cubic, reciprocal, exponential graphs • Real life graphs	• Properties of shape – polygons, polyhedral • Plans and elevations • Constructions and loci • Area and perimeter – incl. circles, arcs, and sectors • Surface area and volume • Pythagoras in 2D and 3D • Compound measures	• Questionnaires and misleading graphs • Frequency diagrams and pie charts • Two-way tables • Averages • Mean from grouped data • Comparing two data sets • Scatter diagrams • Cumulative frequency and box plots • Venn diagrams and sets
Topic Objectives	Review and develop fluency of core numeracy skills. Focus on non-calculator arithmetic. Developing confidence with negative number operations. Applications of BIDMAS as an acronym for the order of operations. Using rounding methods as a means of estimation. Encouraging estimation as a means to check answers for reasonability.	Introduce algebraic notation. Algebraic manipulation including simplify expressions, expanding & factorising brackets. To understand use of inverse functions within algebra. Substitution. Multi-step solving of equations including fractions.	Review properties of shapes for 2 and 3 dimensions. Recap facts for quadrilaterals and different types of triangle. Consider types of prism and pyramids. Interpret symmetry for 2D shapes, including order of rotational symmetry. Also planes of symmetry in 3D. Applications of Pythagoras in both 2D and 3D. Calculate surface area and volume for types of 3D shape. Applications for compound shapes and parts of a circles & cylinders.	Recap of various methods of graphical representation. Diagrams to include, but not limited to, pictograms, bar charts, time series graphs. Drawing pie charts to represent proportion. Interpreting results. Grouping data. Use of two-way tables. Analysing data with appropriate measures of average and spread. Including calculating the mean average from grouped data and

	Calculating percentages, with use of decimal multipliers. Applications for repeated percentage movements (compound). Introduction to standard form and its use in extremely large and small values. To include calculations for all 4 operations. Use of surds as accurate irrational values. Simplifying surds, rationalising denominators, calculations.	Arithmetic & quadratic sequences, both as patterns and number sequences. Use of correct terminology. Defining sequences in terms of algebra, nth term. Plotting linear graphs of the form $y=mx+c$. Interpreting values for gradient and the y intercept. Calculating parallel and perpendicular lines through a given point. Sketching non-linear graphs. Applications of graphs in real life, as distance-time or for conversion between units.	Interpreting 3-dimensional space through accurate drawing of plans and elevations. Developing skills in using mathematical equipment for both geometric construction and loci.	understanding when it is an estimate. Making appropriate commentary for when comparing data sets based on the analysis completed. Drawing scatter graphs for bivariate data. Use of interpolation and extrapolation. Presenting grouped data using Cumulative frequency diagrams and box and whisker plots. Use of Venn diagrams and notation.
Acquired Knowledge/ Skills	Recap of core skills of number and use of calculators. Apply numeracy skills to multi-step questions. Realise applications to real world problems. Percentage movements for appreciation and depreciation. Including monetary and population changes. Use of surds for accuracy. Looking at applications across topics, including Pythagoras.	Recap of core skills and terminology for algebraic problems. Extending possibilities of forming algebraic expressions and equations to aid solutions of complex problems. Develop understanding of fluency through reasoning, justification of answers through estimation and substitution, evaluation and choice of mathematical methods.	Recap core skills that allow mathematical methods to be applied to solve geometric problems. Develop key terminology for shape in order to describe and differentiate between types.	Develop understanding of statistical analysis to incorporate reasoning, undertaking of more complex calculations, comparisons to be made and supporting arguments to be given. Application of skills to a mini project on student data. Giving students the opportunity to consolidate understanding through use. Further focus on grouping of data and its limitations.
Assessments	Unit 1 assessment.	Cumulative Unit 2 assessment, including all topics to date.	Cumulative Unit 3 assessment, including all topics to date.	Cumulative Unit 4 assessment, including all topics to date.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Understanding growth and decay in the context of global and local populations, nuclear decay and what this means for the environmental impact of nuclear waste.	Real life sequences and graphs showing the underlying mathematics of the universe and how patterns are around us everywhere.	Constructions and loci to plot shipping and aeroplane routes and to plan building and town layouts.	Use of misleading statistics and diagrams in politics and the media and how to remain aware of the underlying data. Links between probability and gambling. Use of real world data including population and climate data.

Maths Curriculum Overview

Year 10 (Foundation)

	Unit 5	Unit 6	Unit 7	Unit 8
Topic(s)	- HCF, LCM - Four rules of fractions - Four rules of decimals - Percentage conversions - Laws of indices - Ratio - Direct and Inverse proportion - Fraction to recurring decimal	- Angle rules – incl. parallel and polygons - Transformations - Bearings - Pythagoras' theorem - Trigonometry - Exact trig ratios - Recall and use standard formulae	- Forming and solving equations - Functions - Solving inequalities - Rearranging formulae - Simultaneous equations - Expanding double brackets - Factorising and solving quadratic equations - Proofs - Using kinematic formulae	- Questionnaires and misleading graphs - Venn diagrams and sets – revisit - Probability scale and calculating probability – revisit - Relative frequency - Listing outcomes/sample spaces - Tree diagrams – revisit - Sampling
Topic Objectives	Review and develop highest common factor and lowest common multiple including applications involving product of prime factors. Review and develop core calculation skills with fractions and decimals. Concept and applications of laws of indices, including addition, subtraction, multiplying and negative powers. Review and develop different symbols.	Review and develop core angle facts, including applications within parallel lines and polygons. Introduce transformations including enlargements with fractional scale factors and descriptions of transformations. Introduction of bearings and scale drawings including interpretations of scale drawings. Introduce, derive and apply Pythagoras theorem in 2 dimensional shapes.	Revisit and consolidate existing algebra knowledge from Unit 2. Apply understanding of solving equations to context which includes forming the equations. Rearrange formulae, including variations where subject appears twice. Form and solve linear simultaneous equations in two variables algebraically. Expanding products of two binomials.	Revisit and consolidate data skills and apply these to real world contexts including exploring how media and politics can misrepresent data to support their agendas. Understand the key concepts of probability and how experimental probability can be used to model real life occurrences. Explore links to gambling and debt. Understand how samples can be used and scaled up to make

	Introduction to ratio and proportion, and their applications within worded problems. Consolidate conversions between fractions decimals and percentages and understanding of converting a fraction to a recurring decimal.	Introduction of trigonometry in 2 dimensional shapes. Know and use the exact values of trigonometry ratios for specific angles.	Factorise quadratics in the form $x^2 + bx + c$. Introduce the algebraic terminology around proofs and develop ability to construct algebraic arguments. Introduction to kinematic formulae and applications.	predictions about whole populations.
Acquired Knowledge/ Skills	Apply number skills within other topics. Reason mathematically using ratio and proportionality and apply this in various contexts including real life applications.	Develop reasoning and problem-solving skills through geometric contexts. Apply geometry skills to solve real world problems. Develop methods to remember facts, such as pattern recognition, mnemonic devices and memorable diagrams.	Apply algebra skills and use these in context. Model algebra using graphs. Develop procedural fluency.	Learn data collection and representation techniques. Understand how to represent data in an unbiased way, and how it looks when presented in a misleading manner. Learn techniques for calculating probabilities of multiple events.
Assessments	Unit 5 assessment, including all topics to date.	Cumulative Unit 6 assessment, including all topics to date.	Cumulative Unit 7 assessment, including all topics to date.	Cumulative end of year mock exam.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Proportionality links to science curriculum.	History of trigonometry – geographical movement of cultural interest in geometry over time – India and Brahmagupta.	Known formulae link to science and also a chance to discuss biases in which branches of mathematics become famous – e.g. Einstein.	Data collected from real world statistics. Probability and links to gambling.

Maths Curriculum Overview

Year 10 (Foundation)

	Unit 5	Unit 6	Unit 7	Unit 8
Topic(s)	- HCF, LCM - Four rules of fractions - Four rules of decimals - Percentage conversions - Laws of indices - Ratio - Direct and Inverse proportion - Fraction to recurring decimal	- Angle rules – incl. parallel and polygons - Transformations - Bearings - Pythagoras' theorem - Trigonometry - Exact trig ratios - Recall and use standard formulae	- Forming and solving equations - Functions - Solving inequalities - Rearranging formulae - Simultaneous equations - Expanding double brackets - Factorising and solving quadratic equations - Proofs - Using kinematic formulae	- Questionnaires and misleading graphs - Venn diagrams and sets – revisit - Probability scale and calculating probability – revisit - Relative frequency - Listing outcomes/sample spaces - Tree diagrams – revisit - Sampling
Topic Objectives	Review and develop highest common factor and lowest common multiple including applications involving product of prime factors. Review and develop core calculation skills with fractions and decimals. Concept and applications of laws of indices, including addition, subtraction, multiplying and negative powers. Review and develop different symbols.	Review and develop core angle facts, including applications within parallel lines and polygons. Introduce transformations including enlargements with fractional scale factors and descriptions of transformations. Introduction of bearings and scale drawings including interpretations of scale drawings. Introduce, derive and apply Pythagoras theorem in 2 dimensional shapes.	Revisit and consolidate existing algebra knowledge from Unit 2. Apply understanding of solving equations to context which includes forming the equations. Rearrange formulae, including variations where subject appears twice. Form and solve linear simultaneous equations in two variables algebraically. Expanding products of two binomials.	Revisit and consolidate data skills and apply these to real world contexts including exploring how media and politics can misrepresent data to support their agendas. Understand the key concepts of probability and how experimental probability can be used to model real life occurrences. Explore links to gambling and debt. Understand how samples can be used and scaled up to make

	Introduction to ratio and proportion, and their applications within worded problems. Consolidate conversions between fractions decimals and percentages and understanding of converting a fraction to a recurring decimal.	Introduction of trigonometry in 2 dimensional shapes. Know and use the exact values of trigonometry ratios for specific angles.	Factorise quadratics in the form $x^2 + bx + c$. Introduce the algebraic terminology around proofs and develop ability to construct algebraic arguments. Introduction to kinematic formulae and applications.	predictions about whole populations.
Acquired Knowledge/ Skills	Apply number skills within other topics. Reason mathematically using ratio and proportionality and apply this in various contexts including real life applications.	Develop reasoning and problem-solving skills through geometric contexts. Apply geometry skills to solve real world problems. Develop methods to remember facts, such as pattern recognition, mnemonic devices and memorable diagrams.	Apply algebra skills and use these in context. Model algebra using graphs. Develop procedural fluency.	Learn data collection and representation techniques. Understand how to represent data in an unbiased way, and how it looks when presented in a misleading manner. Learn techniques for calculating probabilities of multiple events.
Assessments	Unit 5 assessment, including all topics to date.	Cumulative Unit 6 assessment, including all topics to date.	Cumulative Unit 7 assessment, including all topics to date.	Cumulative end of year mock exam.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Proportionality links to science curriculum.	History of trigonometry – geographical movement of cultural interest in geometry over time – India and Brahmagupta.	Known formulae link to science and also a chance to discuss biases in which branches of mathematics become famous – e.g. Einstein.	Data collected from real world statistics. Probability and links to gambling.

Maths Curriculum Overview

Year 10 (Higher)

	Unit 1	Unit 2	Unit 3	Unit 4
Topic(s)	- HCF, LCM - Four rules of fractions - Four rules of decimals - FDP conversions - Laws of indices - Ratio - Direct and Inverse proportion - Fraction to recurring decimal - Surds recap	- Angle rules – incl. parallel and polygons 2D coordinates - Circle theorems - Bearings - Bounds - Pythagoras recap - Trigonometry - Exact trig ratios - Gradients as rates of change - SUVAT - Recall and use standard formulae	- Forming and solving equations - Functions – incl. revisiting of rearranging for inverse functions - Solving inequalities - Factorising and solving quadratics - Simultaneous equations - Sequences – linear, quadratic, geometric - Algebraic fractions - Iterative methods - Revisit parallel and perpendicular lines	- Factorising recap - Algebraic proofs - Quadratic formula - Completing the square - Polynomial and exponential functions - Equations of circles and tangents - Sim. Eqns – 1 linear, 1 quadratic - Transforming graphs - Difficult graphs
Topic Objectives	Review and develop highest common factor and lowest common multiple including applications involving product of prime factors. Review and develop core calculation skills with fractions and decimals. Concept and applications of laws of indices, including addition, subtraction, multiplying and negative powers.	Review and develop knowledge of core angle facts, including applications within parallel lines and polygons. To recap terminology for angles and bearings and apply angle rules. Introduce transformations including enlargements with fractional scale factors and descriptions of transformations.	Introduce algebraic notation. To simplify expressions including brackets and factorise quadratics. To interpret and construct tables. To identify lines of best fit. To compare, convert fractions and apply the four operations. To solve equations both graphically and algebraically. To introduce algebraic fractions, the interpretation and construction of histograms and calculations including upper and lower bounds.	Recap basic algebra skills and develop these further, exploring more complex topics and setting these against real world problems such as population growth and rates of climate change and ocean plastic. Be able to apply proof related logic and understand the difference between proof and conjecture. To work with coordinates and mid points.

	Review and develop different symbols. Introduction to ratio and proportion, and their applications within worded problems. Understand Surds. Consolidate conversions between fractions decimals and percentages and understanding of converting a fraction to a recurring decimal. Consolidate and develop fluency of core number topics.	Introduction of bearings and scale drawings including interpretations of scale drawings. Introduce, derive and apply Pythagoras theorem in 2 dimensional shapes. Introduction of trigonometry in 2 dimensional shapes. Know and use the exact values of trigonometry ratios for specific angles.		To introduce circle theorems and new terminology associated. To use $y = mx + c$ to identify perpendicular lines. Consolidate knowledge and extend mathematical rules.
Acquired Knowledge/ Skills	Recap of core skills of number and use of calculators. Apply number skills to high grade topics. To recall angle theorems. To identify gradient and the y-intercept to find midpoints. To use application and extend topics further to include comparisons, problem solving and decision making on multi-step problems. To ensure basic number skills are developed to include proof. To understand and apply the high-grade skills involved in solving problems with surds.	Develop reasoning and problem - solving skills through geometric contexts. Apply geometry skills to solve real world problems. Develop methods to remember facts, such as pattern recognition, mnemonic devices and memorable diagrams.	Recap core skills that allow mathematical methods to be applied to solve problems. Develop key terminology for greater independence of problem solving. Develop understanding of topics covered to incorporate reasoning, undertaking of complex mathematical models, comparisons to be made and supporting arguments to be given.	To know and apply algebraic rules to solve mathematical problems and to use these in real world contexts. To develop understanding of topics in questions involving problem solving, reasoning, interpretations, justifications and choice. These questions develop understanding and fluency within mathematics.
Assessments	Unit 5 assessment, including all topics to date.	Cumulative Unit 6 assessment, including all topics to date.	Cumulative Unit 7 assessment, including all topics to date.	Cumulative end of year mock exam.

Other Links (e.g. SMSC, FBV, Greener Curriculum)	Connections to science curriculum with proportion and concepts of growth and decay. Understanding the implications of nuclear waste through learning about radioactive decay. Understanding problems associated with exponential population growth.	History of geometry, Descartes with cartesian co-ordinates. Euclid and Brahmagupta. To understand the historical movement of interest in geometry.	Looking at real world patterns and sequences. Understanding how sequences appear in nature and the fascination with Fibonacci and the golden ratio.	Understanding the beauty and power of mathematics, and how this links to a deeper understanding of the world beyond the surface interactions usually explored. (This is not grocery shopping maths, but that does not mean it isn't relevant to the world we live in).
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Maths Curriculum Overview

Year 11

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
Topic(s)	Geometry topics including vectors, similarity and congruence and area and volume.	Topics defined based upon class performance in mock examinations. Full question level analysis leading to teacher interventions.	Walking talking mock examinations completed once per week, with subsequent lessons focusing on gaps in knowledge.	Walking talking mock examinations to continue as a key lever in identifying topics for revision.	Revision – topic based with specific exam question techniques.
Topic Objectives	To be able to apply problem solving skills to geometric problems, involving two- and three-dimensional shapes. To be able to use vector notation and to use this describe displacement and to solve exam questions.	Consolidate and evaluate different mathematical methods. Develop approaches to GCSE specific questions for both Foundation and Higher tiers of entry.	Students to self-evaluate their understanding during weekly teacher led mock examination lesson. Lessons to revisit topics where class understanding highlights a need during the mock.	Students to self-evaluate their understanding during weekly teacher led mock examination lesson. Lessons and home learning on MathsWatch to be defined by individual needs.	To revise previous content from the GCSE specification.
Acquired Knowledge/ Skills	Lesson starters to recap core skills of numeracy, algebra, geometry and statistics. Each class to develop skills in using formulae to describe properties of shapes and to apply this to real world contexts.	Lesson starters to recap core skills of numeracy, algebra, geometry and statistics. Each class to develop skills based upon mock examination results. Gaps in knowledge to be identified, with lessons to improve and consolidate existing knowledge.	Examination technique focus during weekly walking talking mock paper. This will enable students to refine their examination technique by question type/topic.	Examination technique focus during weekly walking talking mock paper. Full mock examinations to establish improvements since the September mock. Further topic specific lessons to enhance	To revise previous content from the GCSE specification.

		Ongoing topic review, with an emphasis on examination technique as part of targeting improved results for every student.	Topic specific lessons to enhance knowledge as and when identified.	knowledge identified by final mocks.	
Assessments	Two mock examination papers completed as part of November PPEs.	Third mock examination completed for holistic view.	Walking talking mocks commence in lessons.	Two mock exam papers during mock week.	Three scheduled GCSE examinations in May and June. One non calculator and two calculator papers.
Other Links (e.g. SMSC, FBV, Greener Curriculum)	Use of vectors in shipping, air traffic control and game programming.	To make use of links to science in aiding fact retention.	To make use of links to science in aiding fact retention.	To make use of links to science in aiding fact retention.	To make use of links to science in aiding fact retention.