



Through our maths curriculum we will provide a secure understanding of mathematical concepts, from basic principles of mathematics to complex topics that combine several areas of study into a single question. Our curriculum promotes knowledge retention and a depth of learning creating pupils who are confident in taking their studies further into sixth form, university and beyond. In all year groups, there is an intentional focus on numeracy to support pupils, not only in their study of maths, but which will also enable them to access mathematical questions in other subjects.

Year 7 Curriculum - Autumn			
Learning Focus	Numerical Skills	Algebraic Notation	Applying Calculation Skills
Learning Hours Associated	Weeks 1-6 Approx. 22 hours	Week 7-8 Approx. 8 hours	Week 9 - 14 Approx. 18 hours
What pupils will know, understand and be able to do.	<p>Place Value</p> <ul style="list-style-type: none"> Identifying Place Value Rounding to the nearest 10, 100, 1000 Rounding to a decimal place <p>Negative Numbers & Order of Operations</p> <ul style="list-style-type: none"> Compare value of negative numbers and calculate by adding/subtracting and multiplying dividing etc Calculate with brackets & indices <p>Factors & Multiples</p> <ul style="list-style-type: none"> Lowest Common Multiple Highest Common Factor 	<p>Algebraic Notation</p> <ul style="list-style-type: none"> Describe an expression in words Identify functions used in an expression Expanding & Factorising expressions Substitute into a simple expression 	<p>Application of Addition and Subtraction</p> <ul style="list-style-type: none"> Review prior knowledge of addition and subtraction Apply to completing two-way tables Perimeter of Squares and Rectangles Perimeter of Triangles and other polygons Applying knowledge of perimeter with algebraic problems <p>Application of Multiplication and Division</p> <ul style="list-style-type: none"> Review prior knowledge of multiplication and division Area of Squares and Rectangles

	<ul style="list-style-type: none"> Prime Factors 		<ul style="list-style-type: none"> Area of Triangles and other polygons Applying knowledge of area with algebraic problems
Subject Vocabulary	Place Value, Power, Figure, Round, Decimal, Integer, Order, Operation	Term, Expression, Variable, Substitute	Perimeter, Area, Dimension, Product, Share, Sum, Difference
Subject Texts Used			
Cultural Enrichment Opportunities	<p>Relate calculations to real-life problems such as finding costs.</p> <p>Teaching Rounding So Students Actually Understand - Teaching Made Practical</p>	<p>Show how algebra can be used to work to create expressions for real-life calculations. Such as a taxi fare.</p> <ol style="list-style-type: none"> 13 Examples Of Algebra In Everyday Life – StudiosGuy. Applications of Algebra in Real Life (Uses & Examples) (byjusfutureschool.com) Algebra in real life Applications of algebra (cuemath.com) 	<p>Relate to real-life examples such as the area of a room, the perimeter of a garden.</p> <p>Teaching area and perimeter using gaga wall Pit.</p> <p>Everything You Need To Know About Gaga Ball Pits (weareteachers.com)</p>
Learning Behaviours	<p>Reflective on what they have learned in primary school regarding number. Knowledge on this topic builds and develops various aspects of prior learning. Discussion and oracy skills are important to retrieve and reflect on what they already know.</p>	<p>Focus on identifying functions, demonstrating function machines can be useful in explaining the function of an expression.</p>	<p>Focus on practice and independent learning as students will be shown a larger number of techniques for calculating area/perimeter for a variety of different shapes.</p>

Year 7 Curriculum - Spring

Learning Focus	FDP and Fraction Calculations	Percentages & Ratio	Solving an Equation
Learning Hours Associated	Week 15-20 Approx. 15 hours	Week 20-23 Approx. 11 hours	Week 23-24 Approx. 6 hours
What pupils will know, understand and be able to do.	<p>Fractions, Decimals & Percentages</p> <ul style="list-style-type: none"> Convert between fractions and decimals on a number line Visualise percentages on a hundred-square 	<p>Percentages & Ratio</p> <ul style="list-style-type: none"> Find action of an amount Find a percentage of an amount (with and without a calculator) Simplify ratios 	<p>Solving an equation</p> <ul style="list-style-type: none"> Solve 1 step equations Solve 2 step equations Test through substitution

	<ul style="list-style-type: none"> Convert between fractions decimals and percentages (including above 1) <p>Calculating Fractions</p> <ul style="list-style-type: none"> Multiplying Fractions Dividing Fractions Adding Fractions Subtracting Fractions 	<ul style="list-style-type: none"> Share into ratios Solve worded ratio problems Write ratios in the form 1:n 	
Subject Vocabulary	Part of whole, shading, fractions, mixed numbers, improper fractions, numerator, denominator, cancellation, multiplication, division, equivalence	Conversion, fractions, decimals, percentage, equivalent fractions, place value, sharing and comparing quantities, form, cancelling, simplifying	Equation, solve, variable
Subject Texts Used			
Cultural Enrichment Opportunities	<p>Tailoring examples of fractions to students' interests can help them understand the concept better. For instance, using recipes for cooking enthusiasts or analysing sports performance for sports enthusiasts.</p> <p>Fractions - real world examples Skillsworkshop</p>	<p>Visual aids like pie charts and bar graphs can help students convert between fractions, decimals, and percentages when dealing with real-life measurements, sporting events and finances.</p> <p>Fractions of amounts applied in context - Maths - Learning with BBC Bitesize - BBC Bitesize</p> <p>Learn how to convert fractions to percentages – KS3 Maths – BBC Bitesize - BBC Bitesize</p>	<p>To teach substitution effectively, use diverse examples that appeal to their students' interests. These can include sports statistics such as calculating batting averages or field goal percentages, physics formulas, or social studies population growth rates.</p> <p>Substitution - Algebraic formulae - AQA - GCSE Maths Revision - AQA - BBC Bitesize</p>
Learning Behaviours	Students will be required to discuss fractions conceptually to gain a deeper understanding and develop their knowledge from primary school.	Literacy (although important in all aspects of learning maths) will be a particular focus as students will need to read information extremely carefully to solve problems involving ratio and quantities etc.	Students need to be self-critical and reflective in order to test new knowledge that they will learn in this learning focus. Solving an equation builds on what they have learnt previously when they interpreted expressions.

Learning Focus	Using Data	Angles & Symmetry	Cartesian Plane
Learning Hours Associated	Week 25-30 Approx. 16 hours	Week 31-33 Approx. 10 hours	Week 34-38 Approx. 7 hours
What pupils will know, understand and be able to do.	<p>Averages</p> <ul style="list-style-type: none"> Finding the median Finding the mean & the reverse mean Comparing mean, median & mode Find averages on graphs and diagrams <p>Sets & Probability</p> <ul style="list-style-type: none"> Interpret and complete Venn Diagrams Use sample spaces Make suitable predictions for probability problems 	<p>Angles & Symmetry</p> <ul style="list-style-type: none"> Angles around a point, straight-line Interior/exterior angles Finding missing angles in polygons Identify rotational symmetry in 2D shape Identify line symmetry in 2D shape 	<p>Cartesian Plane</p> <ul style="list-style-type: none"> Reading and plotting co-ordinates Complete 2D shapes by plotting co-ordinates Translate 2D shapes Introduce vectors
Subject Vocabulary	Averages, data, mean, median, mode, representation, tables, analyses, comparing, probability Venn Diagram, Set Notation, Sample Space	Turn, measure of an angle, drawing angles, protractors, a whole turn, half turn, straight line, acute, obtuse, reflex, triangles, quadrilaterals, polygons, rotational symmetry, line symmetry	<ul style="list-style-type: none"> Graphs, cartesian grid, coordinates, x-axes, y-axis, translate, vector
Subject Texts Used			
Cultural Enrichment Opportunities	Data collection is crucial for improving business offerings, anticipating trends, conducting research, monitoring patient health, and tracking student progress.	<p>Angles are used in many practical ways. Carpenters use them to measure when building furniture, athletes use them to improve their performance, and architects and engineers use them to design structures.</p> <p>What are Angles? Some Examples and Uses of Angles in Real Life? (byjusfutureschool.com)</p>	The x and y axes of the Cartesian plane are practical for organizing furniture, making maps, and analysing motion in fields like physics and biology.
Learning Behaviours	Students need to identify keywords accurately as there are 3 different	Students will need to apply prior knowledge as well as newly demonstrated	Learning through comparison is important when comparing co-ordinates and vectors

	averages that are expected to learn and apply to problems.	knowledge to a vast variety of different visual problems involving angles. Initiative and independent learning will be crucial in gaining confidence with angle problems which often involve multiple steps to solve. Peer support and discussion will be useful in helping students to explore different ways of solving an angle problem (sometimes there can be more than one way).	as they both have x and y values and could potentially be confused.
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Year 8 Curriculum - Autumn			
Learning Focus	Numerical Skills	Solving linear equations	Sequences and Straight-line Graphs
Learning Hours Associated	Week 1 – 8 Approx. 28 hours	Week 9 – 11 Approx. 8 hours	Week 12-15 Approx. 14 hours
What pupils will know, understand and be able to do.	<p>Calculations & Rounding</p> <ul style="list-style-type: none"> Add/Subtract with negatives Multiply/Divide with negatives Rounding to decimal places and significant figures Make appropriate estimations and use error intervals <p>Units of measure</p> <ul style="list-style-type: none"> Converting units of length Converting units of mass & volume Converting units of time <p>Developing Fraction Skills</p> <ul style="list-style-type: none"> Develop fraction calculations from Year 7 Convert between mixed numbers & improper fractions Calculate with algebraic fractions 	<p>Equations and Inequalities</p> <ul style="list-style-type: none"> Solving simple equations Solving multi-step equations Solve equations with brackets Solve equations with unknowns on both sides. 	<p>Sequences</p> <ul style="list-style-type: none"> Identify different types of sequences Find the Nth term of a linear sequence Write a sequence, given the Nth term Show a linear sequence graphically <p>Straight-line graphs</p> <ul style="list-style-type: none"> Interpret Coordinates Horizontal/vertical lines Applying straight-lines as mirror lines for reflection $Y=mx+c$

Subject Vocabulary	Highest Common Factor 'HCF', Lowest common multiple 'LCM', Prime, Significant, Figure, Decimal, Estimate, Metric, Time, Mass, Density, Speed, Mixed Number, Improper, Numerator, Denominator	Coefficient, Brackets, Expression, Term, Equation, Inequality	Nth Term, Linear, Quadratic, Fibonacci, Geometric, x-axis, y-axis, gradient, y-intercept, 'Y=mx+c'
Subject Texts Used			
Cultural Enrichment Opportunities	Estimation relating to real-life, 'Estimate the cost'. Units of measure can be contextualised into real-life situations.	Show how inequalities can be used to show something that may not have an exact value (if a bus is early or late)	How computers use formulae to calculate straight-lines as vectors for visual graphics. Other applications of straight lines. Applications of Linear Equations in Real Life (wittysparks.com)
Learning Behaviours	Students must retrieve knowledge from Year 7 and be resilient with trying more challenging problems to develop their existing knowledge. Peer assessment will feature a lot as they need to be able to solve numerical problems reliably.	High-levels of self-discipline will be needed when new techniques are modelled for the more complicated equations. The introduction of inequalities will require them to compare methods for equations vs inequalities.	Students will need to practice accurate drawing of lines on graphs. They need to show high standards of presentation as they will be indicating gradients and intercept points for lines on the graphs.

Year 8 Curriculum - Spring

Learning Focus	Polygons & Parallel lines	Constructions	Fractions, Percentages and Ratio
Learning Hours Associated	Week 16-17 Approx. 8 hours	Week 18-19 Approx. 7 hours	Week 19-25 Approx. 20 hours
What pupils will know, understand and be able to do.	Polygons & Parallel Lines <ul style="list-style-type: none"> Review Interior/Exterior angles Interior/Exterior angles of regular polygons Solving problems with regular/irregular polygons (including algebraic) Identify alternate & corresponding angles 	Constructions, Loci and Bearings <ul style="list-style-type: none"> Use loci with scale maps Construct bisectors Construct triangles accurately 	FDP (Fractions, Decimals & Percentages) <ul style="list-style-type: none"> Converting with FDP Ordering FDP (positive and negative) Recognise recurring decimals and converting to fractions Percentages of Amounts <ul style="list-style-type: none"> Finding the percentage of an amount (with and without calculators) Calculating growth & decay Calculating reverse percentages

	<ul style="list-style-type: none"> Identify co-interior angles Form and solve equations with parallel lines 		<p>Ratio</p> <ul style="list-style-type: none"> Review simplifying ratio Review sharing a ratio Review ratio in the form 1:n <p>Work with two ratios</p>
Subject Vocabulary	Polygons, triangles, quadrilaterals, pentagon, hexagon, vertex, interior, exterior, sum, supplementary, around a turn, formula,	scale, ratio, loci, measurement, construction, bisect,	Percent, fraction, decimal, equivalent fractions, denominator, numerator, decimal multiplier, growth, profit, loss, population, decay, reverse percentage, place value, sharing and Comparing parts, whole, divide, ratio, simplify, change form, compare, fractions, sum, difference
Subject Texts Used			
Cultural Enrichment Opportunities	<p>Polygons and their interior and exterior angles have many real-life applications, like in construction, bridge trusses, building walls, and even floor tiles.</p> <ol style="list-style-type: none"> Polygons (mathsisfun.com) Polygons in real life Example of Polygons CAT Exam (unacademy.com) 	<p>Sailors and navigators have relied on bearings for centuries to navigate the seas, dating back to ancient times when stars were used for navigation. The Egyptians also used bearings to construct the pyramids, utilizing a system of ropes and pulleys to move the large stones into place.</p>	<p>Visual aids like pie charts and bar graphs can help students convert between fractions, decimals, and percentages when dealing with real-life measurements, sporting events and finances.</p> <p>Learn how to convert fractions to percentages – KS3 Maths – BBC Bitesize - BBC Bitesize</p> <p>Ratios have rich cultural links in many real-life contexts such as betting odds, currency conversions, salary division, grocery price comparisons, recipe measurements, travel time estimation, and comparing group sizes. Story of maths is applying it in different contexts in examples and videos.</p> <p>Ratios – Explanation & Examples (storyofmathematics.com)</p> <p>Application of percentages in population growth and decay and finding original value of a sales item.</p> <ol style="list-style-type: none"> Reverse Percentages - GCSE Maths - Steps, Examples & Worksheet (thirdspacelearning.com) How To Calculate Reverse Percentages: A Simple Guide (practiceaptitudetests.com) <p>Ratios have rich cultural links in many real-life contexts such as betting odds, currency conversions, salary division, grocery price comparisons, recipe measurements, travel time estimation, and comparing group sizes.</p>

			<p>Story of maths is applying it in different contexts in examples and videos.</p> <p>Ratios – Explanation & Examples (storyofmathematics.com)</p>
Learning Behaviours	<p>Reflective and resilient in learning new skills as students will learn a new concept with regard to angles in parallel lines. They are expected to enquire and challenging multi-step problems with this new knowledge and apply new sets of keywords to justify their reasoning.</p>	<p>Show resilience and determination as it is easy to make mistakes with this learning focus. Regular practice is important in developing these skills reliably.</p>	<p>Competence and independence should be seen as FDP is revisited from Year 7. They should now be expected to convert simple values reliably. Dealing with recurring decimals will be a new and challenging concept, class discussion and oracy skills will be crucial.</p> <p>As was the case in autumn of Year 7, Literacy comprehension is crucial as many ratio problems are contextual and written in several sentences. Students will be expected to independently comprehend information and understand what operations are needed involving the ratio to solve the problem.</p>

Year 8 Curriculum - Summer		
Learning Focus	Using Data	Area of 2D & 3D Shape
Learning Hours Associated	<p>Week 26-29</p> <p>Approx. 14 hours</p>	<p>Week 29-35</p> <p>Approx. 23 hours</p>
<p>What pupils will know, understand and be able to do.</p>	<p>Representing & Interpreting Data</p> <ul style="list-style-type: none"> • Draw & Interpret Bar Charts • Drawing & Interpreting Scatter Graphs • Interpreting Pictograms • Interpreting & Drawing Pie Charts <p>Finding averages from data</p> <ul style="list-style-type: none"> • Review Mean, median and mode • Quantitative vs qualitative data • Find the mode on different charts or graphs • Find averages on frequency tables 	<p>Circumference of Circles</p> <ul style="list-style-type: none"> • Identifying features of a circle • Find the circumference of a circle using Pi (and reversing the process) • Perimeters of semi-circles and sectors • Perimeter of composite shapes with circular features <p>Area of 2D Shape</p> <ul style="list-style-type: none"> • Area of triangles, trapezia • Area of circles, semi-circles and sectors • Area of concentric circles • Compound area (including circular features) <p>3D Shape</p> <ul style="list-style-type: none"> • Identify names and features of 3D shapes (including Nets) • Volume of cubes, cuboids, triangular prisms, trapezia etc • Volume of compound (L-shape) prism

		<ul style="list-style-type: none"> • Volume of pyramids • Comparing volume and surface area
Subject Vocabulary	Data, values, frequencies, tally, charts, bars, lines, graphs, pie charts, pictograms, scatter graph, proportions, angles, averages, mean, median, mode, range	2-D shapes, triangles, quadrilaterals, circles, circumference, compound shapes, dimensions, 3-D shapes, plane, side and front view, nets, vertex, edges, faces, volume, space, cube, cuboid, prisms, cylinder, compound prisms, pyramids, cone, sphere, surface area
Subject Texts Used		
Cultural Enrichment Opportunities	<p>How data is visual in our real life:</p> <p>18 Surprising Data Visualizations in Your Everyday Life - Infogram</p>	<p>As a gardener, you may need to calculate the garden bed's area to determine the amount of soil required to cover it. In the same way, as an architect or engineer, you may need to calculate the area of a room or building to determine the amount of paint or flooring needed.</p> <p>Give Real-life examples of 3D objects like balls, dice, and for volume an amount of substance these shapes can hold for example paint.</p> <p>3D Geometry Shapes - Definition, Properties, Types, Formulas (cuemath.com)</p>
Learning Behaviours	Students need to show care and attention to detail in their presentation as representing data in different visual formats demands accuracy. Practice is crucial for these skills to develop.	Students will need to compare features of different shapes and categorise appropriately. Peer feedback as well as feedback from the teacher will help greatly. This is particularly true when dealing with Pi for shapes with circular features.

Year 9 Curriculum - Autumn			
Learning Focus	Numerical Skills	Consolidating Algebra	Fraction Calculations
Learning Hours Associated	Week 1 - 7 Approx. 23 hours	Week 8 - 12 Approx. 18 hours	Week 13 - 15 Approx. 9 hours

<p>What pupils will know, understand and be able to do.</p>	<p>Consolidating Numerical Knowledge</p> <ul style="list-style-type: none"> • Lowest Common Multiple • Highest Common Factor • Prime Factors • Calculations involving decimals and negatives <p>Laws of Indices</p> <ul style="list-style-type: none"> • Multiplying and dividing with powers • Brackets and powers of zero • Dealing with negative powers • Calculating in powers of 10 <p>Standard Form</p> <ul style="list-style-type: none"> • Convert between standard form and ordinary numbers • Order numbers in standard form • Multiply and divide in standard form 	<p>Expanding & Factorising</p> <ul style="list-style-type: none"> • Simplifying Terms involving Indices • Expanding & Factorising Single Brackets • Expanding Double Brackets • Factorising Quadratics <p>Substitution</p> <ul style="list-style-type: none"> • Rearranging expressions & Formulae • Substitute into simple expressions and Formulae • Substitute with powers, negative values • Substitute into Scientific Formulae 	<p>Fractions of amounts</p> <ul style="list-style-type: none"> • Calculating with fractions • Convert between fractions and decimals • Work with fractions and Ratios • Find the fraction of an amount • Compare fractions/percentages of an amount
<p>Subject Vocabulary</p>	<p>Highest Common Factor 'HCF', Lowest common multiple 'LCM', Prime, Decimal, Indices, Power, Coefficient, Standard Form</p>	<p>Index notation, Indices, Powers, Roots Integer, Coefficient, Brackets, Factorise, Quadratic, Substitute, Expression Formula, Formulae</p>	<p>Fraction, Denominator, Numerator, Vinculum</p>
<p>Subject Texts Used</p>			
<p>Cultural Enrichment Opportunities</p>	<p>Standard Form lessons can easily make reference to science as the number system is used for calculating things that are either very small (mass of an atom) or very large (the width of a galaxy)</p>	<p>Relates to science, applies to skills involving calculating with formulae.</p>	<p>Link to real life contexts such as 'half of a class', 'a quarter of a bag of sweets'.</p>
<p>Learning Behaviours</p>	<p>Students will need to take note of new and often complicated laws of indices. They need to be confident in communicating their level of understanding and show resilience when practicing to develop their new knowledge.</p>	<p>Students will need to reflect and compare when rearranging equations as the this is new knowledge they haven't encountered but uses a similar methodology to solving an equation, there is a risk that the two can be confused.</p>	<p>Students will need to reflect and link their knowledge of fractions as well as ratio. Care needs to be taken when comparing concepts as some features will be the same and some feature will be different.</p>

Year 9 Curriculum - Spring

Learning Focus	Percentages and Proportion	Units of measure	Probability	Inequalities
Learning Hours Associated	Week 16 - 19 Approx. 15 hours	Week 18 - 19 Approx. 8 hours	Week 20 - 21 Approx. 8 hours	Week 22 - 23 Approx. 7 hours
What pupils will know, understand and be able to do.	<p>Percentages with calculators</p> <ul style="list-style-type: none"> Percentages of an amount Percentage increase and decrease Reverse percentages Comparing quantities using percentages <p>Proportional Reasoning</p> <ul style="list-style-type: none"> Explore best value when purchasing products Work with currency conversions (including on a graph) Direct vs inverse proportion 	<p>Fractions of amounts</p> <ul style="list-style-type: none"> Convert between metric units (linear) Convert units for area and volume Calculate volume, mass and density Calculate speed, distance and time Interpret Velocity-time graphs 	<p>Probability</p> <ul style="list-style-type: none"> Use systematic listing and sample spaces Use a probability scale Interpret probabilities from Venn Diagrams and Two-way tables Use frequency trees to calculate outcomes from multiple events 	<p>Inequalities Solve</p> <ul style="list-style-type: none"> Show inequalities on a number line Solve one and two step inequalities Solve inequalities with unknowns on both sides
Subject Vocabulary	Percent, fraction, decimal, equivalent fractions, denominator, numerator, decimal multiplier, growth, profit, loss, population, decay, reverse percentage, ratio, quantities, recipes	Units, conversion, squares and cubes, volume, surface area, speed, distance, time, velocity, force	Data, listing, tables, outcomes, tree diagram, probability, chance, likelihood, certain,	Number line, integers, inequality, equation, less than, greater than
Subject Texts Used				
Cultural Enrichment Opportunities	<p>Application of percentages in population growth and decay and finding original value of a sales item.</p> <p>Reverse Percentages - GCSE Maths - Steps, Examples & Worksheet (thirdspacelearning.com)</p> <p>Use of ratio and proportions in real-life:</p>	<p>Speed distance and time problem solving in real-life context:</p> <ol style="list-style-type: none"> Speed and Velocity (mathsisfun.com) Distance, Time and Speed Word Problems GMAT GRE Maths - MBA Crystal Ball 	<p>Probability plays a crucial role in weather forecasting; it helps to forecast the possibility of rain or snow. In finance, also to assess the risk associated with an investment. In medicine, it</p>	<p>Use of inequalities in budgeting, scheduling, and resource allocation. Inequalities can help you determine what you can afford with a \$100 budget. They can</p>

	How to Use Ratios & Proportions in Real Life Sciencing		helps to determine the chances of a patient developing a particular disease.	also assist in scheduling appointments by determining the maximum number you can schedule.
Learning Behaviours	Students should apply practical methodology with their calculators to solve problems with percentages. Independently comprehending written information into operations using their calculators.	Students should regularly refer and demonstrate real-life examples of measurement as well as applying knowledge of converting independently and reliably.	Literacy skills will be crucial in comprehending concise information on an outcome. One word changing such as 'and' or 'or' can completely change an outcome.	Students should be able to define the difference between an inequality and an equation.

Year 9 Curriculum - Summer

Learning Focus	Straight-line graphs 2	Developing angle knowledge	Pythagoras and Trigonometry	Transformations
Learning Hours Associated	Week 26-28 Approx. 9 hours	Week 29-30 Approx. 7 hours	Week 31-32 Approx. 7 hours	Week 32-34 Approx. 10 hours
What pupils will know, understand and be able to do.	Straight-line graphs <ul style="list-style-type: none"> Review vertical and horizontal line equations Use $y=mx+c$ to draw and interpret straight-lines on graphs 	Polygon & Parallel Line Interactions <ul style="list-style-type: none"> Review Interior/Exterior Angles in polygons Investigate why some polygons tessellate Explore iterations between multiple polygons and/or parallel lines 	Pythagoras <ul style="list-style-type: none"> Use Pythagoras to find the hypotenuse Use Pythagoras to find a missing shorter side Explore Pythagoras with real-life context <ul style="list-style-type: none"> Learn trigonometric ratios (demonstrate with right-angled triangle within a circle) Solve simple trigonometric ratio problems using proportion 	Transformations <ul style="list-style-type: none"> Calculate with vectors and apply to translations Reflect and rotate shapes in the cartesian plane Draw and interpret enlargements
Subject Vocabulary	Sequence, pattern, first term, nth term, difference,	Polygons, parallel lines, interior, exterior, sides, tessellation,	Triangles, right-angled, sides, Pythagoras, problem-solving, vectors, direction, graphs,	Horizontal, vertical, translate, vector, reflection, rotation, cartesian plane, centre, enlargement, scale-factor

		investigation, exploration		
Subject Texts Used				
Cultural Enrichment Opportunities	The application of mathematical sequences in cultural situations serves to provoke students' curiosity about indigenous knowledge. (PDF) How to Learning Arithmetic Sequences with Project-Based Learning in Terrace Culture? (researchgate.net)	Create a story to give context to build up polygon formulas: Polygons – WJEC - Video - GCSE Maths - BBC Bitesize (PDF) Tessellation in Architecture from Past to Present (researchgate.net) Create designs and tessellations with hands-on activity. How to Make a Translation Tessellation: 8 Steps (with Pictures) (wikihow.com) video	In architecture, engineering and physics, Pythagoras' theorem helps ensure square building corners, compute cable lengths for bridges, determine vector magnitudes, and calculate the distance between stars.	In computer graphics, transformations are used to rotate, scale, and translate objects on the screen, or transform robots. It is also used to create 3D models of the buildings by the architects.
Learning Behaviours	Students should now be gaining confidence when working with sequences independently. But they will need to reflect on how linear sequences link straight-lines on graphs, discussions as a class and with peers will be important for this.	Students will need to visually explore and apply their knowledge of polygons and angles to understand tessellation. High standards of reflection and discussion will be needed.	Taking care in following a methodology demonstrated is important as Pythagora's Theorem is a new concept. Students should be confident to question to deepen their understanding of this. The same will be true when introducing trigonometric ratios.	Students should reflect on prior learning and be expected to work with a higher level of independence and accuracy with transformations. They also need to be confident in identifying transformations using appropriate keywords.

For Information:

Autumn Term – 15 Weeks (Week 1 – 15)

Spring Term – 11 Weeks (Week 16 – 26)

Summer Term – 13 Weeks (Week 27-39)

Maths Curriculum Time – 7 hours per fortnight (2 Week Timetable)