



<Mathematics>: SPECIFIC LEARNING INTENTIONS

YEAR GROUP:	Year 9 Advanced+-- 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Standard Form	Topic/Unit: Angles in Polygons	Topic/Unit: Using Index Laws	Topic/Unit: Surds & Rationalising	Topic/Unit: Interpret Data	Topic/Unit: Solving Quadratic Eqn
Granular learning intentions/success criteria (What will pupils know, be able to do and understand)	Learning Intentions Pupils will know how to: Convert large and small numbers into standard form and vice versa. Correct numbers written in incorrect standard form. Add and subtract numbers in standard form. Multiply and divide numbers in standard form. Interpret a calculator display using standard form and know how to enter numbers in standard form. Solve a range of problems using standard form representation. Success Criteria Pupils will be able to: Write 51080 in standard form. Write 3.74×10^{-6} as an ordinary number. Convert a 'near miss', or any number, into standard form; e.g. 23×107. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Use the sum of the exterior angles of any polygon is 360°. Use the sum of the interior angle and the exterior angle is 180° Use the sum of the interior angles of a triangle to derive the sum of interior angles in any polygon Use the sum of the interior angles of an n-sided polygon (regular and irregular) Find the size of each interior angle, or the size of each exterior angle, or the number of sides of a regular polygon, or use the sum of angles of irregular polygons in order to solve problems Use the side/angle properties of compound shapes made up of triangles, lines and quadrilaterals, including solving angle and symmetry problems for shapes in the first quadrant, more complex problems and using algebra Use angle facts to demonstrate how shapes would 'fit together', and work out interior angles of shapes in a pattern. Success Criteria Pupils will be able to: Given the size of its exterior angle, how many sides does the polygon have? Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Find the value of calculations using indices including positive, fractional and negative indices, and recognise the notation of $n^0 = 1$ and $n^{-1} = \frac{1}{n}$ for positive integers n as well as, $= \sqrt[n]{n}$ and $= 3\sqrt[n]{n}$ for any positive number n Understand that the inverse operation of raising a positive number to a power n is raising the result of this operation to the power Use index laws to simplify and calculate the value of numerical expressions involving multiplication and division of integer powers, fractional and negative powers, and powers of a power Solve problems using index laws, including writing one number as a power of another and using this to simplify Use calculator functions, including $+$, $-$, $\times$, $\div$, x^2, x^3, $\sqrt{x}$, $3\sqrt{x}$, x^y, $\frac{1}{x}$, ANS, brackets, S-D(casio), sign change Success Criteria Pupils will be able to: Write 8^3 as a power of 2 Write as a power of 3 the expression 27^2. Work out the value of n in $40 = 5 \times 2^n$ Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Understand surd notation, including on a calculator (also that a calculator gives answer to $\sqrt{8}$ as $2\sqrt{2}$). Simplify any surd and collect 'like terms'. Manipulate expressions involving surds, including single brackets, double brackets, collecting 'like' terms and simplifying, including problem solving. Success Criteria Pupils will be able to: Simplify $\sqrt{8}$. Rationalise: Collect the like terms $3 + \sqrt{2} - 6\sqrt{2} + 6$ Expand a single and double brackets involving surds $\sqrt{3}(2 + \sqrt{3})$, $(2 - \sqrt{3})^2$ Explain the difference between rational and irrational numbers. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Design and use two-way tables for discrete and grouped data Use information provided to complete a two-way table Know which charts to use for different types of data sets (discrete and continuous) Produce and interpret composite bar chart Produce and interpret comparative and dual bar charts Recognise simple patterns, characteristics relationships in bar charts Produce and interpret pie charts: find the mode and the frequency represented by each sector Compare data from pie charts that represent different-sized samples Produce and interpret stem and leaf (including back-to-back) Interpret and find the median, mode and range from stem and leaf diagrams Compare the mean, median, mode and range (as appropriate) of two distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf Success Criteria Pupils will be able to: Explain why same-size sectors on a pie chart with different data sets do not represent the same number of items, but do represent the same proportion Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Factorise quadratic expressions in the form $ax^2 + bx + c$, where a is any integer value Solve quadratic equations by factorisation, including equations that need rearranging Solve quadratic equations by using the quadratic formula Solve quadratic equations by completing the square, equations that need rearranging Set up and solve quadratic equations Success Criteria Pupils will be able to: Solve $3x^2 + 4 = 100$. Know that the quadratic formula can be used to solve all quadratic equations and often provides a more efficient method than factorising or completing the square. Have an understanding of solutions that can be written in surd form. Factorise $6x^2 - 7x + 1$ Learning Check - End-of-topic Quiz



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	Topic/Unit: Sectors and Arcs	Topic/Unit: Venn & Tree Diagrams	Topic/Unit: Repeated % Change	Topic/Unit: Trigonometry	Topic/Unit:	Topic/Unit: Solving & Graphing Inequalities
	Learning Intentions Pupils will know how to: Calculate arc lengths, angles and areas of sectors of circles. Success Criteria Pupils will be able to: Work out areas of sectors, lengths of arcs and associated angles. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Work out probabilities from Venn diagrams to represent real-life situations and also 'abstract' sets of numbers/values Use union, intersection, complement, empty set, curly brackets and universal set notation Understand conditional probabilities and decide if two events are independent Draw a probability tree diagram based on given information and use this to find probability and expected number of outcome. Understand selection with or without replacement Calculate the probability of independent and dependent combined events Use a tree diagram to calculate conditional probability Use a Venn diagram to calculate conditional probability Success Criteria Pupils will be able to: If the probability of outcomes are x, $2x$, $4x$, $3x$, calculate x. Draw a Venn diagram of students studying French, German or both, and then calculate the probability that a student studies French	Learning Intentions Pupils will know how to: Understand that fractions are more accurate in calculations than rounded percentage or decimal equivalents, and choose fractions, decimals or percentages appropriately for calculations Work out the multiplier for repeated proportional change as a single decimal number Represent repeated proportional change using a multiplier raised to a power, use this to solve problems involving compound interest and depreciation Success Criteria Pupils will be able to: Find the interest earned on an investment of £2,000 over 3 years with an interest rate of 2.4% per annum Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures Use the trigonometric ratios to solve 2D problems Find angles of elevation and depression Know the exact values of $\sin \theta$ and $\cos \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90°; know the exact value of $\tan \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ$ and 60° Success Criteria Pupils will be able to: Justify when to use Pythagoras' Theorem and when to use trigonometry. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Prepare for end-of-year assessment. Success Criteria Pupils will be able to:	Learning Intentions Pupils will know how to: Use the correct notation to show inclusive and exclusive inequalities 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 Solve linear inequalities in two variables graphically Show the solution set of several inequalities in two variables on a graph Success Criteria Pupils will be able to: Use inequality symbols correctly to compare numbers Show the solution set of several inequalities in two variables on a graph 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 Solve linear inequalities in two variables graphically Learning Check - End-of-topic Quiz



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		given that they also study German. Learning Check - End-of-topic Quiz				
	Topic/Unit: Geometric Sequences	Topic/Unit: Rearrange Formulae	Topic/Unit: Recurring Decimals	Topic/Unit: Volume/Surface Area	Topic/Unit:	Topic/Unit: Start Direct & Inverse Proportion
	Learning Intentions Pupils will know how to: Use finite/infinite and ascending/descending to describe sequences Distinguish between arithmetic and geometric sequences Recognise and use simple geometric progressions (n where n is an integer, and r is a rational number > 0 or a surd) Continue geometric progression and find term to term rule, including negative, fraction and decimal terms Solve problems involving sequences from real life situations Success Criteria Pupils will be able to: Given a sequence, 'What is the first term greater than 70?' Be able to solve problems involving sequences from real-life situations, such as: ·1 grain of rice on the first square, 2 grains on the second, 4 grains on the third, etc. ·A person saves £10 one week, £20 the next, £30 the next, etc. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Understand the $\neq$ symbol (not equal), e.g. $6x + 4 \neq 3(x + 2)$, and introduce identity $\equiv$ sign Change the subject of a simple formula, i.e. linear one-step, such as $x = 4y$ Change the subject of a formula, including cases where the subject is on both sides of the original formula, or involving fractions and small powers of the subject Simple proofs and use of $\equiv$ in "show that" style questions; know the difference between an equation and an identity Success Criteria Pupils will be able to: Know the meaning of the 'subject' of a formula Change the subject of a formula when one step is required Change the subject of a formula when two steps are required Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: By writing the denominator in terms of its prime factors, decide whether fractions can be converted to recurring or terminating decimals Convert a fraction to a recurring decimal Convert a recurring decimal to a fraction Find the reciprocal of an integer, decimal or fraction Success Criteria Pupils will be able to: Write $4/99$ as a decimal Convert 0.7 recurring to a fraction Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Find the surface area of prisms using the formulae for triangles and rectangles, and other (simple) shapes with and without a diagram Recall and use the formula for the volume of a cuboid or prism made from composite 3D solids using a variety of metric measures Estimate surface area and volume by rounding measurements to 1 significant figure to check reasonableness of answers Find the volume and surface area of a cylinder Recall and use the formula for volume of pyramid Find the surface area of a pyramid Use the formulae for volume and surface area of spheres and cones Use volume to solve problems Success Criteria Pupils will be able to: Work out the length given the area cross-section and volume of a cuboid. Understand that answers given in term of π are more accurate Given two solids with the same volume and the dimensions of one, write and solve an equation in terms of π to find the dimensions of the other, e.g. a	Learning Intentions Pupils will know how to: Identify direct proportion from a table of values, by comparing ratios of values Calculate an unknown quantity from quantities that vary in direct proportion Use $y = kx$ to solve direct proportion problems, including questions where students find k, and then use k to find another value Recognise and interpret graphs showing direct proportion and use a graph to find the value of k in $y = kx$ Write statements of proportionality for quantities proportional to the square, cube or other power of another quantity Identify direct proportion from a table of values, by comparing ratios of values, for x squared and x cubed relationships Set up and use equations to solve word and other problems involving direct proportion Calculate an unknown quantity from quantities that vary in inverse proportion Recognise and interpret graphs showing inverse proportion	



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				sphere is melted down to make ball bearings of a given radius, how many will it make? Learning Check - End-of-topic Quiz		Solve problems involving inverse proportionality including solving problems using graphs by plotting and reading values from graphs Solve problems involving a mixture of direct and inverse proportion Set up and use equations to solve word and other problems involving inverse proportion, including relating algebraic solutions to graphical representation of the equations Success Criteria Pupils will be able to: Solve word problems involving direct and inverse proportion Understand direct proportion: as x increases, y increases Understand inverse proportion: as x increases, y decreases Understand that when two quantities are in direct proportion, the ratio between them remains constant Know the symbol for 'is proportional to'. Learning Check - End-of-topic Quiz
	Topic/Unit: Collecting Data	Topic/Unit:	Topic/Unit: Solving Simultaneous Equations	Topic/Unit:	Topic/Unit:	Topic/Unit:
	Learning Intentions Pupils will know how to: Specify the problem and plan: decide what data to collect and what analysis is needed understand primary and secondary data sources Understand discrete and continuous, qualitative and quantitative Understand what is meant by a sample and a population Identify possible sources of bias and plan to minimise it Write questions to eliminate bias, and understand how the timing and location of a survey can ensure a sample is representative		Learning Intentions Pupils will know how to: Solve exactly, by elimination of an unknown, two simultaneous equations in two unknowns (linear / linear), including where both need multiplying. Set up and solve a pair of linear simultaneous equations in two variables, including to represent a situation. Interpret the solution in the context of the problem Interpret the solution in the context of the problem Success Criteria Pupils will be able to:			



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	Understand how different sample sizes may affect the reliability of conclusions drawn Understand the process and purpose of stratified sampling and calculate the size of different samples Success Criteria Pupils will be able to: Explain why a sample may not be representative of a whole population. Carry out their own statistical investigation and justify how sources of bias have been eliminated. Learning Check - End-of-topic Quiz		Interpret a pair of simultaneous equations as a pair of straight lines and their solution as the point of intersection. Learning Check - End-of-topic Quiz			
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YEAR GROUP:	Year 9 Advanced – 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Standard Form	Topic/Unit: Stats Collecting Data	Topic/Unit: Rearrange Formulae	Topic/Unit: Simultaneous Equation	Topic/Unit: Volume & Surface Area	Topic/Unit: Quadratic Equations
Granular learning intentions/success criteria (What will pupils know, be able to do and understand)	Learning Intentions Pupils will know how to: Convert large and small numbers into standard form and vice versa. Correct numbers written in incorrect standard form Add and subtract numbers in standard form Multiply and divide numbers in standard form Interpret a calculator display using standard form and know how to enter numbers in standard form Solve a range of problems using standard form representation Success Criteria Pupils will be able to: Write 51080 in standard form. Write 3.74×10^{-6} as an ordinary number. Convert a 'near miss', or any number, into standard form; e.g. 23×10^7.	Learning Intentions Pupils will know how to: Specify the problem and plan: decide what data to collect and what analysis is needed understand primary and secondary data sources understand discrete and continuous, qualitative and quantitative Understand what is meant by a sample and a population Identify possible sources of bias and plan to minimise it Write questions to eliminate bias, and understand how the timing and location of a survey can ensure a sample is representative Understand how different sample sizes may affect the reliability of conclusions drawn Understand the process and purpose of stratified sampling and calculate the size of different samples Success Criteria Pupils will be able to:	Learning Intentions Pupils will know how to: Understand the $\neq$ symbol (not equal), e.g. $6x + 4 \neq 3(x + 2)$, and introduce identity $\equiv$ sign Change the subject of a simple formula, i.e. linear one-step, such as $x = 4y$ Change the subject of a formula, including cases where the subject is on both sides of the original formula, or involving fractions and small powers of the subject Simple proofs and use of $\equiv$ in "show that" style questions; know the difference between an equation and an identity Success Criteria Pupils will be able to: Know the meaning of the 'subject' of a formula Change the subject of a formula when one step is required Change the subject of a formula when two steps are required	Learning Intentions Pupils will know how to: Solve exactly, by elimination of an unknown, two simultaneous equations in two unknowns (linear / linear), including where both need multiplying. Set up and solve a pair of linear simultaneous equations in two variables, including to represent a situation. Interpret the solution in the context of the problem. Success Criteria Pupils will be able to: Interpret a pair of simultaneous equations as a pair of straight lines and their solution as the point of intersection. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Find the surface area of prisms using the formulae for triangles and rectangles, and other (simple) shapes with and without a diagram Recall and use the formula for the volume of a cuboid or prism made from composite 3D solids using a variety of metric measures Estimate surface area and volume by rounding measurements to 1 significant figure to check reasonableness of answers Find the volume and surface area of a cylinder Recall and use the formula for volume of pyramid Find the surface area of a pyramid Use the formulae for volume and surface area of spheres and cones Use volume to solve problems Success Criteria	Learning Intentions Pupils will know how to: Factorise quadratic expressions in the form $x^2 + bx + c$, where a is any integer value. Some pupils may be able to factorise in the form $ax^2 + bx + c$ Solve quadratic equations by factorisation, including equations that need basic rearranging Solve quadratic equations by using the quadratic formula Set up and solve quadratic equations Success Criteria Pupils will be able to: Solve $3x^2 + 4 = 100$. Know that the quadratic formula can be used to solve all quadratic equations and often provides a more efficient method than factorising. Learning Check - End-of-topic Quiz



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	Learning Check - End-of-topic Quiz	Explain why a sample may not be representative of a whole population. Carry out their own statistical investigation and justify how sources of bias have been eliminated. Learning Check - End-of-topic Quiz	Learning Check - End-of-topic Quiz		Pupils will be able to: Work out the length given the area cross-section and volume of a cuboid Understand that answers given in term of π are more accurate Given two solids with the same volume and the dimensions of one, write and solve an equation in terms of π to find the dimensions of the other, e.g. a sphere is melted down to make ball bearings of a given radius, how many will it make? Learning Check - End-of-topic Quiz	
	Topic/Unit: Circles, Arcs & Sectors Learning Intentions Pupils will know how to: Calculate arc lengths, angles and areas of sectors of circles. Calculate perimeters and areas of composite shapes made from circles and parts of circles (including semicircles, quarter-circles, combinations of these and also incorporating other polygons) Form equations involving shapes including circles and solve these equations Success Criteria Pupils will be able to: Find the arc length/ area of a sector and find perimeter/area of circular shapes. Learning Check - End-of-topic Quiz	Topic/Unit: Angles in Polygons Learning Intentions Pupils will know how to: Understand and use the angle properties of parallel lines and find missing angles using the properties of corresponding, co-interior and alternate angles, giving reasons Use the sum of the exterior angles of any polygon is 360° Use the sum of the interior angle and the exterior angle is 180° Use the sum of the interior angles of a triangle to derive the sum of interior angles in any polygon Use the sum of the interior angles of an n-sided polygon (regular and irregular) Find the size of each interior angle, or the size of each exterior angle, or the number of sides of a regular polygon, or use the sum of angles of irregular polygons in order to solve problems Use the side/angle properties of compound shapes made up of triangles, lines and quadrilaterals,	Topic/Unit: Using Index Laws Learning Intentions Pupils will know how to: Find the value of calculations using indices including positive, fractional and negative indices, and recognise the notation of $n^0 = 1$ and $n^{-1} = 1/n$ for positive integers as well as, $n^{1/2} = \sqrt{n}$ and $n^{1/3} = \sqrt[3]{n}$ for any positive number n Understand that the inverse operation of raising a positive number to a power n is raising the result of this operation to the power Use index laws to simplify and calculate the value of numerical expressions involving multiplication and division of integer powers, fractional and negative powers, and powers of a power Solve problems using index laws, including writing one number as a power of another and using this to simplify Use calculator functions, including $+$, $-$, $\times$, $\div$, x^2, x^3, $\sqrt{x}$, $\sqrt[3]{x}$, $x \cdot y$, $\div$, ANS, brackets, S-D(casio), sign change Success Criteria Pupils will be able to:	Topic/Unit: Surds & Rationalising Learning Intentions Pupils will know how to: Understand surd notation, including on a calculator (also that a calculator gives answer to $\sqrt{8}$ as $2\sqrt{2}$) Simplify any surd and collect 'like terms' Manipulate expressions involving surds, including single brackets, double brackets, collecting 'like' terms and simplifying, including problem solving Success Criteria Pupils will be able to: Simplify $\sqrt{8}$. Rationalise: Collect the like terms $3+\sqrt{2}$, $-6\sqrt{2} + 6$ Expand a single and double brackets involving surds $\sqrt{3}(2+\sqrt{3})$, $(2-\sqrt{3})^2$ Explain the difference between rational and irrational numbers. Learning Check - End-of-topic Quiz	Topic/Unit: Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to: Prepare for end-of-year exams.	Topic/Unit: Represent Data Learning Intentions Pupils will know how to: Design and use two-way tables for discrete and grouped data Use information provided to complete a two-way table Know which charts to use for different types of data sets (discrete and continuous) Produce and interpret composite bar chart Produce and interpret comparative and dual bar charts Recognise simple patterns, characteristics relationships in bar charts Produce and interpret pie charts: find the mode and the frequency represented by each sector Compare data from pie charts that represent different-sized samples Produce and interpret stem and leaf (including back-to-back)



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		including solving angle and symmetry problems for shapes in the first quadrant, more complex problems and using algebra Use angle facts to demonstrate how shapes would 'fit together', and work out interior angles of shapes in a pattern. Success Criteria Pupils will be able to: Given the size of its exterior angle, how many sides does the polygon have? Learning Check - End-of-topic Quiz	Write 8^3 as a power of 2 Write as a power of 3 the expression $9^2 \times 9^x = 9^9$ Work out the value of n in $40 = 5 \times 2^n$ Learning Check - End-of-topic Quiz			Interpret and find the median, mode and range from stem and leaf diagrams Compare the mean, median, mode and range (as appropriate) of two distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf Success Criteria Pupils will be able to: Explain why same-size sectors on a pie chart with different data sets do not represent the same number of items, but do represent the same proportion Learning Check - End-of-topic Quiz
	Topic/Unit: Geometric Sequences	Topic/Unit: Set Notation & Tree diagrams	Topic/Unit: Repeated Percentage change & reverse percentages	Topic/Unit: Trigonometry	Topic/Unit:	Topic/Unit: Time Series
	Learning Intentions Pupils will know how to: Use finite/infinite and ascending/descending to describe sequences Distinguish between arithmetic and geometric sequences Recognise and use simple geometric progressions (r where n is an integer, and r is a rational number > 0 but not a surd) Continue geometric progression and find term to term rule, including negative, fraction and decimal terms Solve problems involving sequences from real life situations Success Criteria Pupils will be able to: Given a sequence, 'What is the first term greater than 70?' Be able to solve problems involving sequences from real-life situations, such as: 1 grain of rice on the first square, 2 grains on the second, 4 grains on the third, etc. A persons saves £10 one week, £20 the next, £30 the next, etc. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Work out probabilities from Venn diagrams to represent real-life situations and also 'abstract' sets of numbers/values Use union, intersection, complement, empty set, curly brackets and universal set notation Understand conditional probabilities and decide if two events are independent Draw a probability tree diagram based on given information, and use this to find probability and expected number of outcomes Understand selection with or without replacement Calculate the probability of independent and dependent combined events Use a tree diagram to calculate conditional probability Use a Venn diagram to calculate conditional probability Understand and use experimental and theoretical measures of probability, including relative frequency to include outcomes using dice, spinners, coins, etc	Learning Intentions Pupils will know how to: Understand that fractions are more accurate in calculations than rounded percentage or decimal equivalents, and choose fractions, decimals or percentages appropriately for calculations Work out the multiplier for repeated proportional change as a single decimal number Represent repeated proportional change using a multiplier raised to a power, use this to solve problems involving compound interest and depreciation Find the original amount given the final amount after a percentage increase or decrease (reverse percentages), including VAT Use calculators for reverse percentage calculations by doing an appropriate division Describe percentage increase/decrease with fractions, e.g. 150% increase means times as big Success Criteria Pupils will be able to: Find the interest earned on an investment of £2,000 over 3 years with an interest rate of 2.4% per annum Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures Use the trigonometric ratios to solve 2D problems Find angles of elevation and depression Know the exact values of sin θ and cos θ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90°; know the exact value of tan θ for $\theta = 0^\circ, 30^\circ, 45^\circ$ and 60° Success Criteria Pupils will be able to: Justify when to use Pythagoras' Theorem and when to use trigonometry. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to: Produce line graphs/time series graphs: read off frequency values, calculate total population, find greatest and least values Construct and interpret time-series graphs, comment on trends Compare the mean and range of two distributions, or median or mode as appropriate Recognise simple patterns, characteristics relationships in line graphs Success Criteria Pupils will be able to: Use a time-series data graph to make a prediction about a future value. Make comparisons between two data sets Learning Check - End-of-topic Quiz	



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		Estimate the number of times an event will occur, given the probability and the number of trials Compare experimental data and theoretical probabilities and compare relative frequencies from samples of different sizes Success Criteria Pupils will be able to: If the probability of outcomes are x, $2x$, $4x$, $3x$, calculate x. Draw a Venn diagram of students studying French, German or both, and then calculate the probability that a student studies French given that they also study German. Learning Check - End-of-topic Quiz				
			<u>Topic/Unit: Recurring Decimals</u> Learning Intentions Pupils will know how to: By writing the denominator in terms of its prime factors, decide whether fractions can be converted to recurring or terminating decimals Convert a fraction to a recurring decimal Convert a recurring decimal to a fraction Find the reciprocal of an integer, decimal or fraction Success Criteria Pupils will be able to: Write $\frac{4}{99}$ as a decimal Convert 0.7 recurring to a fraction Learning Check - End-of-topic Quiz			



YEAR GROUP:	Year 9 Core+ – 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Indices & Standard Form	Topic/Unit: Statistics – Collecting Data	Topic/Unit: Real - life Percentages and Multipliers	Topic/Unit: Pythagoras' Theorem	Topic/Unit: Ratio in context & problem solving	Topic/Unit: 3D Shapes and Volumes
Granular learning intentions/success criteria (What will pupils know, be able to do and understand)	Learning Intentions Pupils will know how to: Use index laws to simplify and calculate the value of numerical expressions involving multiplication and division of integer powers and powers of a power Use index laws to simplify and calculate the value of numerical expressions unit fraction powers Use numbers raised to the power zero, including the zero power of 10 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 Interpret a calculator display using standard form and know how to enter numbers in standard form Success Criteria Pupils will be able to: Write $51\,080$ in standard form. Write 3.74×10^{-6} as an ordinary number. What is 9^0?	Learning Intentions Pupils will know how to: Recognise types of data: primary secondary, quantitative and qualitative Design and use data-collection sheets for grouped, discrete and continuous data, use inequalities for grouped data, and introduce $\leq$ and $\geq$ signs Sort, classify and tabulate data, both discrete and continuous quantitative data, and qualitative data Understand how sources of data may be biased Understand sample and population Explain why a sample may not be representative of a whole population Consider fairness when collecting a sample of data and minimise bias Success Criteria Pupils will be able to: Explain why a sample may not be representative of a population.	Learning Intentions Pupils will know how to: Use percentages in real-life situations, including percentages greater than 100%: Price after VAT (not price before VAT) Value of profit or loss Simple interest Income tax calculations Find a percentage of a quantity, including using a multiplier Use decimals to find quantities Use a multiplier to increase or decrease by a percentage in any scenario where percentages are used Understand the multiplicative nature of percentages as operators Success Criteria Pupils will be able to: Give a decimal value to represent a 15% increase Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Understand, recall and use Pythagoras' Theorem in 2D, including leaving answers in surd form Given 3 sides of a triangle, justify if it is right-angled or not Calculate the length of the hypotenuse in a right-angled triangle, including decimal lengths and a range of units Find the length of a shorter side in a right-angled triangle Apply Pythagoras' Theorem with a triangle drawn on a coordinate grid Calculate the length of a line segment AB given pairs of points Success Criteria Pupils will be able to: Show that a triangle of side lengths 3, 4 and 5cm gives a right angled triangle. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Use a variety of measures in ratio and proportion problems: Currency conversions Rates of pay Best value Success Criteria Pupils will be able to: Exchange between Pound Sterling, Euros, American Dollars and other currencies. Work out which size is the best value for money. Calculate the rate of pay earned if someone work for 8 hours at £6.50 per hour and 4 hours over time at 'time and a half.' Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Identify and name common solids: cube, cuboid, cylinder, prism, pyramid, sphere and cone Recall and use the formula for the volume of a cuboid Find the volume of a prism, including a triangular prism, a cylinder, cube and cuboid. Calculate volumes of right prisms (trapezium prism, parallelogram prism ect) and shapes made from cubes and cuboids (L-shape) Estimate volumes by rounding measurements to 1 significant figure Convert between metric volume measures Convert between metric measures of volume and capacity e.g. $1\text{ml} = 1\text{cm}^3$ Success Criteria Pupils will be able to: Justify whether a certain number of small boxes fit inside a larger box. Calculate the volume of a triangular prism with correct units. Learning Check - End-of-topic Quiz



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	Learning Check - End-of-topic Quiz	Show me an example of a situation where biased data would result. Learning Check - End-of-topic Quiz				
	Topic/Unit: Area	Topic/Unit: Parallel Lines and Polygons	Topic/Unit: Pie Charts	Topic/Unit: Venn Diagrams and Set Notation	Topic/Unit: End-of-Year Assessment	Topic/Unit: Charts and Graphs
	Learning Intentions Pupils will know how to: Find the area of a trapezium and recall the formula Find the area of a parallelogram Recall the definition of a circle Identify, name and draw parts of a circle including tangent, chord, arc, sector and segment Recall and use formulae for the circumference of a circle and the area enclosed by a circle circumference of a circle = $2\pi r$ = πd, area of a circle = πr^2 Find circumferences and areas enclosed by circles Use $\pi \approx 3.142$ or use the π button on a calculator Give an answer to a question involving the circumference or area of a circle in terms of π Find radius or diameter, given area or perimeter of a circles Find the perimeters and areas of semicircles and quarter-circles	Learning Intentions Pupils will know how to: Recognise and name pentagons, hexagons, heptagons, octagons and decagons Understand 'regular' and 'irregular' as applied to polygons Calculate and use the sums of the interior angles of polygons Calculate and use the angles of regular polygons Use the sum of the exterior angles of any polygon is 360° Use the sum of the interior angle and the exterior angle is 180° Identify shapes which are congruent (by eye) Explain why some polygons fit together and others do not Understand and use the angle properties of intersecting lines Understand a proof that the exterior angle of a triangle is equal to the sum of the interior angles at the other two vertices Understand and use the angle properties of parallel lines - find missing angles using properties of	Learning Intentions Pupils will know how to: Interpret tables; represent data in tables and charts Know which charts to use for different types of data sets Construct pie charts for categorical data and discrete/continuous numerical data, drawing angles, to the nearest degree Interpret simple pie charts using simple fractions and percentages and multiples of 10% sections From a pie chart: find the mode find the total frequency Understand that the frequency represented by corresponding sectors in two pie charts is dependent upon the total populations represented by each of the pie charts Success Criteria Pupils will be able to: From a simple pie chart identify the frequency represented by 'x' and 'y' sections. From a simple pie chart identify the mode.	Learning Intentions Pupils will know how to: Work out probabilities from Venn diagrams to represent real-life situations and also 'abstract' sets of numbers/values Use union and intersection notation, complement notation, the empty set notation and the universal set notation Complete a Venn diagram from given information, including using set notation Success Criteria Pupils will be able to: Draw a Venn diagram of students studying French, German or both, and then calculate the probability that a student studies French given that they also study German. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Produce and interpret data from: pictograms composite bar charts dual/comparative bar charts for categorical and ungrouped discrete data bar-line charts vertical line charts line graphs line graphs for time-series data histograms with equal class intervals stem and leaf (including back-to-back) Calculate total population from a bar chart or table Find greatest and least values from a bar chart or table Interpret and find the median, mode and range from stem and leaf diagrams Compare the mean, median, mode and range (as appropriate) of two distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf Identify the mean and then mode from a bar chart Construct tables for time-series data	



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	Calculate perimeters and areas of composite shapes made from circles and parts of circles Success Criteria Pupils will be able to: Recall terms related to a circle. Understand that answers in terms of pi are more accurate. Learning Check - End-of-topic Quiz	co-interior, corresponding and alternate angles Success Criteria Pupils will be able to: Deduce and use the angle sum in any polygon. Derive the angle properties of regular polygons. Given the size of its exterior angle, how many sides does the polygon have? Learning Check - End-of-topic Quiz	Find the angle for one item. Learning Check - End-of-topic Quiz			Recognise simple patterns, characteristics, relationships in bar charts and line graphs Success Criteria Pupils will be able to: Decide the most appropriate chart or table given a data set. State the mode, smallest value or largest value from a stem and leaf diagram. Extract the averages from a stem and leaf diagram. Learning Check - End-of-topic Quiz
	Topic/Unit: Geometric & Quadratic Sequences Learning Intentions Pupils will know how to: Continue a quadratic sequence and use the nth term to generate terms Establish and explain whether a given value is contained within a sequence Distinguish between arithmetic and geometric sequences Continue a geometric progression and find the term-to-term rule, including negatives, fraction and decimal terms Success Criteria Pupils will be able to: Given a sequence, 'Which is the 1st term greater than 50?' What are the next terms in the following sequences? 1, 3, 9, ... 100, 50, 25, ...2, 4, 8, 16, ... Learning Check - End-of-topic Quiz	Topic/Unit: Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to:	Topic/Unit: Surface Area Learning Intentions Pupils will know how to: Sketch nets of cuboids and prisms to appreciate the surfaces of a prism Estimate surface areas by rounding measurements to 1 significant figure Find the surface area of a prism Find surface area using rectangles and triangles Convert between metric area measures Success Criteria Pupils will be able to: Convert fluently between metric units of length. Learning Check - End-of-topic Quiz	Topic/Unit: Working with Quadratics Learning Intentions Pupils will know how to: Define a 'quadratic' expression Multiply together two algebraic expressions with brackets Square a linear expression, #e.g. $(x + 1)^2$ Factorise quadratic expressions of the form $x^2 + bx + c$ Generate points and plot graphs of simple quadratic functions, then more general quadratic functions Identify and name the line of symmetry of a quadratic graph Success Criteria Pupils will be able to: Expand $(x + 2)(x + 6)$. Factorise $x^2 + 7x + 10$. Recognise a quadratic graph from its shape. Learning Check - End-of-topic Quiz	Topic/Unit: Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to:	Topic/Unit: Two-way Tables and Averages Learning Intentions Pupils will know how to: Design and use two-way tables for discrete and grouped data Use information provided to complete a two-way table Problem solve with two-way table Interpret and find the median, mean and range from a (discrete) frequency table Interpret and find the range, modal class, interval containing the median, and estimate of the mean from a grouped data frequency table Understand that the expression 'estimate' will be used where appropriate, when finding the mean of grouped data using mid-interval values Recognise the advantages and disadvantages between measures of average. Success Criteria Pupils will be able to: Estimate the mean from a table. Learning Check - End-of-topic Quiz



YEAR GROUP:	Year 9 Core – 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Indices, Order of Operations and Standard Form	Topic/Unit: Collecting Data	Topic/Unit: Real-life Percentages & Multipliers	Topic/Unit: Pythagoras' Theorem	Topic/Unit: Ratio in Context and Problem Solving	Topic/Unit: 3D Shapes and Volumes
Granular learning intentions/success criteria (What will pupils know, be able to do and understand)	Learning Intentions Pupils will know how to: Use the laws of indices to multiply and divide numbers written in index notation Use brackets and the hierarchy of operations with powers inside the brackets, or raising brackets to powers Use index laws to simplify and calculate the value of numerical expressions unit fraction powers Use numbers raised to the power zero, including the zero power of 10 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 Interpret a calculator display using standard form and know how to enter numbers in standard form Success Criteria Pupils will be able to: What is the value of 2^3? Evaluate $(2^3 \times 2^5) \div 2^4$ Write 51 080 in standard form.	Learning Intentions Pupils will know how to: Recognise types of data: primary secondary, quantitative and qualitative Design and use data-collection sheets for grouped, discrete and continuous data, use inequalities for grouped data, and introduce $\leq$ and $\geq$ signs Sort, classify and tabulate data, both discrete and continuous quantitative data, and qualitative data Understand how sources of data may be biased Understand sample and population Explain why a sample may not be representative of a whole population Consider fairness when collecting a sample of data and minimise bias Success Criteria Pupils will be able to: Explain why a sample may not be representative of a population.	Learning Intentions Pupils will know how to: Calculate amount of increase/decrease Use percentages to solve problems, including comparisons of two quantities using percentages and VAT Percentages over 100% Use percentages in real-life situations, including percentages greater than 100%: Price after VAT (not price before VAT) Value of profit or loss Simple interest Income tax calculations Use decimals to find quantities. Success Criteria Pupils will be able to: Give a decimal value to represent a 15% increase Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Understand, recall and use Pythagoras' Theorem in 2D Calculate the length of the hypotenuse in a right-angled triangle, including decimal lengths and a range of units Find the length of a shorter side in a right-angled triangle Success Criteria Pupils will be able to: Show how a triangle of sides 3,4 and 5 cm forms a right-angled triangle. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Use a variety of measures in ratio and proportion problems: Currency conversions Rates of pay Best value Success Criteria Pupils will be able to: Exchange between Pound Sterling, Euros, American Dollars and other currencies. Work out which size is the best value for money. Calculate the rate of pay earned if someone work for 8 hours at £6.50 per hour and 4 hours over time at 'time and a half.' Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Identify and name common solids: cube, cuboid, cylinder, prism, pyramid, sphere and cone Recall and use the formula for the volume of a cuboid Find the volume of a prism, including a triangular prism a cylinder for some sets, cube and cuboid Calculate volumes of right prisms (base and vertical sides are perpendicular, e.g. trapezium prism, parallelogram prism), and shapes made from cubes and cuboids (e.g. L- shape) Estimate volumes by rounding measurements to 1 significant figure Success Criteria Pupils will be able to: Justify whether a certain number of small boxes fit inside a larger box. Calculate the volume of a triangular prism with correct units. Learning Check - End-of-topic Quiz



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	Write 3.74×10^{-6} as an ordinary number. What is 9^0 ? Learning Check - End-of-topic Quiz	Show me an example of a situation where biased data would result. Learning Check - End-of-topic Quiz				
	Topic/Unit: Area & Perimeter of 2D shapes	Topic/Unit: Parallel Lines and Polygons	Topic/Unit: Pie Charts	Topic/Unit: Venn Diagrams and Set Notation	Topic/Unit: Prepare for end-of-year assessments	Topic/Unit: Graphs and Charts
	Learning Intentions Pupils will know how to: Make sensible estimates of a range of measures in everyday settings Convert between metric units of measurement within one system, including time Measure shapes to find perimeters and areas using a range of scales Find the perimeter of rectangles and triangles Find the perimeter of parallelograms and trapezia Find the perimeter of compound shapes made up from rectangles, triangles, parallelograms and trapezia Recall and use the formulae for the area of a triangle and rectangle Calculate areas and perimeters of compound shapes made from triangles and rectangles Find the area of a trapezium and recall the formula Find the area of a parallelogram Identify, name and draw parts of a circle including tangent, chord, arc, sector and segment	Learning Intentions Pupils will know how to: Find a missing angle in a triangle, using the angle sum of a triangle is 180° Understand and use the angle properties of triangles, use the symmetry property of isosceles triangle to show that base angles are equal Use the side/angle properties of isosceles and equilateral triangles Show step by step deductions when solving problems Understand and use the angle properties of quadrilaterals including the fact that the angle sum is 360° Recall and use properties of angles at a point, angles at a point on a straight line, right angles, and vertically opposite angles Understand and use the angle properties of intersecting lines Identify parallel lines, mark parallel lines on a diagram and use their properties Understand and use the angle properties of parallel lines - find missing angles using properties of co-interior, corresponding and alternate angles Success Criteria Pupils will be able to:	Learning Intentions Pupils will know how to: Interpret tables; represent data in tables and charts Know which charts to use for different types of data sets Construct pie charts for categorical data and discrete/continuous numerical data, drawing angles, to the nearest degree Interpret simple pie charts using simple fractions and percentages and multiples of 10% sections From a pie chart: find the mode find the total frequency Understand that the frequency represented by corresponding sectors in two pie charts is dependent upon the total populations represented by each of the pie charts Success Criteria Pupils will be able to: From a simple pie chart identify the frequency represented by 'x' and 'y' sections. From a simple pie chart identify the mode.	Learning Intentions Pupils will know how to: Work out probabilities from Venn diagrams to represent real-life situations and 'abstract' sets of numbers/values Use union and intersection notation, complement notation, the empty set notation and the universal set notation (all in simple examples) Complete a Venn diagram from given information, including using set notation (all in simple examples) Success Criteria Pupils will be able to: Draw a Venn diagram of students studying French, German or both, and then calculate the probability that a student studies French given that they also study German. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to: Prepare for end-of-year assessments.	Learning Intentions Pupils will know how to: Produce and interpret data from: Pictograms, composite bar charts, dual/comparative bar charts for categorical and ungrouped discrete data, bar-line charts, vertical line charts, line graphs, line graphs for time-series data, histograms with equal class intervals and stem and leaf (including back-to-back) Calculate total population from a bar chart or table Find greatest and least values from a bar chart or table Interpret and find the median, mode and range from stem and leaf diagrams Identify the mode from a bar chart Recognise simple patterns, characteristics, relationships in bar charts and line graphs Success Criteria



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	Recall and use formulae for the circumference of a circle and the area enclosed by a circle circumference of a circle = $2\pi r = \pi d$, area of a circle = πr^2 Find circumferences and areas enclosed by circles Use $\pi \approx 3.142$ or use the π button on a calculator Success Criteria Pupils will be able to: Recall terms related to a circle. Understand that answers in terms of pi are more accurate. Learning Check - End-of-topic Quiz	Use geometric reasoning to answer problems giving detailed reasons. Find the size of missing angles at a point or at a point on a straight line. Learning Check - End-of-topic Quiz	Find the angle for one item. Learning Check - End-of-topic Quiz			Pupils will be able to: Decide the most appropriate chart or table given a data set. State the mode, smallest value or largest value from a stem and leaf diagram. Extract the averages from a stem and leaf diagram. Learning Check - End-of-topic Quiz
	Topic/Unit: Sequences & n^{th} terms	Topic/Unit:	Topic/Unit: Surface Area	Topic/Unit: Solving Linear Equations	Topic/Unit:	Topic/Unit:



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	Learning Intentions Pupils will know how to: Find a specific term in the sequence using position-to-term or term-to-term rules Generate arithmetic sequences of numbers, triangular number, square and cube integers and sequences derived from diagrams Recognise such sequences from diagrams and draw the next term in a pattern sequence Find the next term in a sequence, including negative values Find the nth term for a pattern sequence Find the nth term of a linear sequence Find the nth term of an arithmetic sequence Use the nth term of an arithmetic sequence to generate terms Decide if a given number is a term in the sequence, or find the first term over a certain number Success Criteria Pupils will be able to: Given a sequence, 'Which is the 1st term greater than 50?' What are the next terms in the following sequences? 1, 3, 9, ... 100, 50, 25, ... 2, 4, 8, 16, ... Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to:	Learning Intentions Pupils will know how to: Recap and use the area of basic 2D shapes (square, rectangle, triangle) Estimate surface areas by rounding measurements to 1 significant figure Find the surface area of a prism Find surface area using rectangles and triangles Convert between metric area measures Success Criteria Pupils will be able to: Convert fluently between metric units of length. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Write expressions and set up and solve simple equations, including fractional answers Solve linear equations, with integer coefficients, in which the unknown appears on either side of the equation Solve linear equations which contain simple brackets Solve simple linear equations in one unknown, with integer or fractional coefficients Solve an equation resulting from substituting into a formula Solve simple angle or perimeter problems using algebra Write a simple equation to solve a basic word problem Rearrange simple equations Solve linear equations, with integer coefficients, in which the unknown appears on both sides of the equation Success Criteria Pupils will be able to: Solve: $x + 5 = 12$ Solve: $x - 6 = 3$ Solve: $= 5$ Solve: $2x - 5 = 19$ Given expressions for the angles on a line or in a triangle in terms of a, find the value of a. Given expressions for the sides of a rectangle and the perimeter, form and solve an equation to find missing values. Learning Check - End-of-topic Quiz	Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to:	Learning Intentions Pupils will know how to: Success Criteria Pupils will be able to:
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