<Mathematics>: SPECIFIC LEARNING INTENTIONS

YEAR GROUP:	Year 8 Advanced+ 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Percentages	Topic/Unit: Polygons and Angles	Topic/Unit: Pythagoras Theorem	Topic/Unit: Linear Graphs and Co-ordinate Geometry	Topic/Unit: Scatter Graphs	Topic/Unit: 3D Shapes
Granular learning intentions/success criteria **(What will pupils know, be able to do and understand)**	**Learning Intentions** **Pupils will know how to:** Find a percentage of a quantity using a multiplier Work out a percentage increase or decrease, including simple interest, income tax calculations, value of profit or loss, percentage profit or loss Use a multiplier to increase or decrease by a percentage in any scenario where percentages are used 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:** Be able to work out the price of a deposit, given the price of a sofa is £480 and the deposit is 15% of the price, with a calculator Find fractional percentages of amounts, efficiently with a calculator. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Classify quadrilaterals by their geometric properties (including diagonals) and distinguish between scalene, isosceles and equilateral triangles. Understand 'regular' and 'irregular' Use symmetry property of an isosceles triangle to show that base angles are equal Understand the proof that the angle sum of a triangle is 180°, and derive and use the sum of angles in a triangle Find missing angles in a triangle using the angle sum in a triangle and the properties of an isosceles triangle Understand a proof of, and use the fact 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 quadrilaterals and the fact that the angle sum of a quadrilateral is 360° 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. **Success Criteria** **Pupils will be able to:** Name all quadrilaterals that have a specific property. **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 (including decimal lengths and a range of units) Given three sides of a triangle, justify if it is right-angled or not Calculate the length of a line segment AB given pairs of points. **Success Criteria** **Pupils will be able to:** Does 2, 3, 6 give a right-angled triangle? Justify when Pythagoras' Theorem can and/or can't be used. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Calculate the length of a line segment given the coordinates of the end points Plot and draw graphs of straight lines in the form ax + by = c and find approximate solutions to a linear equation, in this form, from a graph Identify and interpret gradient from an equation ax + by = c Find the equation of a straight line from a graph in the form ax + by = c Find the equation of the line through one point with a given gradient Recognise and use the fact that parallel graphs have the same gradient. **Success Criteria** **Pupils will be able to:** Understand that the form y = mx + c or ax + by = c represents a straight line. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Draw scatter graphs Interpret scatter graphs in terms of the relationship between two variables Draw lines of best fit by eye, understanding what these represent Identify outliers and ignore them on scatter graphs Use a line of best fit, or otherwise, to predict values of a variable given values of the other variable Find the equation of a line of best fit (scatter graphs) to model the relationship between quantities Distinguish between positive, negative and zero correlation using lines of best fit, and interpret correlation in terms of the problem Understand that correlation does not imply causality, and appreciate that correlation is a measure of the strength of the association between two variables Use the line of best fit make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing. **Success Criteria** **Pupils will be able to:** Be able to justify an estimate they have made using a line of best fit. Identify outliers and explain why they may occur. Given two sets of data in a table, model the relationship and make predictions. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Draw sketches of 3D solids Identify planes of symmetry of 3D solids, and sketch planes of symmetry Understand and draw front and side elevations and plans of shapes made from simple solids Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid. **Success Criteria** **Pupils will be able to:** Able to read and construct scale drawings. **Learning Check - End-of-topic Quiz**
	Topic/Unit: Index Laws and further factorising.	Topic/Unit: Indices, Roots and Order of Operations	Topic/Unit: Ratio & Proportion	Topic/Unit: Quadratic and Cubic Graphs	Topic/Unit:	Topic/Unit: Drawing Reciprocal Graphs and Circle Graphs

	Learning Intentions **Pupils will know how to:** Use index notation (positive and negative powers) when multiplying or dividing algebraic terms Use instances of index laws, including use of zero, bracketed, fractional and negative powers Factorise quadratics by grouping/in pairs/by parts Eg. Factorise ab + bc + ac + ad Factorise quadratic expressions of the form $ax^2 + bx + c$, where a is prime only Factorise quadratic expressions using the difference of two squares Simplify algebraic fractions using factorised quadratics of the form $ax^2 + bx + c$, where a is prime only. **Success Criteria** **Pupils will be able to:** Simplify $z^4 \times z^3$, $y^3 \div y^2$, $(a^7)^2$, $(8x6y^4)^{1/3}$ **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Use index notation for integer powers of 10, including negative powers Recognise powers of 2, 3, 4, and 5 Estimate roots of any given positive number, by considering the values it must lie between, e.g. the $\sqrt{42}$ must be between 6 and 7 Understand surd notation, including on a calculator (also that a calculator gives answer to $\sqrt{8}$ as $2\sqrt{2}$) Recognise and use equivalence in base numbers eg. 8 = 23 etc and use this to solve simple problems Use brackets and the order of operations up to and including with powers and roots inside the brackets, or raising brackets to powers or taking roots of brackets Use calculators for all calculations: positive and negative numbers, brackets, powers and roots, four operations. **Success Criteria** **Pupils will be able to:** What is the value of 25? Prove that the square root of 45 lies between 6 and 7. Evaluate $(2^3 \times 2^5) \div 2^4$, 4^0 **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Express the division of a quantity into a number parts as a ratio and write ratios in their simplest form, including three-part ratios Write ratios in form 1 : m or m : 1 and to describe a situation Divide a given quantity into two or more parts in a given part : part or part : whole ratio Use a ratio to find one quantity when the other is known Write a ratio as a fraction Write a ratio as a linear function Use a ratio to compare a scale model to real-life object Use a ratio to convert between measures and currencies, e.g. £1.00 = €1.36 Scale up recipes Convert between currencies Solve proportion problems using the unitary method Work out which product offers best value Express a multiplicative relationship between two quantities as a ratio or a fraction, e.g. when A:B are in the ratio 3:5, A is B. When 4a = 7b, then a = or a:b is 7:4. **Success Criteria** **Pupils will be able to:** Write/interpret a ratio to describe a situation such as 1 blue for every 2 red …, 3 adults for every 10 children … Recognise that two paints mixed red to yellow 5 : 4 and 20 : 16 are the same colour. When a quantity is split in the ratio 3:5, what fraction does each get? Find amounts for three people when amount for one given. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Generate points and plot graphs of simple quadratic functions, then more general quadratic functions. Read from graphs of quadratic functions from real-life problems Find approximate solutions to quadratic equations using a graph Estimate area under a quadratic graph by dividing it into trapezia Draw graphs of simple cubic functions using tables of values Read from graphs of simple cubic functions, including finding solutions to cubic equations Estimate the gradient of a quadratic or cubic at a given point by sketching the tangent and finding its gradient Recognise the shape of a linear, quadratic and cubic graph. **Success Criteria** **Pupils will be able to:** Identify a variety of functions by the shape of the graph. **Learning Check - End-of-topic Quiz**		**Learning Intentions** **Pupils will know how to:** Recognise a linear, quadratic, cubic, reciprocal and circle graph from its shape Draw circles, centre the origin, equation $x^2 + y^2 = r^2$ Recognise and construct the graph of a circle using $x^2 + y^2 = r^2$ for radius r centred at the origin of coordinates Draw graphs of the reciprocal function with $x \neq 0$ using tables of values Recognise, sketch and interpret graphs of the reciprocal function with $x \neq 0$ State the value of x for which the equation is not defined (for reciprocal graphs). **Success Criteria** **Pupils will be able to:** Select and use the correct mathematical techniques to draw linear, quadratic, cubic and reciprocal graphs. Identify a variety of functions by the shape of the graph. **Learning Check - End-of-topic Quiz**
	Topic/Unit: Quadratic Sequences	Topic/Unit: Circles	Topic/Unit:	Topic/Unit:	Topic/Unit:	Topic/Unit: Similarity in 2D

	Find the nth term of quadratic sequences. Continue a quadratic sequence and use the nth term to generate 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 50? **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Recall the definition of a circle and name and draw parts of a circle Recall and use formulae for the circumference of a circle and the area enclosed by a circle (using circumference = 2πr = πd and area of a circle = πr2) using a variety of metric measures 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) Find radius or diameter, given area or circumference of circles in a variety of metric measures Form equations involving shapes including circles and solve these equations. **Success Criteria** **Pupils will be able to:** Understand that answers given in terms of π are more accurate Calculate the perimeters and/or areas of circle, semi-circles and quarter circles given the radius or diameter or vice versa Calculate the area and/or perimeter of shapes with different units of measurement. **Learning Check - End-of-topic Quiz**				**Learning Intentions** **Pupils will know how to:** Write the lengths of two shapes as ratios in their simplest form Understand similarity of triangles and of other plane shapes, and use this to find missing lengths Prove that two shapes are similar by showing that all corresponding angles are equal in size and/or lengths of sides are in the same ratio/one is an enlargement of the other, giving the scale factor Give a more formal geometric proof for the similarity of two given triangles Understand the effect of enlargement on angles, lengths of sides and perimeter Identify the scale factor of an enlargement of a similar shape as the ratio of the lengths of two corresponding sides, using integer or fraction scale factors **Success Criteria** **Pupils will be able to:** Recognise that all corresponding angles in similar shapes are equal in size when the corresponding lengths of sides are not. Recognise similar shapes because they have equal corresponding angles and/or sides scaled up in same ratio. Understand that similar shapes are enlargements of each other and angles are preserved. **Learning Check - End-of-topic Quiz**

	Topic/Unit: Probability **Learning Intentions** **Pupils will know how to:** Write probabilities using fractions, percentages or decimals. Know that the sum of the probabilities of all outcomes is 1, and use 1 – p as the probability of an event not occurring where p is the probability of the event occurring. Find a missing probability from a list including algebraic terms. Understand and use experimental and theoretical measures of probability, including relative frequency to include outcomes using dice, spinners, coins, etc 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 Find the probability of successive events, such as several throws of a single dice List all outcomes for single events, and combined events, systematically Draw sample space diagrams and use them for adding simple probabilities Find a missing probability from two-way table Use a two-way table to calculate unconditional and conditional probability. **Success Criteria** **Pupils will be able to:** If the probability of outcomes are x, 2x, 4x, 3x, calculate x. **Learning Check - End-of-topic Quiz**	**Topic/Unit: Representing & Solving Inequalities** **Learning Intentions** **Pupils will know how to:** Show inequalities on number lines, using open and closed circles Write down whole number values that satisfy an inequality Solve linear inequalities in one variable and represent the solution set on a number line. Use the correct notation to show inclusive and exclusive inequalities Solve 'Show that' questions involving inequalities. **Success Criteria** **Pupils will be able to:** Use inequality symbols to compare numbers Given a list of numbers, represent them on a number line using the correct notation Solve equations using inequalities **Learning Check - End-of-topic Quiz**				

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YEAR GROUP:	Year 8 Advanced – 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Percentages	Topic/Unit: Polygons & Angles	Topic/Unit: Pythagoras Theorem	Topic/Unit: Linear Graphs & Co-ordinate Geometry	Topic/Unit: Scatter Graphs	Topic/Unit: Similarity in 2D
Granular learning intentions/success criteria **(What will pupils know, be able to do and understand)**	**Learning Intentions** **Pupils will know how to:** Find a percentage of a quantity using a multiplier Work out a percentage increase or decrease, including simple interest, income tax calculations, value of profit or loss, percentage profit or loss Use a multiplier to increase or decrease by a percentage in any scenario where percentages are used 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:** Be able to work out the price of a deposit, given the price of a sofa is £480 and the deposit is 15% of the price, with a calculator Find fractional percentages of amounts, efficiently with a calculator. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Classify quadrilaterals by their geometric properties (including diagonals) and distinguish between scalene, isosceles and equilateral triangles. Understand 'regular' and 'irregular' as applied to polygons Use symmetry property of an isosceles triangle to show that base angles are equal Understand the proof that the angle sum of a triangle is 180°, and derive and use the sum of angles in a triangle Find missing angles in a triangle using the angle sum in a triangle and the properties of an isosceles triangle Understand a proof of, and use the fact 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 quadrilaterals and the fact that the angle sum of a quadrilateral is 360° **Success Criteria** **Pupils will be able to:** Name all quadrilaterals that have a specific property. **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 (including decimal lengths and a range of units) Given three sides of a triangle, justify if it is right-angled or not Calculate the length of a line segment AB given pairs of points. **Success Criteria** **Pupils will be able to:** Does 2, 3, 6 give a right-angled triangle? Justify when Pythagoras' Theorem can and/or can't be used **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Calculate the length of a line segment given the coordinates of the end points Recognise and use the fact that parallel graphs have the same gradient Find the equation of a straight line from a graph in the form $y = mx + c$ Sketch a graph of a linear function, using the gradient and y-intercept Find approximate solutions to a linear equation from a graph **Success Criteria** **Pupils will be able to:** Understand that the form $y = mx + c$ or $ax + by = c$ represents a straight line. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Draw scatter graphs. Interpret scatter graphs in terms of the relationship between two variables Draw lines of best fit by eye, understanding what these represent Identify outliers and ignore them on scatter graphs Use a line of best fit, or otherwise, to predict values of a variable given values of the other variable Find the equation of a line of best fit (scatter graphs) to model the relationship between quantities Distinguish between positive, negative and zero correlation using lines of best fit, and interpret correlation in terms of the problem Understand that correlation does not imply causality, and appreciate that correlation is a measure of the strength of the association between two variables Use the line of best fit make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing. **Success Criteria** **Pupils will be able to:** Be able to justify an estimate they have made using a line of best fit. Identify outliers and explain why they may occur. Given two sets of data in a table, model the relationship and make predictions. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Write the lengths of two shapes as ratios in their simplest form. Understand similarity of triangles and of other plane shapes, and use this to find missing lengths Understand the effect of enlargement on angles, lengths of sides and perimeter (extend investigating the area) Identify the scale factor of an enlargement of a similar shape as the ratio of the lengths of two corresponding sides, using integer or simple fraction scale factors. **Success Criteria** **Pupils will be able to:** Recognise that all corresponding angles in similar shapes are equal in size when the corresponding lengths of sides are not. Recognise similar shapes because they have equal corresponding angles and/or sides scaled up in same ratio. Understand that similar shapes are enlargements of each other and angles are preserved. **Learning Check - End-of-topic Quiz**

	Topic/Unit: Index Laws & Further Factorising	Topic/Unit: Indices, Roots & Order of Operations	Topic/Unit: Ratio & Proportion	Topic/Unit: Quadratic and Cubic Graphs	Topic/Unit: 3D Shapes & Reflections/Rotations	Topic/Unit: Working with grouped data
	Learning Intentions **Pupils will know how to:** Use index notation (positive and negative powers) when multiplying or dividing algebraic terms Use instances of index laws, including use of zero, bracketed, fractional and negative powers Factorise quadratics by grouping/in pairs/by parts Eg. Factorise ab + bc + ac + ad Factorise quadratic expressions of the form $ax^2 + bx + c$, where a is prime only Factorise quadratic expressions using the difference of two squares Simplify algebraic fractions using factorised quadratics of the form $ax^2 + bx + c$, where a is prime only. **Success Criteria** **Pupils will be able to:** Simplify $z^4 \times z^3$, $y^3 \div y^2$, $(a^7)^2$, $(8x6y^4)^{1/3}$ **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Use index notation for integer powers of 10, including negative powers Recognise powers of 2, 3, 4, and 5 Estimate roots of any given positive number, by considering the values it must lie between, e.g. the $\sqrt{42}$ must be between 6 and 7 Recognise and use equivalence in base numbers eg. 8 = 23 etc and use this to solve simple problems Use brackets and the order of operations up to and including with powers and roots inside the brackets, or raising brackets to powers or taking roots of brackets Use calculators for all calculations: positive and negative numbers, brackets, powers and roots, four operations. **Success Criteria** **Pupils will be able to:** What is the value of 25? Prove that the square root of 45 lies between 6 and 7. Evaluate $(2^3 \times 2^5) \div 2^4$, 4^0 **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Recap of Y7 Ratio objectives, write a ratio as a fraction. Divide a ratio into a fraction (inc 3 part ratio). Write ratios in form 1 : m or m : 1 and to describe a situation Use a ratio to find one quantity when the other is known Write a ratio as a linear function Use a ratio to compare a scale model to real-life object Use a ratio to convert between measures and currencies, e.g. £1.00 = €1.36 Scale up recipes Convert between currencies Solve proportion problems using the unitary method Work out which product offers best value. **Success Criteria** **Pupils will be able to:** Write/interpret a ratio to describe a situation such as 1 blue for every 2 red …, 3 adults for every 10 children … Recognise that two paints mixed red to yellow 5 : 4 and 20 : 16 are the same colour. When a quantity is split in the ratio 3:5, what fraction does each person get?	**Learning Intentions** **Pupils will know how to:** Generate points and plot graphs of simple quadratic functions, then more general quadratic functions. Read from graphs of quadratic functions from real-life problems. Find approximate solutions to quadratic equations using a graph. Estimate area under a quadratic graph by dividing it into trapezia Draw graphs of simple cubic functions using tables of values Read from graphs of simple cubic functions, including finding solutions to cubic equations Recognise the shape of a linear, quadratic and cubic graph **Success Criteria** **Pupils will be able to:** Identify a variety of functions by the shape of the graph **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Reflect 2D shapes using mirror lines. Reflections over x- and y-axes and over the lines y = x, y = -x, y = a and x = b Rotate 2D shapes using the origin or any other point on a coordinate grid. Draw sketches of 3D solids Identify planes of symmetry of 3D solids, and sketch planes of symmetry Understand and draw front and side elevations and plans of shapes made from simple solids Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid. **Success Criteria** **Pupils will be able to:** Able to read and construct scale drawings. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Construct and interpret grouped frequency tables for continuous data: for grouped data, find the interval which contains the median and the modal class estimate the mean with grouped data and understand that the expression 'estimate' will be used when finding the mean of grouped data due to using mid-interval values understand that the expression 'estimate' will be used where appropriate, when finding the mean of grouped data using mid-interval values. **Success Criteria** **Pupils will be able to:** Estimate the mean from a table. **Learning Check - End-of-topic Quiz**

			Find amounts for three people when amount for one given. Express the statement 'There are twice as many girls as boys' as the ratio 2 : 1 or the linear function y = 2x, where x is the number of boys and y is the number of girls. **Learning Check - End-of-topic Quiz**			
	Topic/Unit: Quadratic Sequences	Topic/Unit: Circles	Topic/Unit:	Topic/Unit:	Topic/Unit:	Topic/Unit:
	Learning Intentions **Pupils will know how to:** Revisit Y7 sequences: Find the nth term of quadratic sequences in the form an^2 or $n^2 + c$. Continue a quadratic sequence and use the nth term to generate terms. Solve simple problems involving quadratic sequences from real life situations. **Success Criteria** **Pupils will be able to:** Given a sequence, what is the first term greater than 50? **<u>Topic/Unit: Probability</u>** **Learning Intentions** **Pupils will know how to:** Write probabilities using fractions, percentages or decimals. Know that the sum of the probabilities of all outcomes is 1, and use 1 – p as the probability of an event not occurring where p is the probability of the event occurring. Find a missing probability from a list including algebraic terms Find the probability of successive events, such as several throws of a single dice List all outcomes for single events, and combined events, systematically	**Learning Intentions** **Pupils will know how to:** Recall the definition of a circle and name and draw parts of a circle Recall and use formulae for the circumference of a circle and the area enclosed by a circle (using circumference = 2πr = πd and area of a circle = πr2) using a variety of metric measures Find radius or diameter, given area or circumference of circles in a variety of metric measures. **Success Criteria** **Pupils will be able to:** Understand that answers given in terms of π are more accurate Calculate the perimeters and/or areas of circle, semi-circles and quarter circles given the radius or diameter or vice versa Calculate the area and/or perimeter of shapes with different units of measurement. **<u>Topic/Unit: Representing & Solving Inequalities</u>** Show inequalities on number lines, using open and closed circles Write down whole number values that satisfy an inequality Solve linear inequalities in one variable, and represent the solution set on a number line. Use the correct notation to show inclusive and exclusive inequalities				

	Draw sample space diagrams and use them for adding simple probabilities Link the simple use of the product rule for counting to sample space diagrams and listing combined outcomes Find a missing probability from two-way table Use a two-way table to calculate unconditional and conditional probability. **Success Criteria** **Pupils will be able to:** If the probability of outcomes are x, 2x, 4x, 3x, calculate x. **Learning Check - End-of-topic Quiz**	Solve 'Show that' questions involving inequalities **Success Criteria** **Pupils will be able to:** Use inequality symbols to compare numbers Given a list of numbers, represent them on a number line using the correct notation Solve equations using inequalities **Learning Check - End-of-topic Quiz**				

<Maths>: SPECIFIC LEARNING INTENTIONS

YEAR GROUP:	Year 8 Core+ 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Percentages	Topic/Unit: Circles	Topic/Unit: Ratio & Proportion	Topic/Unit: Drawing Linear Graphs continued.	Topic/Unit: KS 3 Assessment Weeks	Topic/Unit: Scatter Graphs
Granular learning intentions/success criteria **(What will pupils know, be able to do and understand)**	**Learning Intentions** **Pupils will know how to:** Find a percentage of a quantity, including using a decimal multiplier 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 **Success Criteria** **Pupils will be able to:** What is 10%, 15%, 17.5% of £30? **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** 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 = $2\pi r = \pi d$, 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:** Use $\pi \approx 3.142$ or use the π button on a calculator **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Understand and express the division of a quantity into a of number parts as a ratio Write/interpret a ratio to describe a situation Write ratios in their simplest form (revisit from Yr 7 fractions) Compare ratios Write ratios in form 1 : m or m : 1 Write a ratio as a fraction (revisit from Yr 7 fractions) Share a quantity in a given ratio including three-part ratios Solve a ratio problem in context: use a ratio to find one quantity when the other is known use a ratio to compare a scale model to a real-life object use a ratio to convert between measures and currencies problems involving mixing, e.g. paint colours, cement and drawn conclusions Understand and use proportion as equality of ratios Solve word problems involving direct and inverse proportion Work out which product is the better buy Scale up recipes Convert between currencies Solve proportion problems using the unitary method **Success Criteria** **Pupils will be able to:**	**Learning Intentions** **Pupils will know how to:** Continue with this topic started last half-term. Plot and draw graphs of y = a, x = a, y = x and y = –x and recognise any given straight-line graphs parallel to the axes Recognise that equations of the form y = mx + c correspond to straight-line graphs in the coordinate plane Plot and draw graphs of straight lines of the form y = mx + c using a table of values (with and without given axes; with and without given table of values) Sketch a graph of a linear function, using the gradient and y-intercept Identify and interpret gradient from an equation y = mx + c **Success Criteria** **Pupils will be able to:** Plot and draw the graph for y = 2x – 4. **Learning Check - End-of-topic Quiz**	**Learning Intentions** Revision and Preparation for KS3 assessment weeks	**Learning Intentions** **Pupils will know how to:** Draw scatter graphs Interpret points on a scatter graph Identify outliers and ignore them on scatter graphs Draw the line of best fit on a scatter diagram by eye, and understand what it represents Use the line of best fit make predictions - interpolate and extrapolate apparent trends whilst knowing the dangers of so doing Distinguish between positive, negative and no correlation using lines of best fit Interpret scatter graphs in terms of the relationship between two variables Interpret correlation in terms of the problem Understand that correlation does not imply causality State how reliable their predictions are, i.e. not reliable if extrapolated. **Success Criteria** **Pupils will be able to:** Justify an estimate they have made using a line of best fit. Identify outliers and explain why they may occur. Given two sets of data in a table, model the relationship and make predictions. **Learning Check - End-of-topic Quiz**

			Write a ratio to describe a situation such as 1 blue for every 2 red, or 3 adults for every 10 children. Recognise that two paints mixed red to yellow 5 : 4 and 20 : 16 are the same colour. Scale up recipes and decide if there is enough of each ingredients. **Learning Check - End-of-topic Quiz**			
	Topic/Unit: Working with Indices, Powers & Roots	Topic/Unit: Algebra – Solving Inequalities	Topic/Unit: Drawing Linear Graphs	Topic/Unit: Relative Frequency & Listing Outcomes	Topic/Unit:	Topic/Unit: 2D and 3D Shapes
	Learning Intentions **Pupils will know how to:** Recall integer squares up to 10 x 10 and the corresponding square roots, understanding the difference between positive and negative square roots Recall the cubes of 1, 2, 3, 4, 5 and 10 Use index notation for squares and cubes Recognise powers of 2, 3, 4, 5 Evaluate expressions involving squares, cubes and roots by adding, subtracting, multiplying and dividing numbers in index form Evaluate expressions involving squares, cubes and roots by cancelling to simplify a calculation Use index notation for powers of 10, including negative powers Use the laws of indices to multiply and divide numbers written in index notation Use the square, cube and power keys on a calculator Use brackets and the hierarchy of operations with powers inside the brackets, or raising brackets to powers Use calculators for all calculations: positive and negative numbers,	**Learning Intentions** **Pupils will know how to:** Show inequalities on number lines Construct inequalities to represent a set shown on a number line Write down whole number values that satisfy an inequality Use the correct notation to show inclusive and exclusive inequalities Solve simple linear inequalities in one variable, and represent the solution set on a number line. **Success Criteria** **Pupils will be able to:** Solve –3 < 2x + 1 and show the solution set on a number line. State the whole numbers that satisfy a given inequality. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Plot and draw graphs of y = a, x = a, y = x and y = –x and recognise any given straight-line graphs parallel to the axes Recognise that equations of the form y = mx + c correspond to straight-line graphs in the coordinate plane Plot and draw graphs of straight lines of the form y = mx + c using a table of values (with and without given axes; with and without given table of values) Sketch a graph of a linear function, using the gradient and y-intercept Identify and interpret gradient from an equation y = mx + c **Success Criteria** **Pupils will be able to:** Plot and draw the graph for y = 2x – 4. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Find the probability of an event happening using relative frequency Estimate the number of times an event will occur, given the probability and the number of trials – for both experimental and theoretical probabilities Compare experimental data and theoretical probabilities Compare relative frequencies from samples of different sizes List all outcomes for combined events systematically Use and draw sample space diagrams **Success Criteria** **Pupils will be able to:** List all the outcomes for an experiment. Calculate the probability of an event from a sample space diagram. Decide if a coin, spinner or game is fair. **Learning Check - End-of-topic Quiz**		**Learning Intentions** **Pupils will know how to:** Draw circles and arcs to a given radius or given the diameter Measure and draw lines, to the nearest mm Draw circles and arcs to a given radius or given the diameter Know and use compass directions Draw sketches of 3D solids Know the terms face, edge and vertex Identify and sketch planes of symmetry of 3D solids Make accurate drawings of triangles and other 2D shapes using a ruler and a protractor Understand and draw front and side elevations and plans of shapes made from simple solids Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid **Success Criteria** **Pupils will be able to:** Draw a circle of radius 3cm. Count the number of faces, edges or vertices on a Cuboid. Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid **Learning Check - End-of-topic Quiz**

	brackets, powers and roots, four operations. **Success Criteria** **Pupils will be able to:** What is the value of 2^3? Evaluate $(2^3 \times 2^5) \div 2^4$ **Learning Check - End-of-topic Quiz**					
	Topic/Unit: Theoretical Probability	Topic/Unit: Fractions (Revisit)	Topic/Unit:	Topic/Unit:	Topic/Unit:	Topic/Unit: Time
	Learning Intentions **Pupils will know how to:** Distinguish between events which are impossible, unlikely, even chance, likely, and certain to occur Mark events and/or probabilities on a probability scale of 0 to 1 Write probabilities in words or fractions, decimals and percentages Find the probability of an event happening using theoretical probability Use theoretical models to include outcomes using dice, spinners, coins List all outcomes for single events systematically Work out probabilities from frequency tables Work out probabilities from two-way tables Record outcomes of probability experiments in tables Add simple probabilities Identify different mutually exclusive outcomes and know that the sum of the probabilities of all outcomes is 1 Using 1 – p as the probability of an event not occurring where p is the probability of the event occurring Find a missing probability from a list or table including algebraic terms	**Learning Intentions** **Pupils will know how to:** Add and subtract fractions and mixed numbers in a range of problems. Multiply and divide a fractions and mixed numbers in a range of problems. Find the reciprocal of an integer, decimal or fraction **Success Criteria** **Pupils will be able to:** Calculate: ×4,÷ 3. What is the reciprocal of 4, or –2, **Learning Check - End-of-topic Quiz**				**Learning Intentions** **Pupils will know how to:** Use correct notation for time, 12- and 24-hour clock and convert between both Work out time taken for a journey from a timetable Calculate time intervals, giving answers in hours, minutes or a mixture of both Use a calculator efficiently with time calculations **Success Criteria** **Pupils will be able to:** Write 7.35pm in 24 hour clock form How long does a film last if it begins at 6:30pm and finishes at 8:05pm? **Learning Check - End-of-topic Quiz**

	Success Criteria **Pupils will be able to:** Mark events on a probability scale and use the language of probability. Calculate the probability of an event from a two-way table or frequency table. Decide if a coin, spinner or game is fair. **<u>Topic/Unit: Lines, Shapes & Angles</u>** **Learning Intentions** **Pupils will know how to:** Use letters to identify points, two-letter notation for a line and three-letter notation for an angle Identify parallel lines, mark parallel lines on a diagram and use their properties Identify a line perpendicular to a given line, mark perpendicular lines on a diagram and use their properties Describe angles as turns and in degrees, understanding clockwise and anticlockwise; know that there are 360° in a full turn, 180° in a half turn and 90° in a quarter turn Estimate sizes of angles Measure angles using a protractor Distinguish between scalene, equilateral, isosceles and right-angled triangles 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 Recall the properties and definitions of special types of quadrilaterals, including symmetry properties					

	Name all quadrilaterals that have a specific property Draw sketches of shapes including when given some information about a shape on coordinate axes, complete the shape 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 Show step-by-step deduction when solving problems. **Success Criteria** **Pupils will be able to:** Name all quadrilaterals that have a specific property. 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**					

<Maths>: SPECIFIC LEARNING INTENTIONS

YEAR GROUP:	Year 8 Core – 2025-2026					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
	Topic/Unit: Percentages	Topic/Unit: Lines, Shapes & Angles	Topic/Unit: Ratio and Proportion	Topic/Unit: Drawing Linear Graphs	Topic/Unit: KS3 Assessment Weeks	Topic/Unit: 2D and 3D Shapes
Granular learning intentions/success criteria **(What will pupils know, be able to do and understand)**	**Learning Intentions** **Pupils will know how to:** Convert between fractions, decimals and percentages Compare and order fractions, decimals and integers, including using inequality signs Express a given number as a percentage of another number Find a percentage of a quantity without a calculator: 50%, 25% and multiples of 10% and 5% Find a percentage of a quantity or measurement with and without a calculator (find 1% method) Calculate amount of increase/decrease Use percentages in real-life situations, including percentages greater than 100% including price after VAT (not price before VAT) **Success Criteria** **Pupils will be able to:** What is 10%, 15%, 17.5% of £30? **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Use letters to identify points, two-letter notation for a line and three-letter notation for an angle Identify parallel lines, mark parallel lines on a diagram and use their properties Identify a line perpendicular to a given line, mark perpendicular lines on a diagram and use their properties Describe angles as turns and in degrees, understanding clockwise and anticlockwise; know that there are 360° in a full turn, 180° in a half turn and 90° in a quarter turn Estimate sizes of angles Measure angles using a protractor Distinguish between scalene, equilateral, isosceles and right-angled triangles 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 Recall the properties and definitions of special types of quadrilaterals, including symmetry properties Name all quadrilaterals that have a specific property	**Learning Intentions** **Pupils will know how to:** Understand and express the division of a quantity into a of number parts as a ratio Write/interpret a ratio to describe a situation Write ratios in their simplest form Share a quantity in a given ratio including three-part ratios Compare ratios Write ratios in form 1 : m or m : 1 for simple conversions Write a ratio as a fraction Understand and use proportion as equality of ratios Solve word problems involving direct and inverse proportion Work out which product is the better buy Scale up recipes Convert between currencies Solve proportion problems using the unitary method. **Success Criteria** **Pupils will be able to:** Write a ratio to describe a situation such as 1 blue for every 2 red, or 3 adults for every 10 children. Recognise that two paints mixed red to yellow 5 : 4 and 20 : 16 are the same colour.	**Learning Intentions** **Pupils will know how to:** Plot and draw graphs of y = a, x = a, y = x and y = –x and recognise any given straight-line graphs parallel to the axes. Recognise that equations of the form y = mx + c correspond to straight-line graphs in the coordinate plane. Plot and draw graphs of straight lines of the form y = mx + c using a table of values (with and without given axes) **Success Criteria** **Pupils will be able to:** Plot and draw the graph for y = 2x – 4. **Learning Check - End-of-topic Quiz**	**Learning Intentions** Revision and Preparation for KS3 assessment weeks	**Learning Intentions** **Pupils will know how to:** Draw circles and arcs to a given radius or given the diameter Measure and draw lines, to the nearest mm Draw circles and arcs to a given radius or given the diameter Know and use compass directions Draw sketches of 3D solids Know the terms face, edge and vertex Identify and sketch planes of symmetry of 3D solids in simple situations Make accurate drawings of triangles and other 2D shapes using a ruler and a protractor Understand and draw front and side elevations and plans of shapes made from simple solids Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid **Success Criteria** **Pupils will be able to:** Draw a circle of radius 3cm. Count the number of faces, edges or vertices on a Cuboid. Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid **Learning Check - End-of-topic Quiz**

		Draw sketches of shapes including when given some information about a shape on coordinate axes, complete the shape 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. **Success Criteria** **Pupils will be able to:** Name all quadrilaterals that have a specific property. 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**	Scale up recipes and decide if there is enough of each ingredient. **Learning Check - End-of-topic Quiz**			
	Topic/Unit: Working with Indices, Powers and Roots	Topic/Unit: Perimeter and Area (Recap)	Topic/Unit: Fractions (Revisit)	Topic/Unit: Relative Frequency and Listing Outcomes	Topic/Unit: Scatter Graphs	Topic/Unit: Time
	Learning Intentions **Pupils will know how to:** Recall integer squares up to 10 x 10 and the corresponding square roots, understanding the difference between positive and negative square roots Recall the cubes of 1, 2, 3, 4, 5 and 10 Use index notation for squares and cubes Recognise powers of 2, 3, 4, 5 Evaluate expressions involving squares, cubes and roots by adding, subtracting, multiplying and dividing numbers in index form Evaluate expressions involving squares, cubes and roots by cancelling to simplify a calculation Use index notation for powers of 10, including negative powers Use the laws of indices to multiply and divide numbers written in index notation	**Learning Intentions** **Pupils will know how to:** 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. **Success Criteria** **Pupils will be able to:** Find the area/perimeter of a given shape, stating the correct units. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Write fractions to describe shaded parts of diagrams Use diagrams to find equivalent fractions or compare fractions Write a fraction in its simplest form and find equivalent fractions Compare fractions, use inequality signs, compare unit fractions Order fractions, by using a common denominator Express a given number as a fraction of another, using very simple numbers, some cancelling, and where the fraction is both < 1 and > 1 Convert between mixed numbers and improper fractions Add and subtract fractions, including writing the answer as an improper fraction or a mixed number	**Learning Intentions** **Pupils will know how to:** Find the probability of an event happening using relative frequency Estimate the number of times an event will occur, given the probability and the number of trials – for both experimental and theoretical probabilities List all outcomes for combined events systematically Use and draw sample space diagrams. **Success Criteria** **Pupils will be able to:** List all the outcomes for an experiment. Calculate the probability of an event from a sample space diagram. Decide if a coin, spinner or game is fair. **Learning Check - End-of-topic Quiz**	**Learning Intentions** **Pupils will know how to:** Draw scatter graphs Interpret points on a scatter graph Identify outliers and ignore them on scatter graphs Draw the line of best fit on a scatter diagram by eye, and understand what it represents Use the line of best fit make predictions - interpolate and extrapolate apparent trends whilst knowing the dangers of so doing Distinguish between positive, negative and no correlation using lines of best fit Interpret scatter graphs in terms of the relationship between two variables Interpret correlation in terms of the problem Understand that correlation does not imply causality	**Learning Intentions** **Pupils will know how to:** Use correct notation for time, 12- and 24-hour clock and convert between both Work out time taken for a journey from a timetable Calculate time intervals, giving answers in hours, minutes or a mixture of both. **Success Criteria** **Pupils will be able to:** Write 7.35pm in 24 hour clock form How long does a film last if it begins at 6:30pm and finishes at 8:05pm? **Learning Check - End-of-topic Quiz**

	Use the square, cube and power keys on a calculator Use brackets and the hierarchy of operations with powers inside the brackets, or raising brackets to powers Use calculators for all calculations: positive and negative numbers, brackets, powers and roots, four operations. **Success Criteria** **Pupils will be able to:** What is the value of 2^3? Evaluate $(2^3 \times 2^5) \div 2^4$ **Learning Check - End-of-topic Quiz**		Multiply and divide an integer by a fraction Multiply and divide a fraction by an integer, including finding fractions of quantities or measurements Multiply fractions: simplify calculations by cancelling first Divide a fraction by a whole number Divide fractions by fractions Understand and use unit fractions as multiplicative inverses. **Success Criteria** **Pupils will be able to:** Express a given number as a fraction of another, including where the fraction > 1. Simplify . ? × 15, 20 × .? ? of 36 m, of £20. Calculate: × 2, ÷ 3. **Learning Check - End-of-topic Quiz**		State how reliable their predictions are, i.e. not reliable if extrapolated. **Success Criteria** **Pupils will be able to:** Justify an estimate they have made using a line of best fit. Identify outliers and explain why they may occur. Given two sets of data in a table, model the relationship and make predictions. **Learning Check - End-of-topic Quiz**	
	Topic/Unit: Theoretical Probability	Topic/Unit: Solving Inequalities	Topic/Unit:	Topic/Unit:	Topic/Unit:	Topic/Unit:
	Learning Intentions **Pupils will know how to:** Distinguish between events which are impossible, unlikely, even chance, likely, and certain to occur Mark events and/or probabilities on a probability scale of 0 to 1 Write probabilities in words or fractions, decimals and percentages Find the probability of an event happening using theoretical probability Use theoretical models to include outcomes using dice, spinners, coins List all outcomes for single events systematically Work out probabilities from frequency tables Work out probabilities from two-way tables Record outcomes of probability experiments in tables Add simple probabilities Identify different mutually exclusive outcomes and know that	**Learning Intentions** **Pupils will know how to:** Show inequalities on number lines Construct inequalities to represent a set shown on a number line Write down whole number values that satisfy an inequality Use the correct notation to show inclusive and exclusive inequalities Solve simple linear inequalities in one variable and represent the solution set on a number line. **Success Criteria** **Pupils will be able to:** Solve $-3 < 2x + 1$ and show the solution set on a number line. State the whole numbers that satisfy a given inequality. **Learning Check - End-of-topic Quiz**				

	the sum of the probabilities of all outcomes is 1 Using 1 – p as the probability of an event not occurring where p is the probability of the event occurring Find a missing probability from a list or table including algebraic terms **Success Criteria** **Pupils will be able to:** Mark events on a probability scale and use the language of probability. If the probability of outcomes are x, 2x, 4x, 3x calculate x. Calculate the probability of an event from a two-way table or frequency table. Decide if a coin, spinner or game is fair. **Learning Check - End-of-topic Quiz**					