

Maths Curriculum

Curriculum Intent

At Iceni Academy we aim to celebrate, promote and enjoy mathematics. We want all our children to value and appreciate their mathematical learning, whether they are competitive or intrinsic thinkers, striving to complete their next step, trying for a personal best, or simply enjoying learning a new method or mathematical concept.

Curriculum Implementation

Year	When	Lead	Topic	Summary	Skills and Knowledge	Assessment for learning	Big Questions	Key Words
7	A1	HCO	Number 1: Properties of number	Identifying factors, multiples, primes and prime factors. Working with square and cube numbers. Writing in index form.	<ul style="list-style-type: none"> -Write factors and identify common factors. -Write multiples and common multiples. -Using listing strategies to identify the highest common factor and lowest common multiple of at least two integers. -Identify prime numbers and prime factors. -Recall square and cube numbers. -Recall square and cube roots. -Write in index form. -Evaluate a number written in index form. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (October). -Exit tickets. 	What are the properties of a number?	Factor, multiple, prime, divisibility, decomposition, square, cube, root, index, power, evaluate, recall, express
7	A1/A2	HCO	Number 2: Ordering and Rounding	Ordering positive and negative numbers. Calculating with negatives. FDP equivalence.	<ul style="list-style-type: none"> -Order positive and negative numbers. -Use negative numbers in context. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. 	What is an inequality? What is the difference between rounding to	Fraction, Decimal, Percentage, Denominator, Numerator, decimal place,

				<p>Rounding and bounds.</p> <ul style="list-style-type: none"> -Use the number/temperature line to add and subtract negative numbers. -Calculate with negative numbers. -Compare numbers using inequalities. -Draw inequalities on number lines. -Identify the inequality from a number line. -Convert between equivalent fractions, understand maintenance of proportion. -Recall equivalence of simple FDP: $\frac{1}{10}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$, $\frac{2}{3}$, $\frac{3}{4}$, 1. -Order fractions by converting to the same denominator. -Order decimals. -Order percentages (inc over 100%). -Convert between FDP. -Compare FDP by converting all to a fraction, decimal or percentage. -Round to 1000,100,10 and 1. -Round to decimal places. -Round to significant figures. -Identify bounds. -Use bounds in perimeter and area problems. 	<ul style="list-style-type: none"> -Self Assessment. -Homework. -Termly assessment-Termly assessment (October). -Exit tickets. 	<p>decimal places and significant figures?</p>	<p>significant figure, order, round, estimate, inequality, integer, bound, negative, positive, directed numbers</p>	
7	A2/Sp1	HCO	Algebra 1: Manipulation	<p>Introduction to algebraic notation. Simplifying, expanding and</p>	<ul style="list-style-type: none"> -Recognise algebraic conventions and write expressions. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. 	<p>What are the differences between expressions,</p>	<p>expression, term, simplify, factorise, evaluate</p>

				<p>factorising expressions. Substituting and writing formulae.</p>	<p>-Simplify linear expressions by collecting like terms. -Expand brackets. -Simplify expressions involving expansion of two separate brackets. -Expand double brackets to form a quadratic expression. -Factorise into brackets. -Factorise a quadratic into brackets. -Substitute positive, negative, fractional and decimal values into expressions. -Explain the meaning of and substitute numbers into formula such as: the volume of a cuboid or length l, breadth b and height h $V = lbh$ -Derive formula such as: the number D of non-connecting diagonals from a single vertex in a polygon with n sides $D = n - 3$ -Derive formula such as: the number f of square faces that can be seen by examining a stack of n cubes $f = 4n + 2$</p>	<p>-Peer assessment. -Self Assessment. -Homework. -Termly assessment (January). -Exit tickets.</p>	<p>equations and formulas?</p>	
7	Sp1/Sp2/Su1	HCO	Geometry 1: Area, Perimeter and Measure of turn	<p>Calculating perimeter and area of 2D shapes. Identifying volume and</p>	<p>-Calculate the perimeter of 2D shapes. -Calculate the perimeter of composite shapes. -Identify missing lengths when given the perimeter.</p>	<p>-Cold calling questioning. -Live feedback. -Peer assessment.</p>	<p>How do I calculate the area and perimeter or shapes?</p>	<p>regular, equilateral, perimeter, rectangles, triangles, parallelograms, trapeziums,</p>

				<p>surface area of 3D shapes. Calculating missing angles.</p>	<ul style="list-style-type: none"> -Calculate the area of 2D shapes. -Calculate the area of composite shapes. -Identify missing lengths when given the area. -Calculate the circumference and area of circles and parts of circles. -Calculate the radius and diameter when given the circumference or area. -Calculate the volume of 3D shapes. -Calculate missing lengths when given the volume. -Calculate the surface area of 3D shapes. -Calculate missing angles on a straight line, in a right-angle and around a point. - Calculate missing angles in triangles and quadrilaterals. -Understand and identify vertically opposite angles. -Work algebraically to identify missing angles. -Investigate sum of Interior angles in any polygon and deduce a method for calculating. Eg $180(n-2)$ or by diagram. Establish 	<ul style="list-style-type: none"> -Self Assessment. -Homework. -Termly assessment (January). -Exit tickets. 	<p>What is the sum of angles in polygons?</p>	<p>nets, cubes, cuboids, acute, obtuse, reflex, polygon, interior, exterior, quadrilateral, bearings</p>
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					<p>individual interior angles for regular polygons.</p> <ul style="list-style-type: none"> -Establish exterior angles add to 360 and use to solve problems including finding number of sides given exterior angle of regular shapes. 			
7	Su1/Su2	HCO	Statistics 1: Representation of Data	<p>Collecting data and representing in bar charts, composite and comparative bar charts and pie charts.</p>	<ul style="list-style-type: none"> -Know the difference between qualitative and quantitative data. -Know the difference between discrete and continuous data. -Know the difference between primary and secondary data. -Collect data using questionnaires. -Tally data from collecting data and when given a data set. -Identify data from and draw bar charts, comparative bar charts and composite bar charts. Write comparative statements. -Construct and interpret population pyramids making comparative statements about proportions. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (May). -Exit tickets. 	How do I collect and represent data?	<p>Bar chart, vertical line graph, pie chart, frequency, composite and comparative bar charts, tally</p>

					<ul style="list-style-type: none"> -Identify data from and draw line graphs. Write comparative statements. - Identify data from and draw pie charts. Write comparative statements. 			
8	A1	JMR	Number 3: Properties & Powers	<p>Identifying prime factors to write the highest common factor and lowest common multiple. Working with standard form.</p>	<ul style="list-style-type: none"> -Define prime number- a number with exactly two factors (discuss why other definitions can allow errors). Recall the first ten prime numbers. -Identify factors for any number up to 1000. -Identify multiples of 1 and 2-digit numbers. -Identify the product of prime factors. -Calculate the highest common factor from listing and using product of prime factors. -Calculate the lowest common multiple from listing and using product of prime factors. -Write numbers in index form. -Evaluate numbers written in index form. -Simplify using laws of indices – multiply, divide, brackets. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (October). -Exit tickets. 	How do I construct a number?	<p>Prime, Square, Cube, Factor, Multiple, Power, roots, exponent, integer, decimal, index, indices, place value, product, integer</p>

					<ul style="list-style-type: none"> -Simplify algebraic expressions with coefficients greater than 1 using laws of indices. -Identify numbers written in standard form. -Convert between ordinary and standard form. 			
8	A1/A2	JMR	Number 4: Fractions, Decimals & Percentages	Calculations with negatives, fractions, decimals and percentages.	<ul style="list-style-type: none"> -Identify negative numbers in context. -Add, subtract, multiply and divide using negative numbers. -Represent fractions diagrammatically. -Write numbers as fractions. -Identify equivalent fractions and compare and order fractions. -Calculate fractions of amounts. -Convert between improper and mixed numbers and use both in fraction calculations. -Convert between and compare FDP. -Calculate using decimals. -Calculate a percentage of an amount. Increase and decrease by percentages. -Calculate the original price using reverse percentages. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (October). -Exit tickets. 	<ul style="list-style-type: none"> How do I compare and convert between FDP? How do I manipulate the proportion of an amount? 	<ul style="list-style-type: none"> Fractions, Decimals, Percentages, convert, negative, positive, equivalent, integer, interest (compound)

					-Work with simple and compound interest. Identify the value of appreciation and depreciation.			
8	A2/Sp1	JMR	Geometry 2: Co-ordinates, Transformations & Similarity	Identifying coordinates and completing transformations of shapes (reflection, rotation, translation and enlargement).	<ul style="list-style-type: none"> -Plot coordinates in all 4 quadrants. -Transform shapes by translating, reflecting, rotating and enlarging. -Write the transformation that maps one shape onto another. -Identify combined transformations. -Identify angles in similar shapes. -Calculate the scale factor of similar shapes. -Calculate missing lengths in similar shapes. -Use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles. -Identify congruence using the rules of congruency. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (February). -Exit tickets. 	How do I transform shapes? What makes shapes congruent and similar?	scale factor, axis, reflection, enlargement, scale factor, centre of enlargement, symmetry, centre of rotation, clockwise, anti-clockwise, translation, vector, congruence, area s.f, volume s.f, image
8	Sp1/Sp2	JMR	Algebra 2: Solving Equations	Forming and solving equations. Working with formulae.	<ul style="list-style-type: none"> -Work with algebraic notation. -Simplify, expand and factorise expressions. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. 	How do I solve an equation?	variable, term, expression, formula, unknown, coefficient,

					<ul style="list-style-type: none"> -Solve one, two and three-step equations with unknowns on one side. -Solve equations with brackets and unknowns on one side. -Solve equations with unknowns on both sides. -Solve equations with brackets on both sides. -Solve quadratics with a coefficient of x^2 equal to 1 by factorising. -Solve by factorising quadratic equations with a prime coefficient of x^2 greater than 1. -Substitute integers, fractions and directed numbers into equations and solve. -Substitute numerical values into formulae, including scientific formulae, and solve. -Form and solve equations (geometrical and worded problems). 	<ul style="list-style-type: none"> -Peer assessment. -Self Assessment. -Homework. -Termly assessment (February). -Exit tickets. 		solve, linear, quadratic
8	Sp2/Su1	JMR	Number 5: Ratio	Simplify and share into ratios. Convert between units. Work with	<ul style="list-style-type: none"> -Express values as a ratio. -Express in the form 1:n and n:1. -Simplify ratios. -Write ratios as fractions. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. 		ratio, proportion, simplify, deduce, express, direct

				<p>scale drawings and bearings.</p> <ul style="list-style-type: none"> -Share into a ratio. -Use one part of a ratio and the difference to identify parts of the ratio or the whole. -Solve problems involving 3-part ratios. -Use ratio in recipe problems. -Given new serving size (simple multiple) deduce ingredient quantities. -Given new ingredient quantities deduce the serving size. -Solve problems. Deduce ingredient quantities given serving size. Deduce serving size given limiting single ingredient quantity. -Use ratio to identify lengths and measures in maps and scale drawings. -Simple estimation from comparing diagrams. -Given simple scale factor (2cm represents 10m) and labelled sketch find actual values. -Use scale factors expressed in ration form, 1:50 000, to find actual dimensions and 	<ul style="list-style-type: none"> -Peer assessment. -Self Assessment. -Homework. -Termly assessment (May). -Exit tickets. 		<p>proportion, inverse proportion, concertion, exchange rate, quantity</p>
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					<p>to find represented dimensions.</p> <ul style="list-style-type: none"> -Use bearings and scales to solve real life problems. -Convert using direct proportion. -Establishing conversion rate given a set of approximate values. -Problems with inverse proportion. Eg There's enough grass to feed 5 cows for 8 days. How long would the same amount feed 4 cows? 			
8	Su1	JMR	Statistics 2: Averages from tables	Calculating averages and the range from frequency and grouped frequency tables.	<ul style="list-style-type: none"> -Identify averages and the range from a list of data. -Identify which average would give the most suitable answer to a problem and explain why. -Calculate averages and the range from a frequency table. -Identify missing frequencies when given the mean of a frequency table. -Calculate averages and the range from grouped frequency tables. --Identify missing frequencies when given the 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (May). -Exit tickets. 	How do I calculate averages from tables?	Mean, Mode, Range, Median, Lower/Upper Quartile, IQR, Frequency, Discrete, Continuous, Consistent, Average

					mean of a grouped frequency table. -Identify averages from bar charts by listing frequency.			
8	Su1/Su2	JMR	Statistics 3: Intro to Probability	Working with probability language and relative frequency. Calculate probabilities.	-Use probability language. -Identify probability on a number line. -Write probabilities as fractions, decimals and percentages. -Use probability notation. -Identify the probability of an event happening. -Identify relative frequency. -Calculate experimental probability. -Identify mutually exclusive events.	-Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (May). -Exit tickets.	What is the difference between a dependent and independent event?	Chance, likely, unlikely, impossible, possible, event, mutually exclusive, trial, relative frequency, expected frequency, mutually
9	A1	HCO	Geometry 3: Pythagoras and Trigonometry	Identifying properties of shapes. Calculating missing lengths and angles using Pythagoras and trigonometry. Working in 3D (where applicable).	-Describe, sketch and draw using conventional terms and notations. -Label angles and sides of shapes, in particular, triangles. -Identify squares, cubes and roots. -Calculate using integers and decimals. -Deduce and use Pythagoras' theorem to identify the hypotenuse.	-Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (November). -Exit tickets.	How do I manipulate a right angled triangle?	square, root, index, hypotenuse, opposite, adjacent, sine, cosine, tangent, right angle, inverse

					<ul style="list-style-type: none"> -Deduce and use Pythagoras' theorem to identify shorter lengths. -Use Pythagoras' theorem in non-right-angled triangles (through partitioning). -Use trigonometry to identify missing lengths. -Use trigonometry to identify missing angles. -Use trigonometry in non-right-angled triangles (through partitioning). -Use Pythagoras and trigonometry interchangeably in 2D shapes. -Use Pythagoras and trigonometry interchangeably in 3D shapes. 			
9	A1/A2	KBA	Algebra 3: Sequences and Graphs	<p>Solving one and two-step equations. Identifying patterns, term-to-term rule and the nth term of sequences. Applying pattern and solving equations knowledge to</p>	<ul style="list-style-type: none"> -Solve one, two and 3-step equations. -Identify patterns from images. -Identify the term-to-term rule and differentiate between linear and geometric sequences. -Identify the next number in the sequence. -Write the nth term of linear sequences. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (November). 	<p>How do I solve an equation? How do patterns in sequences vary? What does $y=mx+c$ mean?</p>	<p>Linear, quadratic, geometric, Fibonacci, term-to-term, substitution, sequence, quadrant, coordinate, x-axis, y-axis, $y=mx+c$,</p>

				linear and quadratic graphs.	<ul style="list-style-type: none"> -Identify if a number is in the sequence. -Identify special sequences. -Write the nth term of a quadratic sequence. -Apply knowledge of sequences to drawing linear graphs. -Substitute into equations to identify coordinates for linear and quadratic graphs. -Draw linear and quadratic graphs. -Write the equation of the line. -Identify other graphs and their purpose. 	-Exit tickets.		gradient, y-intercept
9	A2/Sp1	KBA	Number 6: Index Laws and Standard Form	<p>Evaluating and simplifying laws of indices.</p> <p>Converting between ordinary and standard form.</p> <p>Calculations involving standard form.</p>	<ul style="list-style-type: none"> -Recall square, cube and cube roots. -Write in index form. -Use laws of indices. -Use laws of indices to simplify expressions with coefficients greater than 1. -Work with negative indices. -Work with fractional indices. -Work with negative fractional indices. -Identify numbers written in standard form. -Convert between ordinary and standard form. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (November). -Exit tickets. 	How do I write numbers in standard form?	<p>Square, cube, root, index, power, evaluate, express, multiply, divide, add, subtract, standard form, ordinary number</p>

					<ul style="list-style-type: none"> -Calculate using standard form. -Write numbers in non-standard form in standard form. 			
9	Sp1	KBA	Statistics 4: Representation of Data	<ul style="list-style-type: none"> Calculating averages. Drawing bar and pie charts. Calculating cumulative frequency and drawing cumulative frequency graphs and box plots. Identifying quartiles from cumulative frequency graphs and box plots. Calculating frequency density and drawing histograms. 	<ul style="list-style-type: none"> -Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data. -Calculate appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers). -Calculate cumulative frequency from a table of data. -Draw a cumulative frequency graph. -Identify the mean and quartiles from CF graphs. -Use CF graphs to draw box plots. -Compare CF graphs and box plots. -Calculate frequency density from a table of values. -Draw histograms. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (February/ March). -Exit tickets. 	What are the different ways of presenting data?	<ul style="list-style-type: none"> Cumulative frequency, box plot, lower quartile, upper quartile, median, inter-quartile range, histogram, frequency, frequency density

					<ul style="list-style-type: none"> -Calculate missing frequency from histograms. -Calculate an estimate for an amount of people/things from a histogram. 			
9	Su1	KBA	Algebra 4: Solving Equations and Rearranging Formula	<p>Solving one-step, two-step and three-step equations. Solving equations involving brackets. Solving equations with unknowns on both sides. Forming and solving equations. Solving quadratic and simultaneous equations.</p>	<ul style="list-style-type: none"> -Solve one, two and three-step equations with unknowns on one side. -Solve equations with brackets and unknowns on one side. -Solve equations with unknowns on both sides. -Solve equations with brackets on both sides. -Form and solve equations (geometrical and worded problems). -Solve quadratic equations by factorising. -Solve quadratic equations by completing the square. -Solve quadratic equations using the quadratic formula. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (June). -Exit tickets. 	How do I solve linear and quadratic equations?	<p>Solve, rearrange, linear, quadratic, simultaneous, variable, equation, quadratic formula, factorise, substitute</p>
9	Su1	KBA	Geometry 4: Angles in Polygons, Bearings and Constructions	<p>Calculating the total degrees in a polygon and identifying missing angles. Writing and drawing bearings. Constructing</p>	<ul style="list-style-type: none"> -Calculate missing angles on a straight line, around a point, in a triangle and in a quadrilateral. -Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. 	<p>What is a polygon? How do the Emergency Services know your location using mathematics?</p>	<p>Degrees, triangle (scalene, isosceles, right angle and equilateral), quadrilateral (rhombus, parallelogram,</p>

				triangles, angle bisectors, line bisectors, distances from a point and loci.	<ul style="list-style-type: none"> -Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons. -Calculate interior and exterior angles in polygons. -Use one angle and the formula for a sum of angles to identify the number of sides of a polygon. -Identify and draw bearings. -Construct triangles. -Construct line and angle bisectors. -Identify distances from a point. -Use loci. 	<ul style="list-style-type: none"> -Termly assessment (June). -Exit tickets. 		square, rectangle, trapezium, kite and arrow), polygon, interior angle, exterior angle, bearing, North, angle, three figure bearing, clockwise, loci, perpendicular, parallel, bisector
10	A1	CJZ	Number 7: Surds, Bounds and Recurring Decimals	Identifying rational and irrational numbers. Simplifying and calculating with surds. Writing a recurring decimal as a fraction.	<ul style="list-style-type: none"> -Recall squares, cubes and roots. -Know the difference between rational and irrational numbers. -Simplify a surd. -Multiply and divide surds and then simplify. -Add and subtract surds after simplifying. -Rationalise the denominator (simple surd). -Rationalise the denominator by expanding 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (October). -Exit tickets. 	What is an irrational number and how does this link to surds? What is the difference between a significant figure and a decimal place? Which denominators	Square, root, evaluate, express, multiply, divide, add, subtract, round, lower bound, upper bound, error interval, inequality, fraction, recurring, solving

				<p>double brackets to form a quadratic.</p> <ul style="list-style-type: none"> -Solve equations involving surds by rationalising the denominator. -Round to 1000, 100, 10, whole, decimal places and significant figures. -Truncate numbers. -Identify highest and lowest values. -Identify lower and upper bounds (dp, sf and truncation). Use these to write error intervals. -Calculate using lower and upper bounds. -Understand the difference between terminating and recurring decimals. -Convert fractions to decimals (and reverse) for common terminating decimals. -Use a calculator to convert fractions to recurring decimals. -Identify fractions of common recurring decimals eg 0.3333333 is $1/3$ -Work algebraically to convert recurring decimals to fractions. 		<p>cause recursion?</p>	
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					-Calculate using recurring decimals.			
10	A1/A2	LHP	Algebra 5: Algebraic Fractions, Functions and Iteration	Calculating with fractions. Simplifying algebraic fractions. Calculating with algebraic fractions. Substitution, substituting into functions, substituting into composite functions, rearranging formula and substituting into inverse functions.	-Add, subtract, multiply and divide using proper fractions, improper fractions and mixed numbers. -Simplify algebraic fractions using knowledge of index laws. -Simplify algebraic fractions by factorising and cancelling out. -Add, subtract, multiply and divide algebraic fractions. Then, use knowledge of simplifying. -Solve algebraic fractions. -Substitute into expressions and formula. -Substitute into a function. -Substitute into composite functions. -Rearrange expressions and formula. -Identify the inverse function by rearranging. -Substitute into inverse functions and composite inverse functions. -Solve functions.	-Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (October). -Exit tickets.	How do I manipulate fractions using algebra? What is the purpose of a function? Will all iterative processes converge?	Solve, rearrange, linear, quadratic, variable, equation, quadratic formula, factorise, substitute, iterative

10	Sp1	CJZ	Number 8: Ratio	<p>Writing ratios, simplifying ratios, sharing into a ratio and scaling up ratios. Use ratio in recipes. Use ratio and proportion in scale drawings. Calculate best buys. Calculate direct and inverse proportion from worded problems and then algebraically (higher).</p>	<ul style="list-style-type: none"> -Express values as a ratio. -Express in the form 1:n and n:1. -Simplify ratios. -Write ratios as fractions. -Share into a ratio. -Use one part of a ratio and the difference to identify parts of the ratio or the whole. -Solve problems involving 3-part ratios. -Use ratio in recipe problems. -Use ratio to convert between currencies and read and calculate amounts from a conversion graph. -Identify best buys using currencies and conversion graphs. -Use ratio to identify lengths and measures in maps and scale drawings. -Convert using direct and inverse proportion. -Deduce and use formula for direct proportion. -Deduce and use formula for direct proportion. -Deduce and use the formula for direct and inverse proportion where 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (January). -Exit tickets. 	How do we use ratio in the real world?	Ratio, proportion, simplify, deduce, express, direct proportion, inverse proportion, conversion, exchange rate
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					the relationship includes squares, cubes and decimals.			
10	Sp2	CJZ	Statistics 5: Probability	Working with probability language and relative frequency. Calculate probabilities. Drawing two-way tables, tree and Venn diagrams and calculating probabilities.	<ul style="list-style-type: none"> -Use probability language. -Identify probability on a number line. -Write probabilities as fractions, decimals and percentages. -Use probability notation. -Identify the probability of an event happening. -Identify relative frequency. -Calculate experimental probability. -Identify mutually exclusive events. -Construct possibility spaces as a method for recording possible outcomes for two events. -Construct two-way tables. -Write the probability of an event happening (independent and conditional) from a two-way table. -Construct a probability tree (unconditional), know and recognise location of key features. -Use a probability tree (unconditional) to find 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (June). -Exit tickets. 	What are the chances?	Mutually exclusive, even, likely, unlikely, certain, impossible, independent, dependent, unconditional, conditional, Venn

					<p>probability of combination of events occurring.</p> <ul style="list-style-type: none"> -Know formal notation $P(A \cap B) = P(A) \times P(B)$ $P(A \cup B) = P(A) + P(B)$ -Construct probability trees for unconditional probability for a variety of situations. -Use trees to find probability of events or combination of events occurring. -Use tree methods in increasingly complex situations and using algebra. -Recognise and understand the notation involved in creating a Venn diagram. -Create a Venn diagram to categorise information from a list. -Use a Venn diagram to deduce members in a group (when members are independent and conditional) and solve problems. -Use a Venn diagram to find probabilities of events. 			
10	Su1	CJZ	Algebra 6: Plot and use graphs of equations	Drawing linear, quadratic, cubic, reciprocal and exponential	<ul style="list-style-type: none"> -Substitute into expressions. -Substitute into $y=mx+c$ to identify coordinates. -Draw linear graphs. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. 	Can all equations be drawn on the	Linear, quadratic, substitution, sequence,

				<p>graphs. Identify the equation of the line. Identify parallel and perpendicular lines. Draw sine, cosine and tangent graphs. Transform graphs.</p>	<ul style="list-style-type: none"> -Identify the y-intercept and gradient of a linear graph. -Write the equation of the line. -Identify parallel and perpendicular gradients. -Write the equation of parallel and perpendicular lines when given an equation of a line and a coordinate. -Write the equation of parallel and perpendicular lines when given two coordinates. -Substitute into quadratic equations to identify coordinates. -Draw quadratic graphs. -Identify roots and turning points from a quadratic graph. -Draw cubic graphs. -Draw reciprocal graphs. -Draw exponential graphs. -Draw and identify sine, cosine and tangent graphs. -Translate graphs - quadratics and trig: $y = f(x) + a$ $y = f(x + a)$ -Reflect graphs - trig, quadratic and cubic 	<ul style="list-style-type: none"> -Peer assessment. -Self Assessment. -Homework. -Termly assessment (June). -Exit tickets. 	<p>cartesian plane?</p>	<p>quadrant, coordinate, x-axis, y-axis, $y=mx+c$, gradient, y-intercept</p>
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					$y = -f(x)$ $y = f(-x)$ -Stretch graphs - trig, quadratic: $y = 2f(x)$			
10	Su2	CJZ	Geometry 5: Co-ordinates, Transformations & Similarity	Transformations of shapes (reflection, rotation, translation, enlargement). Identifying combinations of transformations. Identifying similarity and congruence. Vector geometry.	-Manipulate shapes according to a described transformation - reflection (including plotting lines of equations), rotation, translation (vector notation) and enlargement. -Enlarge by positive, fractional and negative scale factors. -Describe a transformation given two images. -Identify and write combinations of transformations. -Identify the properties of similar shapes. -Calculate the scale factor of similar shapes. -Calculate missing lengths/angles with a given scale factor. -Use a linear scale factor to find area and volume scale factor. -Use scale factor to calculate area and volume.	-Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Termly assessment (June). -Exit tickets.	How do I transform shapes?	Scale factor, axis, reflection, enlargement, symmetry, centre of rotation, clockwise, anti-clockwise, translation, vector, congruence, area s.f, volume s.f, image

					<ul style="list-style-type: none"> -Use area and volume scale factors to calculate missing lengths. -Use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles. -Calculate using vectors. -Tackle problems involving vector geometry. -Work with vector geometry problems involving ratio. 			
11	A1	HCO	Algebra 7: Inequalities and Graphs	<p>Writing inequalities, solving inequalities, drawing inequalities on number lines and graphing inequalities.</p> <p>Identifying the equation of a circle, radius and centre. Drawing equations of circles.</p> <p>Calculating the equation of a tangent from a circle.</p>	<ul style="list-style-type: none"> -Write inequalities and identify integers that satisfy the inequality. -Solve linear inequalities (one inequality symbol). -Solve linear inequalities (two inequality symbols) -Solve quadratic inequalities. -Represent inequalities on a number line. -Identify inequalities from a number line. -Draw linear and quadratic graphs. -Graph inequalities. -Identify the equation of the inequality. 	<ul style="list-style-type: none"> -Cold calling questioning. -Live feedback. -Peer assessment. -Self Assessment. -Homework. -Mock Assessments (November). -Exit tickets. 	<p>What region does the inequality satisfy?</p> <p>What is the equation of a circle?</p>	<p>Linear, quadratic, substitution, quadrant, coordinate, x-axis, y-axis, $y=mx+c$, gradient, y-intercept, inequality, greater than (or equal to), less than (or equal to), shading regions</p>

					<ul style="list-style-type: none"> -Shade the region satisfying the inequality. -Write the inequalities that create the shaded region. -Identify the centre and radius from an equation $x^2+y^2=c$ -Identify the centre and radius from an equation $(x-a)^2+(y-b)^2=c$ -Draw the equation of the circle. -Identify the gradient from the centre to a point on the circle. -Identify the negative reciprocal gradient. -Write the equation of a line from a gradient and given coordinate. -Write the equation of the tangent to the circle. 			
11	A1-Su2		Revision	Revision identified by class teacher.				