

Maths

At Coquet Community School, we provide a broad and balanced, ambitious curriculum for all pupils. Our maths curriculum builds upon the knowledge and skills pupils have developed in primary school through a well-planned and sequenced curriculum. Our curriculum plans follow the national curriculum; allowing time for retrieval, practice, enquiry, mathematical reasoning and problem solving. We draw on evidence-based research to ensure our curriculum is high quality and meets the needs of our pupils. We provide regular opportunities to revisit learning, so it becomes embedded in our pupil's long-term memory. The overview of our plan is below.

Assessment: There will be one formal assessment every term which will include topics covered at any point during their maths education						
Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	Place value and ordering - Place value of integers and decimals - Order integers and decimals Four operations - Adding and subtracting - Multiplying and dividing	Sequences - Describe and continue sequences Algebraic notation - Function machines - Algebraic notation - Substitution Equality and equivalence - Solve one step linear equations - Collect like terms	Rounding and estimation - Round numbers to varying degrees of accuracy Graphing data - Pictograms - Bar charts - Scatter graphs	Fractions, decimals and percentages - Convert between fractions, decimals and percentages Directed numbers - Order directed numbers - Add and subtract with negative numbers - Multiply and divide with negative numbers	Fractions and percentages of an amount - Find fractions and percentages of amounts - Increase and decrease by a percentages Perimeter and area - Find perimeter of shapes - Calculate area of common 2-D shapes using a formula	Properties of number - Factors, multiples and primes - Square, triangular and cube numbers and roots Add and subtract fractions - Equivalent fractions - Adding and subtracting fractions Angles and polygons - Measure and draw lines and

		Averages and range Calculate the mean, median, mode and range for sets of data			Speed, distance, time - Calculations involving speed, distance and time using the formula - Distance-time graphs	- angles - Basic angle facts and related calculations - Angles in triangles and quadrilaterals - Angles in parallel lines
8	Ratio Understand ratio and fractions - Expressing, sharing and simplifying ratios - Compare ratios and fractions Proportion and scale - Direct proportion - Conversion graphs - Currency conversions - Recipes - Similar shapes - Converting metric units	Coordinates and graphs - Coordinates in all 4 quadrants - Lines parallel to the axes - Draw straight line graphs - Understand gradient and y-intercept Multiply and divide fractions - Multiplying and dividing fractions including by an integer - Multiplying and dividing mixed numbers	Area, volume and density - Area of rectangles, triangles, parallelograms - Area of a trapezium - Area and circumference of a circle - Area of compound shapes - Volume of cubes and cuboids - Use units of mass, density and volume Equations and inequalities	Percentages - Convert between fractions, decimals and percentages including those greater than 1 - Percentage of an amount using a multiplier - Increase and decrease by a percentage - Percentage change Standard form Convert between ordinary	Angles in parallel lines and polygons - Angles at a point, vertically opposite angles, angles on a straight line - Angles in parallel lines - Interior and exterior angles of polygons Tables and probability - Probability vocabulary and the probability scale - Single event	Circles - Circumference of a circle - Perimeter of parts of a circle - Area of a circle - Area of parts of a circle Graphs and charts - Pictograms, line and bar charts - Construct and interpret pie charts - Compare distributions using graphs Sequences - Generate and

	- Interpreting maps using scale and ratios Algebraic manipulation - Form algebraic expressions - Identify and use formulae, expressions, identities and equations - Simplify expressions - Expand and factorise single brackets	Symmetry and reflection - Line symmetry - Rotational symmetry - Reflection of shapes in horizontal, vertical and diagonal lines.	- Solve 1 and 2 step equations including those with fractions - Form and solve equations with unknowns on both sides - Use and solve inequalities including inequalities on a numberline	numbers and standard form - Perform calculations with standard form Interpret and represent data - Types of data - Averages and range - Averages from a grouped frequency table	probability - Use the property that probabilities sum to 1 - Sample space diagrams - Two way tables	describe sequences using words - Generate sequences given an algebraic rule nth term of a linear sequence
9	Properties of number - Factors, multiples, and primes - HCF and LCM - Venn diagrams - Integers, real numbers, rational numbers. - Venn diagrams - Product of primes - Surds Percentages	Fractions - Add, subtract, multiply and divide fractions - Fractions of an amount Rates - Speed, distance and time calculations - Distance-time graphs - Flow and units	Straight line graphs - Plotting and drawing straight line graphs - Gradients and intercepts $y=mx+c$ - Interpreting real-life graphs Ratio and proportion - Direct and inverse proportion	Similarity - Enlargement and similarity - Calculating unknown angles and lengths in similar shapes Algebraic manipulation - Expand and simplify single and double brackets	Non-linear graphs - Substitution into quadratic expressions - Drawing quadratic graphs - Reciprocal and exponential graphs - Drawing cubic graphs Sets and probability - Using	Simultaneous equations - Solving simultaneous equations by addition and subtraction - Solving simultaneous equations by multiplying one or both equations Trigonometry

	- Percentage increase and decrease - Percentage of an amount - Percentage change - Simple and compound interest Area and volume - Circumference and area of a circle - Surface area of cubes and cuboids - Volume of prisms and cylinder Equations, inequalities and formulae - Solve equations - Solve inequalities - Substitution - Change the subject of a formulae	- problems - Rates of change Standard form - Converting large and small numbers into standard form - Compare and order numbers in standard form - Calculations with numbers in standard form Maths and money - Jobs and pay - Investing and borrowing money - Running a house or business - Budgeting - Insurance	- Conversion graphs - Sharing in a ratio Constructions and congruence - Constructing triangles - Constructing angle and perpendicular bisectors including from a point - Congruent figures	- Factorise into single and double brackets - Expand triple brackets Pythagoras' theorem - Calculate a missing length of a right angled triangle - Use Pythagoras' theorem to decide if a triangle is right angled - Pythagoras' theorem in 3D shapes	- diagrams to work out probabilities - Relative frequency - Expected outcomes and independent events - Probabilities from Venn diagrams - Complement of sets Transformations - Enlargement through positive and fractional scale factors - Describing enlargement and rotation - Translations and vector notation	- Identifying and labelling the hypotenuse, opposite and adjacent sides - Using trigonometry to calculating a missing side and angle - Solving problems using trigonometry - Trigonometry in 3D shapes
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In year 10 all students follow the same path which enables content across both higher and foundation tiers to be accessed. In year 11 students study either towards a foundation tier, or a higher tier, final examination.

Setting for year 11 is determined by student outcome at the end of year 10.

10	Algebraic Manipulation - Simplifying algebraic expressions - Index laws - Expand and factorise a single bracket Equations, inequalities and formulae - Solve equations and inequalities - Change the subject of a formula Quadratic expressions and equations - Expand and factorise double brackets - Solve quadratic equations - Complete the square	Percentages - Percentage calculations - Repeated percentage change - Reverse percentages Ratio and scale - Sharing in a ratio - Combining ratio - Ratio and algebra Fractions - Fraction arithmetic - Algebraic fractions Non calculator methods - Order of operations - Recurring decimals and fractions	Straight line graphs - Plotting straight line graphs - Understanding gradient and y-intercept $y = mx + c$ - Graphs of inequalities Probability - Sample space diagrams - Relative frequency - Probability tree diagrams Rounding and estimation - Error intervals and bounds	Pythagoras and trigonometry - Using Pythagoras' theorem to find missing lengths in right angled triangles - Using trigonometry to find missing sides and angles in right angled triangles - Sine and cosine rule for non right angled triangles Interpret and represent data - Mean, median, mode and range of data from lists and tables - Sampling - Scatter graphs	Non linear graphs - Equations of tangents to a circle Graphs and diagrams - Pie charts - Histograms - Cumulative frequency diagrams - Box plots Vectors - Vector arithmetic - Vector journeys in shapes	Factors, powers and surds - Prime factors - Negative and fractional indices - Surds Perimeter, area and volume - Arc length and area of a sector - Volume and surface area Angles - Angles in parallel lines - Angles in polygons
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	Use the quadratic formula to solve quadratic equations			Non linear graphs - Properties of quadratic and cubic graphs - Area under a graph - Graphs of circles		
11 Foundati on	Simultaneous equations - Solve a pair of simultaneous equations Ratio and proportion - Solve problems with ratio - Direct and inverse proportion - Conversion graphs - Exchange rates Area and Volume - Plans and elevations - Volume and surface area of pyramids,	Similarity and congruency - Calculating missing sides in similar shapes - Identifying congruent shapes Sequences and proof - Types of sequences - Finding the nth term of a linear sequence Standard form - Convert between numbers in standard form and ordinary numbers	Work with circles - Area and circumference of circles - Perimeter and area of a sector Set notation and Venn diagrams - Set notation - Venn diagrams - Probability from Venn diagrams Functions and graphs - Function machines - Quadratic, cubic and reciprocal graphs	Rates - Speed, distance, time - Density and pressure Bearings - Measure and draw bearings - Scale drawings with bearings	Lessons will be tailored to the needs of the class based on gaps and misconceptions identified during assessments.	Lessons will be tailored to the needs of the class based on gaps and misconceptions identified during assessments.

	cones, cylinders and spheres	Perform calculations in standard form	Equations and formulae Form and solve equations			
11 Higher	Simultaneous equations - Form and solve a pair of linear simultaneous equations - Solve a pair of simultaneous equations - one linear and one non-linear Ratio and proportion - Direct and inverse proportion - Algebraic direct and inverse proportion Area and Volume - Plans and elevations - Volume and surface area of	Similarity and congruency - Missing lengths in similar shapes - Area and volume in similar shapes - Proving congruency Sequences and proof - nth term for linear and quadratic sequences - Iteration Standard form - Convert between ordinary numbers and standard form - Complete calculations with standard	Circle theorems - Know and apply the rules relating to circle theorems Set notation and Venn diagrams - Understand and use set notation Vectors - Calculations with column vectors - Vector journeys in shapes	Functions and graphs - Composite and inverse functions - Reciprocal and exponential graphs - Graphs of trig functions - Graph transformations	Lessons will be tailored to the needs of the class based on gaps and misconceptions identified during assessments.	Lessons will be tailored to the needs of the class based on gaps and misconceptions identified during assessments.

	spheres, cylinders, pyramids, cones and frustrums	form				
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Additional Information

The curriculum above is the broad overview of structure and sequencing. In some instances, this will be adapted slightly to ensure the best progress for pupils - for example by running parallel units of work with different specialist staff. Where this happens, careful planning ensures that all pupils receive the same content in the same depth across the year and that, as always, assessment is carefully planned to ensure that no group is ever disadvantaged.

Examples of on-going assessment and feedback in lessons

- Verbal feedback by the teacher to the whole class which students act on in the lesson
- Pupils self-assess or peer-assess work with a clear framework guiding them through this.
- Teachers circulate to give 'LIVE' and immediate feedback as pupils are working independently
- Pupils may complete mini quizzes or retrieval activities that revisit prior learning and receive verbal feedback
- Use of tailored questioning by the teacher
- End of unit 'exit tickets' as well as termly assessments are marked by the teacher and feedback is given