**Proposed Stockport School 5 Year Maths Curriculum**

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|  | **Red Module****Place Value, Symmetry and Transformations, Averages** | **Yellow Module****Calculations, Angles, Sequences** | **Green Module****Fractions, Algebraic Manipulation, Charts, Shapes** | **Orange Module****Decimals, Equations, Units, Properties of Numbers** | **Blue Module****Percentages, Graphs, Probability, Perimeter, Area & Volume, Ratio** |
| Unit I | * Vector proofs
* Matrix multiplication
* Transformations of matrices
* Combinations of transformations using matrices
 | * Equation of a circle
* Tangents to circles
* Pythagoras theorem and trigonometry in 3 dimensions
* Geometric proof (including similarity and congruence)
* Trigonometric equations and identities
* Advanced sequences
 | * Algebraic fractions
* Change the subject of more complex formulae
* Algebraic proof
* Completing the square a>1
* Expand polynomials using Pascal’s triangle
* Factor theorem
 | * Iteration
* Solve equations involving negative and fractional indices
* Quadratic inequalities
* Sketch quadratics
* Transformation of functions including trig
* Simultaneous equations in three variables
* Rationalising more complex denominators
 | * Growth and decay (exponential)
* Quadratic inequalities
* Gradient of a curve
* Gradient of a tangent
* Area under graphs
* Differentiation
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| Unit H | * Apply upper and lower bounds
* Co-ordinates in 3 dimensions
* Calculations with vectors
* Sampling
* Capture-recapture method
 | * Circle theorems
* Equation of a circle centre (0,0)
* Trig graphs
* Area of a triangle using trigonometry
* Sine and cosine rules
* nth term of a quadratic sequence
 | * Factorise quadratics a>1
* Completing the square a=1
* Quadratic formula
* Form quadratic equations and solve
* Cumulative frequency diagrams
* Histograms
 | * Simultaneous equations with quadratics
* Solve linear inequalities graphically
* Simple algebraic proof
* Dimensional analysis
* Surds - expanding brackets and rationalising
* Estimate powers and roots
* Negative fractional indices
* Functions, inverse functions and composite functions
 | * Repeated percentage change
* Identifying the equation of a line from coordinates
* Parallel and perpendicular lines
* Sketch graphs from key points
* Gradient as a rate of change
* Direct and inverse proportion
* Graphs of direct and inverse proportion
* Conditional probabilities
* Similarity with length, area and volume
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| Unit G | * Truncation
* Calculate with numbers in standard form
* Recurring Decimals
* Fractional and negative enlargements
* Column vectors and basic combinations
* Loci
* Invariance
* Quartiles and box plots
 | * Bearings
* Trigonometry in right angled triangles
* Know exact trig ratios
* Similarity and rules of congruent triangles
* Recognise geometric sequences and Fibonacci
 | * Four operations with fractions and mixed numbers, positive and negative
* Factorise quadratics a=1
* Form expressions and equations
* Lines of best fit and predicting
 | * Solve fractional equations
* Form and solve systems of simultaneous equations
* Solve quadratic equations by factorising
* Compound units (SDT PFA DMV)
* Convert area and volume units
* Convert related compound measures
* Surds - Simplifying and 4 operations
 | * Plot quadratics, cubics and reciprocals
* Tree diagrams (non-conditional)
* Product rule for counting
* Surface area and volume of spheres, pyramids and cones
* Arc lengths, angles and areas of sectors
* Equivalent and unitary ratios
* Ratios, fractions and equations
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| Unit F | * Estimating
* Error intervals
* Standard form
* Constructions
* Enlargements
* Estimated averages from grouped frequency tables
* Compare distributions
 | * Four operations with integers and decimals, positive and negative
* Pythagoras theorem
* Angle sum of polygons
* nth term of linear sequences
* Recognise common sequences
 | * Divide fractions
* Index laws with algebra
* Expand two or more binomials
* Scatter diagrams and correlation
* Population sampling
* Congruent triangles
 | * Rearrange formulae
* Solve inequalities
* Inequalities on a number line
* Simultaneous equations algebraically
* Inverse proportion
* LCM and HCF
* Product of prime factors
* Roots and indices
* Negative indices
* Fractional indices
 | * Percentage change
* Compound percentages
* Reverse percentages
* Gradients from linear graphs
* Identifying the equation of a line from a graph
* Solve simultaneous equations graphically
* Experimental probability
* Venn diagrams
* Area and perimeter of composite shapes
* Volume of prisms
* Surface area of prisms
* Scale diagrams and maps
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|  | **Red Module****Place Value, Symmetry and Transformations, Averages** | **Yellow Module****Calculations, Angles, Sequences** | **Green Module****Fractions, Algebraic Manipulation, Charts, Shapes** | **Orange Module****Decimals, Equations, Units, Properties of Numbers** | **Blue Module****Percentages, Graphs, Probability, Perimeter, Area & Volume, Ratio** |
| Unit E | * Convert fluently between FDP
* Round to significant figures
* Apply reflections, rotations and translations
* Averages from discrete frequency tables
* Stem and leaf diagrams
 | * Division with decimals
* Use of a calculator
* Angles in parallel lines
* Generate linear (and simple quadratic) sequences
 | * Multiply fractions
* Factorisation
* Time series graphs
* Plans and elevations
* Construct 2D shapes
* Congruence and similarity
 | * Solve linear equations in one variable, unknowns on both sides
* Plot conversion graphs
* Direct proportion with recipes and money
* Powers and roots
 | * Percentage increase and decrease
* Plot graphs of y=mx+c
* Plot piecewise linear graphs
* Probability sum to one
* Real life graphs
* Two way-tables and frequency trees
* Sample space diagrams
* Area and circumference of circles
* Area of trapezia
* Share in a given ratio
* Part: part and part: whole
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| Unit D | * Fractions as decimals
* Round decimals
* Order positive and negative integers and decimals
* Rotations
* Translations as vectors
* Mean, mode, median and range
 | * Multiply decimals
* Mental calculations
* Order of operations with indices
* Angle facts including angles in a triangle
 | * Compare and order fractions
* Mixed numbers to improper fractions
* Add and subtract fractions with different denominators
* Algebraic notation
* Substitution
* Expanding single brackets
* Names of parts of circles
* Pie charts
 | * Multiply and divide by 10, 102 and 103
* Solve linear equations in one variable
* Convert measures of length, mass and volume using conversion graphs
 | * Use of decimal and fractional multipliers
* One amount as a percentage of another
* Percentages greater than 100%
* Horizontal and vertical graphs
* Simple graphs (y=mx)
* Calculate probabilities
* Similar shapes
* Area of triangles and parallelograms
* Volume of cuboids
* Ratio notation
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| Unit C | * Round to nearest integer
* Decimals as fractions
* Order decimals up to three decimal places
* Calculate across zero
* Coordinates in all four quadrants
* Reflection in axes
* Rotational symmetry
* Translation as vectors (basics)
 | * Negative numbers – addition and subtraction
* Grid Multiplication
* Short division
* Negative numbers – multiplication and division
* Order of operations BIDMAS
* Draw and measure angles
* Find missing angles at a point, on a straight line, vertically opposite
 | * Add and subtract fractions with same denominator
* Simplify fractions
* Compare and order fractions with same denominator or unit fractions
* Calculate fraction of amounts
* Collecting like terms
* Composite and dual bar charts
* Frequency polygons
* Properties of 2D shapes
* Nets
 | * Multiply and divide by 10, 100 and 1000
* Simple equivalent FDP
* Convert metric units
* Convert between metric and imperial units using given conversions
* Multiples and factors
* Prime numbers
* Square and cube numbers
 | * Calculate percentages
* Probability basics
* Perimeter of compound shapes
* Area of rectangles
* Volume by counting cubes
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| Unit B | * Place value up to 10 million
* Decimal place value
* Round to powers of 10
* Use negative numbers
* Line symmetry
* Translation - left, right, up, down
 | * Addition and subtraction including mental arithmetic
* Money
* Multiplication and division facts
* Acute, obtuse and reflex angles
 | * Calculate unit fractions of amounts
* Equivalent fractions
* Bar charts
* Properties of 2D and 3D shapes
 | * Convert simple fractions to decimals
* Convert units of time
* Measure and estimate using metric units
* Factor pairs and multiples
 | * Calculate simple percentages
* Simple FDP equivalents (1/2, 1/4, 1/5, 1/10 and 1/100)
* Convert between percentages to decimals
* Time tables
* Perimeter
* Area by counting squares
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| Unit A | * Place value up to 1000
* Reflecting shapes
* Simple translation
* Co-ordinates in the first quadrant
 | * Addition and subtraction
* Multiples and times tables
* Right angles and turns
 | * Find 1/2 and 1/4
* Simple equivalent fractions
* Understand pictures of simple fractions
* Pictograms and tally charts
* Recognise 2D and 3D shapes
 | * Convert tenths and hundredths to decimals
* Use 12 and 24 hour time
* Telling the time, basic time interval facts
 | * Recognise % symbol as “parts per hundred”
* Categorical data
* Perimeter by counting
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**Key**

Level 2 Further Maths Skill Higher GCSE Maths Skill

Foundation GCSE Maths Skill