**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 |
| 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 |
| 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 |
| 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 |
|  | **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 |
| 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 |
| 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 |
| 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 |
| 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 |

**Key**

Level 2 Further Maths Skill Higher GCSE Maths Skill

Foundation GCSE Maths Skill