

Maths Year 7 Curriculum

Curriculum Intent: All pupils will study Mathematical concepts within the six strands of Algebra, Number, Shape space and measure, Ratio and proportion, Data Handling and Probability. Within each topic area work will be introduced in a logical order with content broken down into “small steps” to reflect the building blocks of Maths. Pupils will develop fluency in reasoning and problem solving helping to prepare pupils for the rigorous demands of the subject. Opportunities are given for all pupils to make links between topics. Pupils will develop their skills through varied and intelligent practise in order to move from novice learners to experts with each “small step”

	Autumn Term 1			Autumn Term 2	
Main Topic	Algebraic thinking			Place value & proportion	
Secondary Topics	Sequences Describe sequences. Compare numerical and graphical forms. Use function machines with bar models.	Understand and use algebraic notation. Use algebraic notation. Understand inverse operations. Substitution and generating sequences. Represent sequences graphically.	Equality and equivalence Understand equality. Use fact families. Form/solve 1-step equations Equivalence of algebraic expressions Collect like terms	Place value and ordering Integer place value Decimal place value Intervals and number lines Compare and order numbers Range and median from a list Rounding to powers of 10 Rounding to 1 significant figure	Fraction, decimal and percentage equivalence Represent tenths and hundredths on number lines. Convert between fractions, decimals and percentages. Equivalent fractions Interpret pie charts. Index form Fractions above 1
Curriculum links	Efficient use of calculators and informal estimation			Solve equations with fractions Sequences with fractions Pie charts, median, range	
Cross-curricular links	Science - plotting graphs, looking for linear and non-linear relationships			Geography - data representation, calculating averages Science - data representation, calculating averages	
Interleaving of skills	Addition, plotting co-ordinates	Using substitution to generate sequences Links between a linear sequence and a linear graph	Use of numerical facts	Estimation	Solve equations with fractions Sequences with fractions
Literacy	Key Words: Describe, Term, Predict, Term-to-Term, Position, Graph, Linear, Non-linear, Constant Difference, Ascending, Geometric, Fibonacci, Descending, Integer, Arithmetic, Function, Input, Output, Inverse Operation, Bar model, Expression, Variable, Coefficient, Commutative, Substitute, Evaluate, Inverse, Order, Bracket, Operation, Order, Axes, Equality, is equal to, Fact families, Solve, Solution, Like, unlike, Equivalent, Collect, Simplify			Key Words: Represent, Value, Figures, Place Value, Interval, Equal Division, Scale, Approximate, Nearest, Round, Greater than, less than, Equal to, not equal to, ascending, descending, Order, Range, Difference, Median, Middle, Tenth, Hundredth, Decimal, Decimal Point, Compare, Billion, Significant Figure, Round, Power, Index, Standard Form, Ordinary, Power, Negative, Index, Standard Form, Tenths, Hundredths, Interval, Equivalent, Fraction, Decimal, Hundred Square, Denominator, Fifth, Quarter, Eighths, Thousandths, Percentage, Percent, Convert, Reasoning, Sector, Proportion, Equal Parts, Assumptions, Numerator, Division, Shared Equally, Efficient, Recurring, Improper Fraction, Mixed Number	
Cultural capital	Fibonacci sequence and links to nature			N/A	

Careers	Transferable skills: Problem solving, attention to detail, thinking skills, investigative skills, communication, resilience, determination Specific careers –			Transferable skills: Problem solving, attention to detail, thinking skills, investigative skills, communication, resilience, determination Specific careers –	
Assessment	KMP Mid-year exam End of year exam	KMP Mid-year exam End of year exam	KMP Mid-year exam End of year exam	KMP Mid-year exam End of year exam	KMP Mid-year exam End of year exam

Maths Year 7 Curriculum

	Spring Term 1			Spring Term 2	
Main Topic	Applications of number			Directed number & fractional thinking	
Secondary Topics	Addition & subtraction Mental methods Formal written methods Solve problems in Context of perimeter, money, frequency trees, tables, bar charts, line charts	Multiplication & division Multiply by 10, 100, 1000, 0.1, 0.01 Convert metric units HCF & LCM Area of shapes Finding the mean Order of operations	Fractions and percentages of amounts Simple fractions and % of amounts	Directed Number Order directed numbers 4 operations with directed number Using a calculator Solving 2-step equations Order of operations	Add & subtract fractions Tenths & hundredths on a number line Convert mixed numbers & improper fractions Add & subtract fractions Add and subtract fractions & decimals
Curriculum links	Perimeter: equations & simplifying Tables: distance charts & timetables Revisit rounding Order of operations: negatives			Inequalities: number lines Revisit sequences equations & substitution	
Cross-curricular links	Science formulae and equations Geography – use of statistical graphs				
Interleaving of skills	Equations with perimeter Simplifying expressions for perimeter	Rounding	FDP equivalences	Order of operations with negative Sequences with negatives (and decimals and fractions) Substitution Inequalities	FDP equivalences
Literacy	Key Words: Inverse, Commutative, Partition, Difference, Exchange, Placeholder, Estimating, Equivalence, Subtraction, Inverse, Place Value, Digit, Formal written method, Mental strategy, Length, Distance, Balance, Profit/ Loss, Column, Total, Frequency, Sum, Dual, Multiple, Power, Exponent, Product, Associative, Array, Venn Diagram, Multiple, Common, Place Value, Hundredths, Tenths, Ones, Kilo- , Milli- , Integer, Efficient, Adjust, Estimate, Divisor, Dividend, Quotient, Decimal, Priority, Operation, Perpendicular height, Parallel, Base, Perpendicular height, Trapezium,			Key Words: Positive, Negative, Ascending/ Descending, Greater/ Less than, Increase / Decrease, Difference, Zero pair, Partition, Negative, Minus, Product, Commutative, Multiply, Inverse, Sign change, Fraction button, Substitute, Order of operations, Solution, Zero pair, Solve, Balance, Indices, Brackets, Square root, Power, Root, Exponent, Equal parts, Congruent, Smaller/ bigger than, Unit fraction, Denominator, Mixed Number, Numerator, Whole, Partition, Equivalent, Multiple, Common Denominator, Lowest Common Multiple, Commutative, Improper fraction, Expression, Tenths, Hundredths, Like terms, In terms of	

	Parallel, Average, Range, Coefficient, Whole, Denominator, Equivalent, Numerator, Percent, Convert, Equivalent. Original				
Cultural capital	Enclosing a field in fencing Working out the areas of walls for painting and floors for tiling Understanding of the word “average” and why you must be wary Price reductions in sales VAT and other Taxes				
Careers	Transferable skills: Problem solving, attention to detail, thinking skills, investigative skills, communication, resilience, determination Specific careers –			Transferable skills: Problem solving, attention to detail, thinking skills, investigative skills, communication, resilience, determination Specific careers –	
Assessment	KMP Mid-year exam End of year exam	KMP End of year exam	KMP End of year exam	KMP End of year exam	KMP End of year exam

Maths Year 7 Curriculum

	Summer Term 1		Summer Term 2		
Main Topic	Lines and angles		Reasoning with number		
Secondary Topics	Construction and measuring Line and angle notation Draw and measure lines and angles Classify angles Parallel and perpendicular lines Types of triangles, quadrilaterals and other polygons Construct triangles given SSS,SAS,ASA Draw and interpret pie charts	Geometric reasoning Calculate and use angles at a point, angles on a straight line and vertically opposite angles Calculate missing angles in triangles and quadrilaterals	Developing number sense Mental arithmetic Use known facts to derive other facts Evaluate expressions Use estimation	Sets and probability Set notation Venn Diagrams and complement of a set Language probability Probability of a single event and sum of probabilities of an event.	Prime numbers and proof Prime, square and triangle numbers Powers and roots Conjectures and counter examples Prime factors with HCF and LCM
Curriculum links	Simplifying expressions, perimeter, equations Pie charts, mental methods for add and subtract		Fractions, decimals, % Factors and multiples		
Cross-curricular links	N/A		Science standard form and data		

Interleaving of skills	Proportional reasoning with pie charts	Simplifying expressions involving angles Solving equations with angles	Calculations Estimation Substitution		Factors, multiples and prime numbers Powers
Literacy	Key Words: Line Segment, Polygon, Length, Height, Degrees, Rotation, Acute/ Obtuse/ Reflex, Interior/ Exterior, Protractor, Measure, Construct, Scale, Construct, Perpendicular, Intersect, Isosceles, Equilateral, Parallelogram, Rhombus, Vertices, Edges, Pair of Compasses, Side, Point, Scalene, Regular, Diagonals, Frequency, Sector, Proportion, Angle, Degrees, Frequency, Sum, Adjacent, Notation, Vertically Opposite, Isosceles/ Equilateral/ Scalene, Right-angled, Convex, Concave, Straight Line, Transversal, Opposite, Alternate, Corresponding, Proof, Demonstration		Key Words: Associative, Commutative, Partition, Factors, Thousandths, Hundredths, Equal parts, Numerator/Denominator, Equivalent, Multiple, Significant Figures, Overestimate/ Underestimate, Addend, Quotient, Equation, Expression, Estimate, Interpret, Universal Set, Inclusive, Intersection, Mutually Exclusive, Element, And, Union, Or, Complement, Not, Random, Bias, Outcomes, Possibilities, Equally Likely, Equivalent, Certain, Fair, Impossible, Sum, Integer, Positive, Divisible, Remainder, Factor, Prime number, Investigate, Relationship, Factor, Factorising/ Factorise, Product, Common multiple, Prime Factor, Express, Explain, True/ False, Systematic, Assumption		
Cultural capital			Understanding of how likely something is to happen Links to games of chance and the likelihood of winning		
Careers	Transferable skills: Problem solving, attention to detail, thinking skills, investigative skills, communication, resilience, determination Specific careers –		Transferable skills: Problem solving, attention to detail, thinking skills, investigative skills, communication, resilience, determination Specific careers –		
Assessment	KMP End of year exam	KMP End of year exam	KMP	KMP	KMP