

# St Thomas More RC College



## Maths - Long-Term Plan

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Year 7	Topics to be covered:	Sequences  Understand & use algebraic notation	Equality & equivalence  Place value & ordering integers & decimals	Fraction, decimal & percentage equivalence Solving problems with addition & subtraction Solving problems with multiplication & division	Fractions & percentages of amounts Operations & equations with directed number Addition & subtraction of fractions	Constructing, measuring & using geometric notation Developing geometric reasoning	Developing number sense Sets & probability End of block
	Skills to be developed	Algebraic thinking	Place value & proportion	Applications of number	Applications of number Directed number Fractional thinking	Lines & Angles	Reasoning with number
	Key assessments taking place:	Baseline Assessment  End of block assessment (Sequences)  End of block assessment (Understand & use algebraic notation)	End of block assessment (Equality & equivalence)  End of block assessment (Place value & ordering integers & decimals)  Autumn Assessment	End of block assessment (Fraction, decimal & percentage equivalence)  End of block assessment (Solving problems with addition & subtraction)  End of block assessment (Solving problems with multiplication & division)	End of block assessment (Fractions & percentages of amounts)  End of block assessment (Operations & equations with directed number)  End of block assessment (Addition & subtraction of fractions)  Spring Assessment	End of block assessment (Constructing, measuring & using geometric notation)  End of block assessment (Developing geometric reasoning)	End of block assessment (Developing number sense)  End of block assessment (Sets & probability)  End of block (End of block)  END OF YEAR Assessment

Key vocab	<p>Term, Linear, Geometric, Fibonacci</p> <p>Function, Inverse, Input, Output, Variable, Coefficient, Commutative, Expression, Substitute</p>	<p>Integer, Interval, Greater than, Less than, Ascending, Descending, Range, Median, Average, Approximate, Significant figure, Index, Standard form</p>	<p>Equivalent, Percent, Sector, Denominator, Numerator, Quotients, Improper, Rational, Recurring</p> <p>Commutative, Associative, Partition, Polygon, Profit, Debit, Credit, Sum, Exponent</p>	<p>Reflection, Symmetric, Zero pair, Product, Solve, Solution, Indices</p> <p>Congruent, Lowest Common Multiple, Common denominator, Simplify</p>	<p>Rotation, Interior, Exterior, Protractor, Parallel, Perpendicular, Intersect, Equilateral, Isosceles, Scalene, Parallelogram, Rhombus, Trapezium, Vertices, Decagon, Pair of Compasses, Vertex, Proportion</p> <p>Vertically opposite, Convex, Concave, Conjecture, Transversal, Co-interior, Alternate, Corresponding</p>	<p>Factors, Overestimate, Underestimate, Efficient</p> <p>Universal set, Inclusive, Element, Venn diagram, Intersection, Union, Mutually exclusive, Complement, Bias, Event</p> <p>Factorise, Highest Common Factor, Counterexample, Assumption</p>
<p>Opportunities for retrieval practice:</p> <p>All lessons start with a <b>Do Now</b> that include 4 questions: one from each of the following: last lesson, last week, last topic and last term. These are planned with interleaving and spacing in mind to keep essential skills sharp and to help with retrieval.</p> <p>Sparx is also used for homeworks and as a useful revision tool.</p>						

**Long-Term Plan**

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
<b>Year 8</b>	Topics to be covered:	Geometric Notation Geometric reasoning Ratio and Scale Multiplicative Change	Multiplying and Dividing Fraction  Cartesian Plane Representing Data	Prime Numbers  Tables and Probability  Brackets, Equations & Inequalities	Sequences  Indices  Fractions and Percentages	Standard Form  Number Sense  Angles in Parallel Lines	Area of Trapezia and Circles  Lines of Symmetry  Data Handling Cycle
	Skills to be developed:	Geometric Reasoning Proportional Reasoning	Mathematical Representations	Algebraic Techniques	Algebraic Techniques	Developing Geometry	Developing Geometry & Reasoning with data
	Key assessments taking place:	End of block assessment (Geometric Notation & Geometric Reasoning)  End of block assessment (Ratio and Scale)  End of block assessment (Multiplicative Change)	End of block assessment (Multiplying and Dividing Fractions)  End of block assessment (Cartesian Plane)  End of block assessment (Representing Data)  Autumn Assessment	End of block assessment (Prime Numbers)  End of block assessment (Tables & Probability)  End of block assessment (Brackets, Equations & Inequalities)	End of block assessment (Sequences)  End of block assessment (Indices)  End of block assessment (Fractions and Percentages)  Spring Assessment	End of block assessment (Standard Form)  End of block assessment (Number Sense)  End of block assessment (Angles in Parallel Lines)	End of block assessment (Area of Trapezia and Circles)  End of block assessment (Lines of Symmetry)  End of block assessment (Data Handling Cycle)  End of Year Assessment
	Key vocab	Line Segment, Geometric Figure, polygon, length, height, width, degrees, rotation, acute, obtuse,	Unit fraction, numerator, denominator, product, repeated addition, square, whole,	Multiples, integer, positive, zero, factors, remainder, divisor, digit,, triangular	Position, term, linear, non-linear, Fibonacci, term to term, algebraic,	Base, index, power, exponent, negative, original, place value, commutative,	Formula, area, parallel, perpendicular height, compound,

	<p>interior, exterior, reflex, sum, measure, construct, protractor, compass, perpendicular, parallel, isosceles, equilateral, scalene</p> <p>Equal parts, for every, Relationship, Order, divide, multiply, part, multiplier, units, total, parts, factors, equivalent, simplify, factors, scale, compare, perimeter, circumference, constant, diameter, regular, gradient, slope, steep</p> <p>Proportion, double, triple, linear, variable, approximation, conversion, axes, rates, currency, directly proportional, origin, relationship, corresponding, scale factor, enlargement, length, image, not to scale, distance, metric</p>	<p>commutative, quotient, divide, estimate, convert, reciprocal, simplify, factors</p> <p>Quadrant, coordinates, horizontal, vertical, axis, origin, parallel, equation, diagonal, scale, linear, direct, unitary, gradient, input, output, symmetrical, equidistant</p> <p>Variable, Correlation, Positive, Negative, Extrapolate, outlier, discrete, continuous, qualitative, quantitatively, ungrouped, sub-total, tally, frequency, class, boundary</p>	<p>number, square number, highest common factor, factorising, lowest common multiple, prime, product</p> <p>Outcomes, sample space, set, systematic, chance, event, unbiased, set, intersection, union, region, order</p> <p>Expression, Simplify, term, substitute, coefficient, equivalent, Solve, expand, bracket, identity, factorise, like terms, binomial, quadratic, expand</p>	<p>linear, non-linear, position to term</p> <p>Index, power, multiply, expand,, base, exponent, product</p> <p>Decimal, numerator, denominator, equivalent, fraction key, rounding, conversion, tenth, hundredth, interest, profit, loss, original, invest, reverse,</p>	<p>scientific notation, zero, reciprocal, root</p> <p>Round, significant, power, integer, nearest, decimal, estimate, root, discrete, continuous, bound, order, priority, deposit, interest, balance, credit, metric, metre, prefix, area, perpendicular, dimensions</p> <p>Adjacent, vertically opposite, acute, obtuse, reflex, right angle, straight, transversal, alternate, corresponding, supplementary, co-interior, isosceles, equilateral scalene, rhombus, parallelogram, trapezium, kite, bisect, delta, interior, exterior, polygon, sum, regular, compass</p>	<p>component, sector, estimate, infinity, radius, pi, diameter</p> <p>Regular, polygon, isosceles, equilateral, reflect, congruent, vertical, horizontal, object, image, vertex</p> <p>Hypothesis, investigation, enquiry, sample, primary, secondary, biased, pictogram, bar chart, line chart, tally, frequency, scale, comparison, key, pie chart, scatter graph, bivariate, grouped, discrete, continuous, intervals, range, spread, average, consistent, distribution, mislead</p>
<p>Opportunities for retrieval practice:  All lessons start with a <b>Do Now</b> that include 4 questions: one from each of the following: last lesson, last week, last topic and last term. These are planned with interleaving and spacing in mind to keep essential skills sharp and to help with retrieval.</p>						

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### Long-Term Plan

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
<b>Year 9</b>	Topics to be covered:	Angles in parallel lines and polygons  Area of trapezia and circles  Straight Line Graphs	Forming and Solving Equations  Testing Conjecture  3D Shapes	Constructions and Congruency  Numbers  Using Percentages	Maths and Money  Deduction  Rotation and Translation	Pythagoras' Theorem  Enlargement and Similarity	Ratio and Proportion  Rates
	Skills to be developed:	Geometric Reasoning  Reasoning with algebra	Constructing in 2 & 3D Dimensions	Reasoning with Number	Reasoning with Geometry	Reasoning with Geometry	Reasoning with Proportion
	Key assessments taking place:	End of block assessment (Angles in Parallel lines and polygons)  End of block assessment (Area of trapezia and circles)	End of block assessment (Forming and Solving Equations)  End of block assessment (Testing Conjecture)	End of block assessment (Constructions and Congruency)  End of block assessment (Numbers)  End of block assessment (Using Percentages)	End of block assessment (Maths and Money)  End of block assessment (Deduction)	End of block assessment (Pythagoras' Theorem)  End of block assessment (Enlargement and Similarity)	End of block assessment (Rotation and Proportion)  End of block assessment (Rates)

		End of block assessment (Straight Line Graphs)	End of block assessment (3D Shapes)  Autumn Assessment		End of block assessment (Rotation and Translation)  Spring Assessment		End of Year Assessment
	Key vocab	Adjacent, vertically opposite, acute, obtuse, reflex, parallel, transversal, alternate, corresponding, supplementary, co- interior, isosceles, delta, interior, exterior, polygon, bisect, compass, line segment, bisector  Trapezium, perpendicular, compound, component shapes, sector, infinity, pi, radius, circumference, diameter, estimate, approximately  Axis, Parallel, Horizontal, vertical, equation, intercept, linear, function, gradient, positive, negative,	Inequality, unknown, inverse, solve, solution, expand, satisfy, greater than, less than, balance, coefficient, substitute, formula, subject, rearrange  Factor, Multiple, Prime, Common, Verify, Counterexample, prove, verify, demonstrate, expand, factorise, expression, binomial, quadratic  Dimensions, Cube cuboid, cylinder, cone, sphere, pyramid, tetrahedron, face, edge, vertex, polygon, prism, cross-section, net, area, plan, perspective, isometric, front/side elevation, formula,	Acute, obtuse, reflex, right angle, protractor, scale, ratio, multiply, conversion, units, locus, path, equidistant, construction lines, arc, perpendicular, bisector, line segment, congruent, identical, invariant, reflection, corresponding  Integer, real, rational, root, irrational, square root, cube root, surd, directed, operation, quotient, product, sum, remainder, adjust, compensate, operation, factor, prime product of primes, fraction, mixed number, improper fraction, standard form, index, exponent	Total, debit, credit, balance, expense, bill, percentage, interest, annual, deposit principle, rate, compound, multiplier, tax, value added, original, VAT, income, salary, wage, exemption, overtime, currency, convert, exchange, unitary  Alternate, corresponding, co- interior, transversal, parallel, isosceles, interior, exterior, regular, equation, polygon, conjecture, prove, counterexample, bisector	Square, square root, hypotenuse, right angled triangle, opposite, adjacent, sum, quadrant, negative, gradient  Ratio, scale factor, corresponding, object, image, centre, distance, position, fraction, inverted, orientation	Relationship, multiplier, scale factor, linear, non- linear, variable, gradient, inverse, product, proportional, share, equivalent  Speed, distance, time, hours, minutes, convert, accuracy, average, gradient, aces, density, mass, volume, re-arrange, units, constant rate, flow rate, curve, volume, conversion, rate of change, imperial, metric, convert

	intercept, co-ordinate, reciprocal	compound, perpendicular height, circumference, pi, height, width, length, commutative	Convert, equivalent, multiplier, increase, decrease, profit, loss, reverse, change, original, repeated, depreciate, exponent	Symmetry, order, regular, irregular, Rotational, mirror, direction, invariant, clockwise, anti- clockwise, centre, translate, vector, horizontal, vertical		
<p>Opportunities for retrieval practice:</p> <p>All lessons start with a <b>Do Now</b> that include 4 questions: one from each of the following: last lesson, last week, last topic and last term. These are planned with interleaving and spacing in mind to keep essential skills sharp and to help with retrieval.</p> <p>Sparx is also used for homeworks and as a useful revision tool.</p>						

### Long-Term Plan

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
<b>Year 10</b>	Topics to be covered:	Congruency, Similarity & enlargement  Pythagoras and trigonometry	Representing solutions of equations and inequalities  Simultaneous equations	Angles and Bearings  Working with circles  Vectors	Ratio and fractions  Percentage & interest  Probability	Collecting, representing & interpreting data  Non-calculator methods  Types of numbers and sequences	Indices and roots  Manipulating expressions
	Skills to be developed:	Develop fluency  Reason mathematically  Solve problems	Develop fluency  Reason mathematically  Solve problems	Develop fluency  Reason mathematically  Solve problems	Develop fluency  Reason mathematically  Solve problems	Develop fluency  Reason mathematically  Solve problems	Develop fluency  Reason mathematically  Solve problems
	Key assessments	End of block assessment (Congruency, Similarity & enlargement)	End of block assessment (Representing solutions)	End of block assessment (Angles and Bearings)	End of block assessment (Ratio and fractions)	End of block assessment (Collecting,	End of block assessment (Indices and roots)



		End of block assessment (Pythagoras and trigonometry)	of equations and inequalities) End of block assessment (Simultaneous equations) End of term assessment	End of block assessment (Working with circles) End of block assessment (Vectors)	End of block assessment (Percentage & interest) End of block assessment (Probability) End of term assessment	representing & interpreting data) End of block assessment (Non-calculator methods) End of block assessment (Types of numbers and sequences)	End of block assessment (Manipulating expressions) End of year assessment
Key vocab	Enlarge, Scale factor, ratio, origin, object, image, fractional, centre of enlargement, negative scale factor, proportion, correspond, parallel, alternate, co-interior, similar, congruent  Hypotenuse, square root, significant figure, decimal place, right angle, opposite, adjacent, gradient, tangent, formula, sine, cosine, complement, tangent, inverse, surd	Variable, solve, equation, solution, expression, inverse, balance, inequality, invers, solution set, greater/less than, union, set notation, gradient, y-intercept, linear, coordinate, intersect, region, test position, roots, quadratic, factorise, intercept  Variable, infinite, finite, substitute, verify, subject, re-arrange, simultaneous, intersect, eliminate, coefficient, multiplier, context, linear, non linear	Compass, point, angle, protractor, convert, similar, north line, clockwise, due east/west, scale, construct, parallel, alternate, corresponding, trigonometry, perpendicular  Radius, diameter, chord, centre, tangent, arc, sector, segment, circumference, minor/major, subtend, isosceles, Pythagoras, cyclic, cylinder, cone, base, frustum, sphere  Column vector, direction, scalar, magnitude, direction, parallel, multiplier,	Ratio, simplest form, convert, equivalent, share, part, whole, fraction, convert, compare, gradient, origin, equation, direct proportion, exchange, bearing, unit  Fraction, decimal, percentage, equivalent, convert, multiplier, increase, decrease, reduce, numerator, denominator, simple, compound, interest, power, index, exponent, depreciated, reverse, growth,	Population, sample, representation, biased, random, proportional, stratified, primary/secondary data, source, experiment, questionnaire, midpoint, endpoint, class, interval, composite, sector, broken axis, histogram, class width, frequency density, mean, mode, outlier, median, interquartile range  Credit, debit, profit, loss, balance, volume, area, perimeter, mixed number, improper fraction, integer,	Prime, exponent, standard form, power, index, base, non-unit fraction  Simplify, coefficient, term, variable, identity, equivalent, invert, reciprocal, product, quotient, factorise, solution set, inequality, counterexample	

				opposite, resultant, common point, collinear	decay, . Iterate, geometric, subscript  Outcome, equally likely, event, denominator, numerator, complement, venn diagram, union, relative frequency, estimate, expectation, universal set, sample space, systematic, array, conditional	terminating, root, surd, square root, error interval, upper/lower bound, truncate  Factor, multiply, prime, index form, intersection, HCF, LCM, common difference, arithmetic, geometric, triangular, oscillate, Fibonacci, term to term, linear, non-linear, quadratic	
<p>Opportunities for retrieval practice:</p> <p>All lessons start with a <b>Do Now</b> that include 4 questions: one from each of the following: last lesson, last week, last topic and last term. These are planned with interleaving and spacing in mind to keep essential skills sharp and to help with retrieval.</p> <p>Sparx is also used for homeworks and as a useful revision tool.</p>							

### Long-Term Plan

		Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
<b>Year 11</b>	Topics to be covered:	Inequalities  Properties of straight line graphs	Volume and Surface Area	Transformations  Similarity and congruency	Vectors  Drawing linear, quadratic, cubic, exponential,	Pupils follow a bespoke programme of study based on strengths and weaknesses taken	

	<p>Compound Measures</p> <p>Sine and Cosine Rule (H)</p> <p>3D Trigonometry (H)</p> <p>Bearings</p> <p>Plans and Elevations</p> <p>Circle Theorems</p>	<p>Probability: sample spaces, Venn diagrams and Sets, tree diagrams</p> <p>Sequences: nth terms, generating quadratic sequences, Fibonacci</p> <p>Straight line graphs: parallel and perpendicular lines (H)</p>	<p>Velocity-Time Graphs (H)</p> <p>Areas under curves (H)</p>	<p>reciprocal graphs, trigonometric graphs (H), Equation of a circle (H)</p> <p>Recognise and sketch graphs</p>	<p>from November mock and other assessments.</p>	
Skills to be developed:	<p>Develop fluency</p> <p>Reason mathematically</p> <p>Solve problems</p>	<p>Develop fluency</p> <p>Reason mathematically</p> <p>Solve problems</p>	<p>Develop fluency</p> <p>Reason mathematically</p> <p>Solve problems</p>	<p>Develop fluency</p> <p>Reason mathematically</p> <p>Solve problems</p>	<p>Develop fluency</p> <p>Reason mathematically</p> <p>Solve problems</p>	
Key assessments taking place:	<p>Assessment Task to take place after each unit</p>	<p>Assessment Task to take place after each unit</p>	<p>November Mocks</p>	<p>Assessment Task to take place after each unit</p>	<p>March Mocks</p>	
Key vocab	<p>Perpendicular, intercept, gradient, hypotenuse, opposite, adjacent,</p>	<p>sample space, Venn, universal set, tree diagrams, nth term, quadratic, Fibonacci</p>	<p>transformation, scale factor</p>	<p>column vector, congruent, similar, linear, quadratic,</p>		

		tangent, sine, cosine, tangent			cubic, exponential, reciprocal		
<p>Opportunities for retrieval practice:</p> <p>All lessons start with a <b>Do Now</b> that include 4 questions: one from each of the following: last lesson, last week, last topic and last term. These are planned with interleaving and spacing in mind to keep essential skills sharp and to help with retrieval.</p> <p>Sparx is also used for homeworks.</p>							