Birches Head Academy

Maths

Part of the Frank Field Education Trust

KS3 Curriculum Plan

Year 7

	LP1	LP2	LP3	LP4	LP5
TOPIC	***Number sense and calculations:***	***Expressions and equations, Measures, 2D Shapes and Perimeter:***	***Area, Coordinates, Factors, multiples and primes, Write and compare fractions.***	***Add and subtract fractions, Brackets, Angles, Handling data and statistical diagrams.***	***Proportion word problems, Multiplying and dividing fractions, Fractions of amounts, Fractions, decimals and percentages,***
Knowledge	Number sense, Adding and subtracting, Multiplying, Dividing, Calculating with negative numbers, Order of operations	Expressions, Substitution, Solving equations, Time, Measures, Line and shape properties, Perimeter	Area, Coordinates and shapes, Factors and multiples, Primes, Writing and comparing fractions	Adding and subtracting fractions, Single brackets, Angles, Finding unknown angles, Averages and range, Tables and charts, Collecting and presenting data	Proportion word problems, Multiplying and dividing fractions, Fractions of amounts, Fractions, decimals and percentages, Theoretical probability,
Procedural knowledge	Apply and demonstrate knowledge and understanding of mathematical skills to problem solve, using a range of modelling & mathematical representations. Use reasoning strategies to investigate mathematical concepts. Prove conjectures within the maths content taught.				
Key Vocab	Negative, integer, divisor, metric, numerator, denominator, improper fraction.	Linear, expression, terms, equivalence, equality, integer, negative, perimeter, edge, vertex, face, minute, hour, second	Units squared, multiply, factor, multiple, prime, numerator, denominator equivalent, common, co-ordinate	Fractional thinking Mixed number, numerator, denominator, improper fraction, convert, non-unit fraction, equivalent, multiple, lowest common multiple, common denominator, expression, equation, evaluate Geometric reasoning adjacent, vertex, vertically opposite angles, find, give reason, properties, parallelogram kite, interior angle,	Probability set, element, universal set, inclusive, intersection, union, compliment, probability, random, sample space, biased, equally likely, outcome. Proportion, numerator, improper fraction, percent, certain,

Year 8

	LP1	LP2	LP3	LP4	LP5
TOPIC	***Percentages, Money, Indices, Equations, Sequences***	***Ratio, Rounding, Coordinates***	***Area, Circles, Standard form, Venn diagrams, 3D shapes***	***Surface area and volume, Linear graphs, Transformations, Angles, Statistical diagrams***	***Statistical diagrams, Inequalities, Brackets, Algebraic fractions, Recurring decimals***
Knowledge	Percentages of amounts, Percentage change, Calculating with money, Index laws, Solving equations, Term-to-term rules, Position-to-term rules,	Ratio, Scale diagrams, Significant figures, Coordinates and midpoints	Area and units, Area and circumference, Standard form and ordinary numbers, Venn diagrams, Factors, multiples and primes, Nets	Surface area, Volume, Plotting graphs and finding equations, Transforming shapes, Finding unknown angles, Drawing and interpreting statistical diagrams	Drawing and interpreting statistical diagrams, Linear inequalities, Double brackets, Fractions review, Algebraic fractions, Fractions and recurring decimals
Procedural knowledge	Apply and demonstrate knowledge and understanding of mathematical skills to problem solve, using a range of modelling & mathematical representations. Use reasoning strategies to investigate mathematical concepts. Prove conjectures within the maths content taught.				
Key Vocab	Indices Expression, power, index, indices, base, simplify. Brackets Equations and Inequalities Solve, solution, inequality, solution set, satisfy, unknown, check, variable, formula, identity, equation. Percentages Equivalent, Multiplier, Profit, Loss, Original value, Reverse percentage, Repeated percentage change, Depreciate. Maths & money Bill, Balance, Credit, Debit, Interest, Deposit, Per	Ratio Ratio, proportion, comparison bar models, double number line, divide in a ratio, simplify, equivalent, factor, highest common factor (HCF), diameter, radius, circumference, gradient. Coordinates Quadrant, origin, coordinate, parallel, Linear, direct proportion, gradient, y-intercept, negative, non-linear, curve, midpoint, line segment Rounding Significant figure, estimate, order of operations	Area of circles Area, formula, perpendicular height, sector, radius, diameter, Pi, compound shape Standard Index Form Base, index, power, standard form, commutative, reciprocal, square root, cube root. Venn diagrams Set, subset, universal set. Intersect, and, or probability. 3D shapes Vertex, edge, face, surface area, volume, width	Statistical diagrams Linear, correlation, origin, outlier, discrete, continuous, qualitative, quantitative, frequency, grouped data, class interval, two-way table, sample space, probability, random, Venn diagram, outcome. Angles Adjacent, vertically opposite angles, alternative angles, co-interior angles, corresponding angles, transversal, bisect, construct, diagonal, isosceles, exterior angle, interior angle, polygon, regular polygon, give a reason, proof, bisector, construct	Statistical diagrams Linear, correlation, origin, outlier, discrete, continuous, qualitative, quantitative, frequency, grouped data, class interval, two-way table, sample space, probability, random, Venn diagram, outcome. Algebraic fractions Solve, solution, inequality, solution set, satisfy, unknown, check, variable, formula, identity, equation, denominator, numerator. Brackets Equations and Inequalities Term, expression, coefficient, simplify, substitute

Year 9

	LP1	LP2	LP3	LP4	LP5
TOPIC	***Fractions and percentages*** ***Probability*** ***Standard form*** ***Inequalities*** ***Quadratic equations***	***Formulae*** ***Constructions*** ***Circles*** ***Rounding*** ***3D shapes*** ***Pythagoras' theorem***	***Pythagoras' theorem*** ***Ratio and proportion*** ***Linear graphs*** ***Compound measures***	***Motion-time graphs*** ***Quadratic graphs*** ***Angles and bearings*** ***Transformations*** ***Similarity and congruence***	***Similarity and congruence*** ***Handling data and statistical diagrams*** ***Vectors***
Knowledge	Fractions, decimals and percentages review, Percentage change, Theoretical and experimental probability, Calculations with standard form, Linear inequalities, Factorising and solving quadratic equations	Rearranging formulae, Constructing bisectors and perpendicular lines, Circles and cylinders, Error intervals, Representations of 3D shapes, Pythagoras' theorem in 2D	Pythagoras' theorem in 2D, Ratio, Proportion word problems, Plotting graphs and finding, equations, Speed and rates	Distance-time graphs, Plotting and interpreting quadratic graphs, Angles, Bearings, Transforming shapes, Similarity	Congruence, Scatter graphs, Collecting and presenting data, Grouped data, Column vectors
Procedural knowledge	Apply and demonstrate knowledge and understanding of mathematical skills to problem solve, using a range of modelling & mathematical representations. Use reasoning strategies to investigate mathematical concepts. Prove conjectures within the maths content taught.				
Key Vocab	Fractions & Percentages Equivalent, Multiplier, Profit, Loss, Original value, Reverse percentage, Repeated percentage change, Depreciate, numerator, denominator. Probability Probability, Relative frequency, expected outcomes, Fair, Independent events, Tree diagram, Replacement. Standard Index Form Base, index, power, standard form, commutative, reciprocal, square root, cube root. Inequalities Equation, solve, brackets, inequality, integer, two-sided inequality. Quadratics Quadratic, Parabola, Piece-wise graph, Simultaneous, Graphical, point of intersection, Inequality, Satisfy	Three Dimensional Shapes: 2D-shapes, 3D-shapes, Edge, Vertex (plural: vertices) Face, Prism, Net, Plan, View, Elevation, Isometric drawing, Area, Perpendicular, Compound Shape, Surface Area, Volume, capacity, Cross-section, Prism, Pythagoras Theorem Square root, Hypotenuse, Right angle, Isosceles, Perpendicular, Line segment, Midpoint, Dimensions Rounding Significant figure, Estimate, Error interval, Decimal, Negative number, Directed number, Formulae Expression, equation, identity, formula, variables, substitute, rearrange, subject. Constructions Construct, Sketch, Acute, Obtuse, Scale, Locus (plural: loci), Equidistant, Bisector, Congruent, Orientation, Hypotenuse Circles Pi, radius, diameter, tangent, area, circumference,	Pythagoras Theorem Square root, Hypotenuse, Right angle, Isosceles, Perpendicular, Line segment, Midpoint, Dimensions Ratio & proportion Direct proportion, conversion graph, unitary method, Inverse proportion, Unit cost/price, best buy, Ratio, divide into a ratio, multiplier. Linear Graphs: Table of Values, Parallel, Axis, Coordinate, Gradient, Intercept, Equation, Inverse Proportion, Perpendicular, Reciprocal Compound measures Rate, Speed, Gradient, Constant, Density, Mass, Volume, steepness	Motion-time graphs Speed, distance, stationary, time, axes, area. Quadratic graphs Quadratic, Parabola, Piece-wise graph, Simultaneous, Graphical, point of intersection, Inequality, Satisfy, axes, origin, intercept, root, turning point. Angles and bearings North, clockwise, angle, degrees, digits, Transformations Rotational symmetry, Line of symmetry, Irregular, Regular, Rotation, Vertex, Congruent Translation, Transformation, Reflection, Orientation, Enlargement, Similar, Scale factor, Dimensions, Centre of enlargement, Fractional scale factor, Vector, Similarity and congruence Similar, Scale factor, Dimensions, Trigonometry, Hypothenuse, opposite sides/angles, Adjacent sides/angles, congruent,	Similarity and congruence Similar, Scale factor, Dimensions, Trigonometry, Hypothenuse, opposite sides/angles, Adjacent sides/angles, congruent, SSS,SAS,ASA,RHS Data handling and Statistical diagrams Linear, correlation, origin, outlier, discrete, continuous, qualitative, quantitative, frequency, grouped data, class interval, two-way table, sample space, probability, random, Venn diagram, outcome. Vectors Direction, column, magnitude, midpoint