

Curriculum Overview - Mathematics

7	Lower sets	Middle Sets	Higher Sets
Autumn	Analysing & Displaying Data Understanding pictograms and tables, Interpret bar charts, Grouped data, Averages Calculating Addition, Subtraction, Multiplication, Factors, Multiples, rounding Time Reading analogue clocks, using analogue and digital clocks, interpreting how long, converting 12.24 hr time, timetables and journey planning Expressions & formulae Function machines, simplify, write expressions & formula, Substitute Graphs Real-life graphs, Coordinates, linear graphs, scientific graphs	Analysing and Displaying data Averages, Charts and tables, grouped data, line graphs, dual bar charts, compound bar charts Number Skills Bidmas, Add/Subtract large numbers, Multiply/Divide Large numbers, Time problems, Money problems, Negative numbers, Factors, Multiples, Primes, HCF, LCM Expressions, Formulae Functions, simplify, expressions, substitute, formulae Decimals and Measures Order, round decimals, convert measurements, scale and coordinates, + - x, ÷ decimals, perimeter, area	Data Compound and dual bar charts, two way tables, Averages from tables, Averages from grouped tables, line graphs, pie charts, scatter graphs and correlation. Number Factors, multiples, primes, Negative numbers, multiplying and dividing, powers and roots, Estimating and Bidmas Equations, functions, formulae Simplifying algebra, writing expressions, using formulae substitution, powers, expanding brackets, factorising Fractions: Compare fractions, add and subtract, multiply and divide fractions, compare fractions, decimals and %, Mixed numbers
Spring	Factors and Multiples Bidmas, Multiples, Multiplication, Division, Factors, Primes, HCF and LCM Decimals and Measures Read scales, Using decimals, Metric units, Rounding decimals, Estimate, Multiply decimals, Divide decimals, Money problems Angles Recognise angles and lines, Measure, Draw angles, Calculate angles on line and at a point Measuring and Shape Recognise shapes, Symmetry, Rotational symmetry, Regular polygons, Perimeter, Area	Fractions, Decimals and % Compare and order fractions, improper fractions/mixed numbers, + - fractions, fractions of amounts, convert % amounts Probability Calculate probability, Probability NOT happening, Sample space diagram, estimate events, expected outcome Ratio and Proportion Direct proportion, writing ratios, Share in a ratio, Scale Lines and angles 1 Label lines and angles, draw/measure angles,	Angles: Angles in triangles, quadrilaterals, vertically opposite, in quadrilaterals. Angles in parallel lines, Polygons and Regular polygons Decimals: Ordering decimals, round decimals, add, subtract, multiply and divide decimals, fdp, calculate %, increase %, reverse % Equations Solve 1 step and 2 step equations, solve equations with brackets, set up equations from diagrams, Substitution, (Trial and Improvement) Multiplicative Reasoning Metric & Imperial units, simplify ratios, sharing ratios, ratios as fractions, proportions, direct proportion, inverse proportion, best buys

	Lower Sets	Middle Sets	Higher Sets
Summer	Measuring and Shape Cont... Recognise shapes, Symmetry, Rotational symmetry, Regular polygons, Perimeter, Area Fractions, decimals and % Compare fractions, Equivalent fractions, calculating fractions, adding and subtracting fractions, Basic %, Finding %, Increasing and decreasing by % Transformations Reflection, rotation, translation, congruent shapes, plans and views Probability Probability scale, probability words, calculate simple probability, events not happening	Lines and angles 2 Draw triangles accurately, missing angles, interior, exterior angles, angles in quadrilaterals Sequences and Graphs Generate, Find patterns, nth term, coordinate, midpoint, linear graphs Transformations Congruent, Enlargement, Reflection, Rotation, Translation	Perimeter, Area and Volume Area triangles, parallelograms, trapeziums, compound shapes, 3D solids, surface area, volume, Measures of volume and area Sequences and graphs Sequences, nth term, sequences from diagrams, co-ordinates and line segments, Graphs Probability Calculate probability, events not happening, Sample space diagrams Transformations Congruent, Enlargement, Reflection, Rotation, Translation

8	Lower sets	Middle sets	Higher sets
Autumn	Number Properties and calculations Multiply large numbers, Calculate negative numbers, simplify ratio, Share ratio, proportion Shapes and Measures 3D Shapes, Draw isometric paper, Nets of solids, Surface area, Volume, Metric measures Time Reading analogue clocks, using analogue and digital clocks, interpreting how long, converting 12.24 hr time, timetables and journey planning Statistics Collecting data, Bar charts, Compound bar charts, Pie charts, 2 way table Expressions and Equations Simplify expressions, Function machines, Solve equations, Expand brackets	Number + - decimals, Calculate negative numbers, Squares, Cubes, Roots, Multiples, Factors, Prime factors, LCM, HCF Area and Volume Area of triangles, Parallelograms, Trapezium, Volume cubes cuboids, nets, solids, views, elevation, Surface area Statistics Pie charts, averages from tables, 2 way table, stem and leaf diagrams, line graphs, scatter graphs, Expressions and Equations Simplify expressions, Substitute, Expand brackets, Factorise, Solve equations, unknowns both sides, Set up equations Real -life graphs Conversion graphs, Distance-time graphs, Line graphs, Real-life graphs, Linear graphs	Factors and Powers Prime factors, HCF and LCM large numbers , powers, powers of 10, rounding, significant figures, estimating Algebra 1 Simplifying expressions, expanding 2 brackets, laws of indices, factorising, algebra in shapes, equations, unknowns both sides 2D shapes and 3D solids Nets, Plans and elevations, surface are of prisms, volume of prisms circumference of circles, area of circles, Cylinders, Pythagoras Real –life Graphs Simple direct proportion, inverse proportion, interpreting line graphs, trends, distance time graphs, rates of change, misleading graphs
Spring	Decimal Calculations Add and Subtract decimals, multiply decimals, Order and	Decimals and Ratio Order and round decimals, multiplying decimals, divide	Transformations Translate, Reflect, Rotate, Enlarge, Negative Enlargement, Combine

	round decimals, problem solve decimals Angles Measure, draw angles, Estimate angles, calculate angles on line and at a point, angles in special triangles, vertically opposite angles, draw triangles accurately Number Properties Squares, Cubes, Square roots, Cube roots, Bidmas, Powers, Indices, LCM, HCF, Prime, Prime Factors	decimals, Share in a ratio, unit ratios Lines and Angles Quadrilaterals, Alternate angles, Corresponding angles, Interior angles, Exterior and Interior angles, Regular polygons, Set up equations from diagrams Calculating with fractions + - fractions, convert top heavy-mixed numbers, multiply fractions, divide fractions, Convert fractions to decimals, calculate mixed numbers	transformations, Symmetries, ratio of L:A:V Fractions, Decimals and % Convert fractions, decimals and %, Reverse %, % change, Simple/compound interest, Repeated % change Constructions and Loci Accurately draw triangles, Construct triangles and angles, Line and angle bisectors, Loci Probability Calculate probabilities, fair or not, probability of event not happening, relative frequency, estimated frequencies, experimental probabilities, Venn diagrams, Simple tree diagrams
Summer	Sequences Next term, Generate, term-to-term, real-life sequences, special sequences, Use nth term, find nth term Fraction, decimal, % Compare fractions, simplify, fractions of amounts, add & Subtract fractions, Change fractions -> %, % amounts Probability Language of probability, calculate probability, List outcomes, Probability NOT happening, Experimental probability Transformations Reflection, rotation, translation, congruent shapes, plans and views	Straight line graphs Gradients, draw graph from table, Midpoint of graph, Y-intercept, $y = mx + c$, direct proportion Fraction, decimal, % Order fractions, convert fractions, dec, %, Write %, work out % increase or decrease, multiplier, find original given % Probability Calculate probability, List outcomes, Probability NOT happening, Experimental probability, expectation Transformations Reflection, rotation, translation, congruent shapes, plans and views	Scale Drawings and Measures Convert metric measures, use scale, bearings, accurate scale drawings, congruent and similar shapes, Similarity and compound shape similarity Graphs Straight line graphs, gradient, $y = mx + c$, inverse functions, non-linear graphs

9	Lower sets	Higher sets
Autumn	Number: + - x ÷ Negative numbers, + - x ÷ decimals, Bidmas Geometry and measures: Convert metric units, order different units, use scales, 3d shapes, plans, views, elevation, nets, isometric drawings Statistics: Frequency tables, pictogram, bar chart, line graph, compare line graphs, averages, justify averages, averages from tables, averages from grouped tables	Basic number Number Calcs, Significant figures, Estimating, Prime factors HCF, LCM, Negative numbers Fractions, ratios and proportion Find value, given fraction, reciprocals, + - x ÷ fractions and Mixed Numbers, % of amount, % increase, decrease, % Change, Reverse %, Compound interest. Find interest rate Stats diagrams and averages Averages from tables, Averages from grouped tables, Scatter diagrams Algebra Manipulation

	Algebra: Expressions and formulae, substitute, expand single brackets, 2 brackets and double brackets, factorise 1 bracket, 2 brackets, Change the subject Number: Factors, Multiples and Primes, LCM, HCF, Prime factors, LCM and HCF of Venn Diagrams, square, cube numbers, square and cube roots, complicated calculator	Factorise, expand, expand 3 brackets, change subject, Quadratic Factorisation Ratio and proportion Simplify ratio, share ratio, ratio with parts missing, combined ratio, Direct proportion problems, inverse proportion problems, Best Buys, Compound Measures, SDT, MDV, FPA Angles Angles lines, triangles, VO, quadrilateral, parallel lines, angles in polygons, regular polygons, bearings and scale Transformations, constructions and loci Congruent triangles, Transformations, combined transformations
Spring	Number: Rounding decimals and large numbers. Significant figures, estimation, estimate square roots Number: Decimals and fractions, converting fractions, decimals and %, reciprocal, fractions of amounts, + - x ÷ fractions and mixed numbers Geometry and measures: Angles at point, on line, vertically opposite, in triangles, special triangles, quadrilaterals special quadrilaterals, interior angles polygons and regular polygons, Ratio and proportion and rates of change: Ratio, speed, distance, time, Multistep SDT, proportion, best buy	Transformations, constructions and loci Cont.: Line/angle bisectors, other construction, 3D plans/views etc. Number & Sequences Generate linear sequences, find linear nth term, generate quadratic sequences, find nth term quadratic sequences Length, area and Volume Circles and part circles, Parallelograms and trapeziums, arc length, sector area, Volume prisms, Surface area prisms, Cylinders Graphs Draw linear graphs from tables, Gradient, $y = mx + c$, find equation of graph, Real life graphs, Midpoints of graphs, Conversion graphs, interpret real life graphs, Parallel and perpendicular graphs Right-angled triangles Pythagoras, Apply Pythagoras, 3D Pythagoras, Trigonometry, Apply Trig, Trig in isosceles triangles
Summer	Geometry and measures: Perimeter and area, shapes, compound shapes, circles, parts of circles Geometry and measures: Transformations, symmetry Probability 2-way table, frequency tree, expectation, combinations, sample space Geometry and measures: Volumes and surface areas of prisms Linear Graphs: Recognise simple graphs, draw linear graphs using a table, gradients, use $y = mx + c$, Interpret gradient and y-intercept of graph. Match graphs to real situations. Solve simultaneous equations using graphs	Exploring and applying probability Experimental probability, Mutually exclusive events, Exhaustive outcomes, Expectation, 2 way tables, Venn diagrams Powers and standard form Laws of indices, Standard form Equations Linear equations, unknowns both sides, set up and solve equations, simultaneous equations Counting, accuracy, powers and surds Surds, Limits and bounds

10	Foundation	Higher
Autumn	Algebra Expand brackets, factorise, expand double brackets, factorise quadratics Carried from Y9 due to COVID Algebra Solve Linear equations, solve with Brackets, Unknowns both sides Set up and solve, Change the subject Geometry and measures: Volume and Surface area Prisms and Cylinders May need to review area 1st, covered during lockdown Number: Convert fractions, decimals and %, Calculate fractions and % amount Convert fractions, decimals and %, Calculate fractions and % amount, increase. Decrease by %, repeated % change, Writing %, reverse % Compound Measures SDT, MDV, Direct & inverse proportion Geometry and measures: Transformations, symmetry	Algebra and number: Reinforce equations, Draw and solve inequalities, Inequality regions, reciprocals, Converting recurring decimals to fractions Counting, accuracy, powers and surds Laws of indices, negative and fractional powers, Surds, Rationalise denominator, error interval and limits and bounds Quadratic equations Plotting quadratic graphs, factorising quadratics, solving by factorising, solving using formula, Complete the square Significant points of the curve. Solve quadratic inequalities DATA: Diagrams Frequency Polygons, Cumulative Frequency, Box plots, Histograms, sample space, Tree Diagrams, Conditional Probability, Independent events
Spring	Statistics: Pie charts, Scatter diagrams, Averages from tables, Estimated mean Number and sequences Extend patterns, generate, find nth term, Special number sequences Geometry and measures: Circles, parts of circles, donut problems Was taught during Lockdown Pythagoras, apply Pythagoras, Trigonometry to find sides and angles, Exact Trig, Apply Trig Probability: Probability, Venn diagrams and notation, Tree Diagrams Number Laws of indices, standard form, calculate with standard form	Properties of circles Circle Theorems, Cyclic quadrilaterals, Tangents and Chords, Alternate segment theorem Similar shapes Missing sides, compound shapes, ratio area/length/vol Variation Direct and Inverse proportion using the constant of proportionality Triangles Pythagoras, 3D pythagoras, Exact Trig, Trig, 3D Trig, Sine Rule, Cosine Rule, Area any triangle Volume and Surface area Prisms, cones, Pyramids and Spheres
	Algebra: Non-linear graphs, Real life graphs, Velocity time graphs, Quadratic graphs, solve quadratics by factorising, Draw cubic graphs Geometry and measures: Congruency triangles, similar shapes, similar compound shapes, Ratio in similar shape A:L:V Algebra: Simultaneous equations, draw linear inequalities, state integers for inequalities, solve inequalities Geometry and measures: Constructions and loci Vectors: Describe, add and multiply vectors	Graphs Distance time graphs, Velocity time graphs, Estimating area under curve, Rates of change, Algebraic fractions and functions 4 rules algebraic fractions, simplify algebraic fractions, change subject of formulae, functions, composite & Inverse functions, Iteration Algebraic Proof Data: Capture, recapture, Stratified sampling

11	Foundation	Higher
Autumn	Number Review: Product of primes, fractions and mixed numbers, fractions, %, decimals, fraction, % ratio problem Algebra Review: Simplify, expand, Solve, Substitute, setup and solve, inequalities DATA Review: Venn diagrams, Averages, Averages from tables, estimated mean, Frequency polygons, Probability, Probability trees and Pie charts Number: Best Buy, Direct and inverse proportion, Simple and compound interest, Error intervals and limits SSM: Angles, Regular polygons, multi-step sdt, mdv, bearings, Scale, Pythagoras, Trig Algebra: Factorise, Factorise quadratics Algebra: Non-linear graphs, Real life graphs, Velocity time graphs, Quadratic graphs, solve quadratics by factorising, Draw cubic graphs,	Number Review Compound interest, Reverse %, Direct and Inverse proportion, Surds Algebraic fractions and functions 4 rules algebraic fractions, simplify algebraic fractions, change functions, composite & Inverse function, Iteration, nth term of quadratic Data Review Probability trees, Cumulative Frequency, Box Plots, Histograms, Venn Diagrams, Capture/recapture, combinations, stratified sampling, Product rule for counting Graphs Gradient, y-intercept, equation, midpoint, parallel and perpendicular graphs, acceleration and area under curve Transformations, constructions and loci Congruent triangles, Transformations, combined transformations Similar shapes and Congruent triangles Missing sides, compound shapes, ratio area/length/vol Algebraic Proof Prove algebraic statements are correct. Prove odd and even numbers, multiples of a number etc. Geometric proof
Spring	SSM: Transformations, Plans and elevations, Similar shapes, conversion graphs Number: Standard Form, Reverse %, deposits, exchange rates ALGEBRA: nth term, setup and solve, simultaneous equations REVISION COMPLETE Exam Papers AIMING for Booklets BY TOPIC REVISION	Vector Geometry + x vectors, vector geometry, prove lines and parallel Trigonometry review Sine rule, Cosine rule, Area of any triangle, Trig graphs, Exact trig ALGEBRA: simultaneous equations one linear, one quadratic, Inequality regions, Solve quadratic inequalities TO BE CONFIRMED, BASED ON STUDENTS
Summer	REVISION COMPLETE Exam Papers AIMING for Booklets BY TOPIC REVISION	REVISION COMPLETE Exam Papers AIMING for Booklets BY TOPIC REVISION