Maths

Key Stage 2 Curriculum includes

Number: negative numbers, rounding, fractions, percentages, multiples, factors and primes, basic ratio, conversions

Algebra: Use simple formula, generate a linear number sequence, simple equations

Shape: Area of triangles, rectangles and parallelograms, volume of cubes and cuboids, 2d and 3d shapes, name parts of circles, angles (triangle, on a straight line, around a point, vertically opposite).

Date : Averages from a list, bar charts, line graphs, pie charts, plotting coordinates

	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
Autumn 1	**Key Skills** - Arithmetic - Fractions - Negatives - Decimals **Manipulating Algebra and solving equations** - Substitution including positives and negatives - Substitution into algebraic formula and worded formulas - Write algebraic expressions including brackets and powers - Expand brackets and simplify - Simple factorising	**Inequalities and review of equations** - Review equations including forming and solving problems with angles and ratio - Use inequality symbols - Inequalities on a number line - Solving inequalities - Form and solve inequalities including where the unknown appears on both sides	**Manipulating Algebra** - Revise previous learning - Substitution involving fractions and decimals - Factorise complex expressions involving multiple letters and powers - Expand double brackets - Problem solving with algebra and shape **Arithmetic Ratio and proportion** - Revise previous learning - Direct and inverse proportion - Problems with ratio - Problems with	**Manipulating Algebra** - Revise previous year - Factorise simple quadratics with no coefficient of x^2 - expand polynomials - basic poof **Arithmetic Ratio and proportion** - Revise last year - Multiply and divide decimals - Exchange rates - Complex ratio proportion questions	**Bespoke package of learning revisiting areas of weakness highlighted through question level analysis from Pre-Public Examinations** -	**Algebraic manipulation, surds and indices, quadratic equations and simultaneous equations** **Graphs, linear and quadratic inequalities** **Straight lines and circles** **Differentiation**	**Trigonometry and circular measure** **Further Sequences and series** **Further differentiation** **Numerical methods**

			ratio fractions and percentage				
	- Number Machines - Use inverse to undo two step worded scenarios - Equations where the unknown appears twice - Form and solve equations inequalities including where the unknown appears on both sides						
Autumn 2	**Continue Manipulating Algebra and solving equations** -	**Fractions, Decimals and Percentages** - Shade fractions of a shape - Equivalent fractions - Cancel fractions - Add and subtract fractions - Multiply fractions - Fractions of amounts - Convert fractions decimals and percentages - Multiply fractions by an	**Area, Perimeter Volume** - Revise previous learning - Area of trapeziums - Volume of prisms including cylinders - Area and circumference of circles - Pythagoras - Problem solving (e.g., Tiling an area) - Form and solve equations with shape - Mass density	**Area, Perimeter Volume** - Revise last year - Find the surface area of 3d shapes including cylinders - Problem solving with Pythagoras - Area and perimeter of parts of circles		**Further Differentiation** **Integration** **Trigonometry** **Binomial Expansion** **Introduction to trigonometry**	**Further Integration** **Partial Fractions** **Numerical methods** **Parametric equations** **Functions and Transformations**

			volume				
		- integer - Percentage of an amount - Increase and decrease be a fraction or a percentage	**Averages, Charts and Graphs** - Revise previous learning - Calculate average speed - Stem and Leaf diagrams with decimals and 3-digit numbers - Scatter graphs - Frequency diagrams and polygons - Discreet and continuous data	**Averages, Charts and Graphs** - Revise last year - Calculate averages and range from a frequency table - Back-to-back stem and leaf diagrams - Limitations of predictions from scatter graphs			
Spring 1	**Averages, Charts and Graphs** - Construct a frequency table and draw appropriate chart from this - Dual compound bar charts - Line graphs and time series graphs - Draw and interpret Pie chart - Draw a tally chart by grouping data.	**Area, Perimeter Volume** - Identify properties of 2d and 3d shapes - Perimeters - Compound areas made from rectangles, triangles, parallelograms - Draw nets of 3d shapes - Surface area of cubes and cuboids - Volume of	**Equations** - Revise previous learning - Equations with fractions - 2 sided inequalities - Form and solve equations involving geometry - Rearrange simple formula - Solve simple linear simultaneous equations - Solve equations	**Equations** - Revise last year - Solve equations with fractions on both sides - Simultaneous equations (including negatives) - Rearrange formula including brackets and powers - Solve quadratic equations by factorising		**Exponentials and Logs** **Further Trigonometry** **Proof** **Sampling** **Data representation and interpreting**	**Differential equations** **Binomial Theorem** **Kinematics in two dimensions** **Further probability**

	- Speed Distance time Graphs - Compare data using average and range - Stem and leaf diagrams	prisms - Convert between metric units - Know parts of circles	with y^2 (e.g. $3y^2 = 27$) **Fractions, Decimals and Percentages** - Revise previous - Order fractions decimals and percentages - Problem solving with fractions decimals and percentages - Add, subtract, multiply and divide fractions with mixed numbers - Manipulative reasoning	**Fractions, Decimals and Percentages** - Revise last year - Use a decimal multiplier - Compound interest - Reverse percentages - Percentage change - Simple algebraic fractions -			
Spring 2	**Ratio and proportion** - Multiply by 10, 100 and 1000 - Multiply and divide a decimal by an integer - Solve problems using the	**Number Properties** - Order decimals - Round to decimal places - Factors, multiples, primes, squares, cubes	**Probability** - Revise previous learning - Frequency trees - Expectation - Venn diagrams	**Probability** - Revise last year - Relative frequency - Sampling - Stratified sample - Capture recapture		**Probability** **Binomial distribution** **Vectors**	**Statistical distributions (normal)** **Statistical hypothesis testing (normal)**

	unitary method - Money - Simplify ratios - Convert between ratios and fractions - Share into a ratio given the total or one share or part of a share - Best buy	and roots - LCM, HCF - BIDMAS - Power and root notation including on a calculator - Round to one significant figure - Estimating - Use Venn diagrams to sort numbers - Prime factorisation - Basic rules of indices	**Angles** - Revise previous learning - Complex problems with angle sums - Form and solve equations with angles - Properties of quadrilaterals - Bearings - Complex problems with parallel lines	- Basic tree diagrams **Angles** - Revise last year - Complex bearings questions - Basic trigonometry - Form and solve equations with angles where there are 2 unknowns - Basic angles in polygons		**Kinematics in one dimension** **Forces and Newtons Laws**	**Equilibrium and resolving** **Statics and dynamics** **Moments** **3D Vectors**
Summer 1	**Angles** - angle facts - Name angles (acute, obtuse and reflex) - Draw and measure angles - Types of triangles and problem solving - Parallel and perpendicular sides - Angles in a quadrilateral - Measure and draw bearings	**Sequences and Graphs** - Continue a sequence or pattern and describe the rule - Determine whether a term will appear in a sequence - Find the nth term of a sequence - Coordinates - Draw and label axis - Draw horizontal	**Number Properties** - Revise previous learning - Upper and lower bounds (simple) - Problem solving with estimates - Venn diagrams and set notation - Standard form - More complex rules of indices **Sequences and Graphs** - Revise previous learning - Fibonacci	**Number Properties** - Revise last year - Worded problems with upper and lower bounds - Fractional and negative indices - Harder problem solving with standard form - Choices and outcomes **Sequences and Graphs** - Revise last year - Find the nth term of a nonlinear		**Statistical hypothesis testing** **Analysis of data using statistical packages** **Forces and Newton's laws** **Revision**	**Revision**

	- Problem solving with angle facts - Parallel lines (alternate angles, allied, corresponding)	and vertical lines (x=, y=) - Draw diagonal lines (y=x, y=-x) - Draw basic linear graphs from a table of values	sequences - Find a given term using the nth term rule - Determine whether a number will appear in a sequence given the nth term rule. - Draw linear graphs from a table of values not in the form y=mx+c - Find the midpoint of a line segment	sequence using a related sequence - Find missing terms in algebraic sequences - Draw linear graphs using the y-intercept method - Draw nonlinear graphs by finding a table of values - Parallel lines - Solve simultaneous equations graphically - Recognise the shape of non-linear graphs			
Summer2	**Probability** - Probability Scale - Probability in words - Theoretical probabilities - Calculate the probability of an event not happening - Listing outcomes - Two way tables and finding probabilities	**Transformations** - Reflect in the y axis and x axis and any horizontal or vertical line - Reflect in a given diagonal line - Lines of symmetry - Rotational symmetry - Tessellate a shape - Enlarge by a	**Transformations** - Revise previous learning - Reflect in the lines y = , x = y=x and y=-x - Enlarge by a positive scale factor from a coordinate - Translate a shape by a vector - Rotate a shape from a coordinate	**Transformations** - Revise last year - Enlarge by a fractional scale factor - Describe transformations - Draw to scale and interpret scale drawing and maps - Solve problems with similar shapes - Vector arithmetic - Vector geometry - Constructions		**Revision** **Mocks** **Start year 13** **Trigonometry (circular measures)** **Trigonometry (identities)** **Sequences and Series**	

	from them - Sample space diagrams	positive scale factor - Worded translation - Draw a circle - Rotate a shape from a given point - Plans and elevations	- Identify congruent and similar shapes	- Loci			