Long term plan

Subject: Maths (7-10)

	Year 7	Year 8	Year 9	Year 10
LC1	-Study of mathematical discoveries over the years and important mathematicians. -Development of arithmetic techniques that include decimals and large numbers. -Factors, multiples and primes. HCF, LCM. -BIDMAS and calculation of powers, rounding and estimation. -Fractions, fractions of amounts and mixed numbers. Units of conversion.	-Arithmetic recap. Percentages: TAX, VAT, Discounts. -Fractions, decimals and percentages. -Algebra recap: simplification and substitution. -Algebra expansion: expanding brackets and factorising.	-Rounding to decimal places and significant figures. - Standard form. -Basics of algebra: simplification, substitution and expanding brackets. -Basics of algebra: factorising and solving equations. -Further equations.	-Powers, roots and surds. -Standard form and calculations. -Reverse percentages and problem solving with percentages. -Simple and Compound interest. -Metric and imperial units.
LC2	-Introduction to algebra: simplification and substitution. -Knowledge of regular and irregular 2D shapes. -Angles and calculations with angles. -Angles in polygons. -Circles, circumferences and their relationship with Pi.	-Perimeter and area including algebra. -Surface area of 3D shapes. -Volume of prisms including cylinders, pyramids and cones. -Constructions. -Pythagoras' theorem and its applications.	-Angles and calculations with angles. -Angles in polygons. -Similarity in length, area and volume. -Sequences and patterns. -Plotting graphs.	-Angles in polygons. -Constructions and loci. -Basic algebra recap. -Quadratic equations. -Linear equations with brackets and fractions. -Sequences: linear and quadratic.
LC3	-Improper fractions and mixed numbers calculations. -Fractions, decimals and percentages. -Fractions and percentages of amounts. VAT and TAX. -Ratio and its applications. -Problem solving: Real life applications of fractions, percentages and ratio.	-Sequences and patterns. -Solving equations. -Solving inequalities. -Plotting straight line graphs. -Calculating mid points -Plotting inequalities.	-FDP recap. Recurring decimals to fractions. -Calculations with fractions and mixed numbers recap. -Ratio and applications to real life and other areas of maths. -Best value problems including fractions, percentages and ratio. -Scales, maps and bearings.	-Real life graphs: introduction to calculus. -The data cycle and sampling. -Types of data and graphs. Cumulative frequency, box plots, scatter graphs. -Averages, outliers and analysis of data. Histograms. -Probability trees and harder probability questions.

LC4	-Conversions between metric and imperial units. -Perimeter and Area (including algebra). -Volume of prisms. -Calculations with Pi. -View points of 3D shapes.	-Measurements and estimation. Unit conversions. -Volume of compound 3D shapes. -Calculations with circles. -View points of 3D shapes. -Pythagoras extension: 3D Pythagoras' Theorem.	-Area including ratio, similarity and algebra. -Volume of 3D shapes including frustrums, algebra and similarity. -Pythagoras' Theorem in 2D and 3D. -Reflection, rotations, enlargements and translations. -Cumulative frequency and box plots used to analyse two sets of data.	-Pythagoras' theorem: 2D and 3D. -Trigonometry applied to right angled triangles. -Foundation: area and volume recap. Higher: Sine and cosine rules. -Foundation: Bearings -Higher: Congruence and similarity.
LC5	-Probability of single events. -The data cycle and how to plan an investigation. -Data presentation: graphs. -Problem solving: GAPS retaught from LC1-LC4 (geometry and shapes). -Problem solving: GAPS retaught from LC1-LC4 (number). -Problem solving: GAPS retaught from LC1-LC4 (algebra).	-Conversion graphs. -Transformations I: reflections and rotations. -Transformations II: translations and enlargements. -Problem solving: GAPS retaught from LC1-LC4 (geometry and shapes). -Problem solving: GAPS retaught from LC1-LC4 (number and probability). -Problem solving: GAPS retaught from LC1-LC4 (algebra).	-Data handling cycle. Scatter graphs and lines of best fit. -Real life graphs: distance-time and velocity-time graphs. -Probability. -Transformations I: Reflections and rotations. -Transformations II: Enlargements and translations. -GAP review of the year.	-Transformations: reflections, rotations, translations and enlargements. -Foundation: solving equations and worded problems with algebra. -Higher: Surds and rationalisation. -Foundation: Probability trees and money problems (best buys) recap. Higher: simultaneous equations including quadratics. -Foundation: Angles and shapes recap. -Higher: Circle theorems. -Foundation: plotting straight line graphs and quadratic graphs. -Higher: equations of parallel and perpendicular lines. -GAP from the year and problem solving recap.