

Long term plan – Academic year 2018/19

Subject: **Maths (7-10)**

	Year 7	Year 8	Year 9	Year 10
LC1	<ul style="list-style-type: none"> -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. 	<ul style="list-style-type: none"> -Arithmetic recap. Percentages: TAX, VAT, Discounts. -Fractions, decimals and percentages. -Algebra recap: simplification and substitution. -Algebra expansion: expanding brackets and factorising. 	<ul style="list-style-type: none"> -Number recap: writing different numbers in order, HCF, LCM. -Rounding to decimal places and significant figures. -Basics of algebra: simplification, substitution and expanding brackets. -Basics of algebra: factorising and solving equations. -Further equations. Standard form. 	<ul style="list-style-type: none"> -Powers, roots and surds. -Standard form and calculations. -Reverse percentages and problem solving with percentages. -Simple and Compound interest. -Metric and imperial units.
LC2	<ul style="list-style-type: none"> -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. 	<ul style="list-style-type: none"> -Perimeter and area including algebra. -Surface area of 3D shapes. -Volume of prisms including cylinders, pyramids and cones. -Constructions. -Pythagoras' theorem and its applications. 	<ul style="list-style-type: none"> -Angles and calculations with angles. -Angles in polygons. -Similarity in length, area and volume. -Sequences and patterns. -Plotting graphs. 	<ul style="list-style-type: none"> -Angles in polygons. Constructions and loci. -Basic algebra recap. -Quadratic equations. -Linear equations with brackets and fractions. -Sequences: linear and quadratic.
LC3	<ul style="list-style-type: none"> -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. 	<ul style="list-style-type: none"> -Writing different numbers in order, HCF, LCM. -Ratio and its applications in real life and other areas of Maths. -Probability: sample spaces and tree diagrams. -The data cycle I: collecting and presenting data. -The data cycle II: analysing data. 	<ul style="list-style-type: none"> -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. 	<ul style="list-style-type: none"> -Real life graphs: introduction to calculus. -The data cycle and sampling. -Types of data and graphs. Cumulative frequency and box plots. -Averages, outliers and analysis of data. - Histograms. -Probability trees and harder probability questions.
LC4	<ul style="list-style-type: none"> -Conversions between metric and imperial units. -Perimeter and Area (including algebra). -Volume of prisms. -Calculations with Pi. -View points of 3D shapes. 	<ul style="list-style-type: none"> -Measurements and estimation. Unit conversions. -Volume of compound 3D shapes. -Calculations with circles. -View points of 3D shapes. -Pythagoras extension: 3D Pythagoras' Theorem. 	<ul style="list-style-type: none"> -Area including ratio, similarity and algebra. -Volume of 3D shapes including frustrums, algebra and similarity. -Pythagoras' Theorem in 2D and 3D. -Probability of single and double events: tree diagrams. 	<ul style="list-style-type: none"> -Scatter graphs and line of best fit. -Venn diagrams including algebra and ratio. -Pythagoras' theorem: 2D and 3D. -Trigonometry applied to right angled triangles. -Foundation: area and volume recap. Higher: Sine and cosine rules.

			-Cumulative frequency and box plots used to analyse two sets of data.	
LC5	<ul style="list-style-type: none"> -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). 	<ul style="list-style-type: none"> -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). 	<ul style="list-style-type: none"> -Data handling cycle. Scatter graphs and lines of best fit. -Real life graphs: distance-time and velocity-time graphs. -Transformations I: Reflections and rotations. -Transformations II: Enlargements and translations. -GAP review of the year. 	<ul style="list-style-type: none"> -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.

Long term plan – Academic year 2018/19

Subject: **Maths (11-13)** *Mechanics (Yr12 and 13)

	Year 11 F	Year 11 H	Year 12	Year 13
LC1	<ul style="list-style-type: none"> -Percentages and interest. -Plotting straight lines and solving linear simultaneous equations. -Algebra recap. -Pythagoras' Theorem and SOHCAHTOA. -Averages from tables and frequency polygons. -EXAMS 	<ul style="list-style-type: none"> -Interest and surds. -Simultaneous equations recap and inequality regions. -Parallel and perpendicular lines. Tangents to circles. -Pythagoras' Theorem in 3D shapes. Laws of sine, cosine and area of a triangle. -Averages from tables and frequency polygons. -EXAMS 	<ul style="list-style-type: none"> -Surds and indices. -Quadratic functions. -Polynomials. -Graphs and transformations. -Equations and inequalities. -Revision and problem solving. *Kinematics. 	<ul style="list-style-type: none"> -Functions. -Radians and circular measure. -Trigonometric equations. -Trigonometric identities. -Revision of all trigonometry. -EXAMS. *Kinematics.
LC2	Gaps from paper analysis re-taught.	<ul style="list-style-type: none"> -Direct and inverse proportion. -Trigonometric graphs. -Rearranging formulae and simplifying algebraic fractions. -Functions. -Vectors. 	<ul style="list-style-type: none"> -Coordinate geometry. -Differentiation. -Integration. -Revision and problem solving. *Forces. 	<ul style="list-style-type: none"> -Further algebra. -Differentiation II. -Integration II. -EXAMS. *Forces and moments of forces.
LC3	Gaps from paper analysis re-taught.	Gaps from paper analysis re-taught.	<ul style="list-style-type: none"> -Exponentials and logarithms. -The binomial expansion. -Trigonometry. -Revision and problem solving. *Variable acceleration. 	<ul style="list-style-type: none"> -Differential equations. -Proof and vectors -Sequences and series. -Parametric equations. -Numerical methods. -EXAMS. *Projectiles.
LC4	Exams	Exams	<ul style="list-style-type: none"> -Vectors. -Data collection. -Data analysis through graphs and calculations. -Binomial distribution. -Hypothesis testing. -Revision and problem solving. *Kinematics and forces recap. 	<ul style="list-style-type: none"> -Probability. -Statistical distributions. -Statistical hypothesis testing. -The large data set. -Revision. *Friction and revision.
LC5			<ul style="list-style-type: none"> -Application to the large data set. -LC1 recap. -LC2 recap. -LC3 recap. -LC4 recap. *Variable acceleration recap. 	Revision and exams

