Richard Lander School

Maths Curriculum Overview - 7/8/9

BE THE BEST YOU CAN BE

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2			
Reporting Y7		CFCs		BfL & LAL			BfL & LAL						BfL & LAL	
Year 7	1: Analysing and displaying data: Averages, displaying data, Grouping data, comparing data, line graphs and bar charts	2: Number skills: Mental Maths, addition and subtraction, Multiplication, division, Money, time, Negative numbers, Factors, multiples and primes, Square numbers.	3: Expressions, functions and formulae: Functions, Simplifying expressions, Writing expressions, substitution into formulae, writing formulae.	4: Decimals and measures: Decimals and rounding, length, mass and capacity, scales and measures, working with decimals, Perimeter, Area, more units of measure.	5: Fractions and percentages: Comparing fractions, Simplifying fractions, working with fractions, Fractions and decimals, understanding percentages, percentages of amounts.	6: Probability: language of probability, Calculating probability, More probability calculations, Experimental probability, Expected outcomes.	7: Ratio and Proportion: Direct proportion, Writing ratios, Using ratios, Ratios, proportion and fractions, Proportions and percentages.	8: Lines and angles: Measuring and drawing angles, Lines, angles and triangles, Drawing triangles accurately, Calculating angles, Angles in a triangle, Quadrilaterals.	9: Sequences and graphs: Sequences, Pattern sequences, Coordinates and midpoints, Extending	**KS3 EOY Exams Revision**	**KS3 EOY Exams**	Complete Unit 9	10: Transformations: Congruency and enlargements, Symmetry, Reflection, Rotation, Transformations and combined transformations.	**Curriculum Enrichment Week**	
Reporting Y8	NB: Pilot for Year 8 2021/22 - Unit tests instead of termly tests	CFCs		BfL & LAL				BfL & LAL					BfL & LAL	
Year 8	1. Number: Calculations, Divisibility and division, Calculating with negative numbers, powers, roots and brackets, Multiples and factors.	2: Area and Volume: Areas of triangles, parallelograms and trapezia, Volumes of cubes and cuboids, 2D representation of 3D solids, Surface area of cubes and cuboids, Measures.	3: Statistics, graphs and charts: Pie charts, using tables, Stem & leaf diagrams, Comparing data, Scatter graphs, Misleading graphs.	4: Expressions and equations: Algebraic powers, Expressions and brackets, Factorising expressions, One step equations, Two-step equetions, The balancing method.	5: Real-life graphs: Conversion, Distance-time graphs, Line graphs, More line graphs, Real-life graphs, Curved graphs.	6: Decimals and ratio: Ordering decimals and rounding, Place-value calculations, Calculations with decimals, Ratio and proportion with decimals.	7: Lines and angles: Quadrilaterals, Alternate angles and proof, Angles in parallel lines, Exterior and interior angles, Solving geometric problems.	8: Calculating with fractions: Ordering fractions, Adding and subtracting fractions, Multiplying fractions, Dividing fractions, Calculating with mixed numbers.	9: Straight-line graphs: Direct proportion on graphs, gradients, Equations of straight lines.9: Straight-line graphs: Direct proportion on graphs,	**KS3 EOY Exams Revision**	**KS3 EOY Exams**	Complete Unit 9	10: Percentages, decimals and fractions: Fractions and decimals, Equivalent proportions, Writing percentages, Percentage of amounts.	**Curriculum Enrichment Week**	
Reporting Y9		CFCs		BfL & LAL				BfL & LAL					BfL & LAL	
Year 9	1:Indices and standard form: Indices, Calculations and estimates, More Indices, standard form.	2: Expressions and formulae: Solving Equations, Substituting into expressions, Writing and using formulae, Using and rearranging formulae, Index laws and brackets, Expanding double brackets.	3: Dealing with data: Planning a survey, Collecting data, Calculating averages, Displaying and analysing data, Presenting and comparing data.	4: Multiplicative reasoning: Enlargement, Negative and fractional scale factors, Percentage change, Compound measures, Direct and Inverse proportion.	5: Constructions: Using scales, Basic constructions, Constructing triangles, Using accurate scale diagrams.	6: Sequences, Inequalities, equations and proportion: nth term of arithmetic sequences, Non-linear sequences, Inequalities, Solving equations, Proportion.	7: Circles, Pythagoras and Prisms: Circumference of a circle, Area of a circle, Pythagoras' Theorem, Prisms and Cylinders, Errors and bounds.	8: Graphs: Using y=mx+c, More straight-line graphs, Simultaneous equations, Graphs of quadratic functions, More non-linear graphs	9: Probability: Multually exclusive events, Experimental and theoretical probability, Sample space diagrams, Two-way tables, Venn diagrams.	**KS3 EOY Revision & Exams**			10: Comparing shapes: Congruent and similar shapes, Ratios in triangles, The tangent ratio, The sine ratio, The cosine ratio, Using trigonometry to find angles.	**Curriculum Enrichment Week**	

Richard Lander School

Maths Curriculum Overview - 10/11

BE THE BEST YOU CAN BE

	Autumn 1			Autumn 2				Spring 1				Spring 2				Summer 1			Summer 2			
Reporting Y10			CfCs			BfL & Grades				CfCs				BfL & Grades						BfL & Report		
Year 10H **(red indicates first time topic)**	1: **Number** estimation product rule hcf / lcm (venn) standard form negative, fractional and zero indices including algebraic examples surds incl rationalising the denominator		**Autumn Assessment**	2: **Algebra** algebr' indices factorise quadratics (and solve basic quadratic equations) solve linear equ's formulae linear nth term quad' nth term geo' sequences fibonacci	**3&14: Statistics** Recap of Statistical diagrams (Pie charts, double S&L, Scatter graphs (Including Line of best fit), Averages and range (individual, frequency table and grouped data), time series... Spend most time on Cumulative frequency, Box plots, histograms and comparing two sets of data.		4: **Fractions, ratios and percentages** Fraction operations, Ratio manipulation and problems (big focus on euqations/ratio equivalence and harder ratio problems), Ratio and proportion, percenatges inclusing compound interest, reverse percenatges and calculating percenatge change, FDP equivalence including proof of recurring decimals to fractions. Incluse Growth and decay.		5: **Angles & Trigonometry** angles triangles angles quadrilat's interior angles exterior angles bearings pythagoras trig' sohcahtoa trig' elev' dep' trig bearings 3D trig with Right angle triangles only. exact trig' values		**Spring Assessment**	6: **Graphs** y = mx+c (inc rearrange) y and x intercept parallel lines perpendicular lines midpoint of line equ' from 2 pts equ' from 'm' +1pt distance time velocity time Also include finding acceleration and distance from a v-t graph quadratic graphs (link to unit) cubic graphs reciprocal graphs exponential graphs equation of circle		7: **Area & volume** 2d perimeter 2d area bounds error intervals (link bounds to compound measures) convert metric area convert metric vol' circle circ'/area circle sectors SA/Vol: prism, cylinder, sphere, pyramid, cone, frustum	**Pre Public Exams**	8: **Transformations & Constructions** reflections rotations translations (link to vector notation and arithmetic) enlargements transf' combo Bearings, construction & Loci	10: **Probability** combined events mutually exclusive experimental tree diagrams conditional prob' venn : set notation venn probability	**Work Experience Week**	
Year 10F **(red indicates first time topic)**	**1: Number** decimals place value factors/multiples square/cube/root index notation prime factors	**2: Algebra** algebraic notation simplifying like terms simplifying x&÷ substitution use formulae expand brackets factorise	**Autumn Assessment**	**2: Algebra** continued	**3&7: Graphs, tables and charts, Averages and range** frequency tables 2 way tables bar charts: 1. basic 2.composite 3.comparative stem & leaf pie charts scatter graphs line of bf averages range est' mean sampling	**4: Fractions, decimals and percentages** fraction operations find fraction of fdp conversion find % of simple interest % inc / dec VAT	**11: Ratio & Proportion** simplest form unit ratios scale up ratio share(total given) share(part given) share(diff' given) ratio to fraction unitary method best value direct prop' graphs	**6: Angles** triangles quadrilat's interior exterior paral' lines	**Spring Assessment**	**7: Equations, Inequalities and sequences** Sequences Solve 1-step eqns Solve 2-step equations Equations with brackets Inequalities on number line Solve inequalities Use formulae Rearrange Formulae Pictorial sequences Term-to-term nth term	**8: Perimeter, area & volume** quadrilaterals compound shape surface area prism volume metric volume conversions	**9: Graphs** co-ords straight line (table of values) real-life graphs distance time graphs	**Pre Public Exams**	**10: Transf'mations** 3d solids 4 transf's describing transf's transf' combos	**13: Probability** calculating prob two way tables experimental venn : set notation venn probability tree diagrams	**Work Experience Week**	

Richard Lander School

Maths Curriculum Overview - 10/11

BE THE BEST YOU CAN BE

	Autumn 1		Autumn 2		Spring 1			Spring 2		Summer 1		Summer 2
Reporting Y11		CfCs & Grades		Rep & Grades			CfCs & Grades		BfL & Grades			
Year 11H (red indicates first time topic)	**9: Equations inequalities** quadratic equ'ns: 1factorisation, 2complete square, 3quad' formula simultaneous equ's quad' sim' equ's solve inequalities inequalities on a number line	**11&19A: Multiplicative reasoning & Proportion** Growth and decay, Compound measures, Direct proportion Formulae for proportion problems with constant of proportionality	**PRE PUBLIC EXAMS (PPE)**	12: **Similarity & congruence** congruent triangles congruence proof similarity : 1.Linear ScFactor 2. Area ScFactor 3.Volume ScFactor	**13: More Trigonometry** trig graphs (excl. transformations) sine rule cosine rule area with sine	**16: Circle theorems** radii/isos' c theorems applied proofs	**17: More Algebra** rearranging formulae +/- alg' frac's x/÷ alg' frac's unknown denominators simplify alg' frac's factorise alg' frac's solve alg' frac's Iterations composite and inverse functions identities	**PRE PUBLIC EXAMS (PPE)**	**18: Vectors & geometric proof** vector notation magnitude resultant vectors scalars parallel vectors collinear points ratio vectors geometric vectors	**19B&13B: More graphs** Exponential graphs Transforming graphs (including trig)	**Revision**	**GCSE EXAMS**
Year 11F (red indicates first time topic)	**12: Right-angled triangles** Pythag long side Pythag short side Basic Trig Trig angles Trig sides	**14: Multiplicative reasoning** % profit / loss reverse percentage growth/decay compound interest speed density direct proprtion inverse proportion	**PRE PUBLIC EXAMS (PPE)**	**15: Constructions loci and bearings** 3d solids plans/elevations constructing triangles scale drawings & maps construct angles construct shapes construct nets angle bisector perpendicular bisector loci bearings	**16: Quadratic equations and graphs further graphs sim equations**	**17: Perimeter area volume 2** circle circumference circle area sectors cylinders pyramids cones spheres	**18: Fractions, Indices and Standard form plus review of indices and fractions**	**PRE PUBLIC EXAMS (PPE)**	**19:'Congruence similarity vectors** enlargement similarity problems congruence problems add / subtract vectors resultant vectors scalars	**REVISION**	**GCSE EXAMS**