Strand			Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Rationale
Number	S	Place Value	Read numbers to 7 figures Round to any power of 10 Estimation Place value to 3 d.p.	Place Value including decimals Rounding (all multiples) including 1 d.p.	Round to 1 significant figure for numbers greater than 1 Estimation (numbers greater than 1 only)	Significant figures including numbers less than 1 Estimate (including numbers less than 1) Error Intervals for powers of 10	Error intervals from Calculations		Modelling	Rounding has been done since at least 2000 BCE
	E	Place Value			Round to 2-3 significant figures	Estimate more complex calculations	Significant figures including numbers less than 1 Estimate (including numbers less than 1)	Error intervals		Understanding the error implicit in a measurement, and how these errors can be compounded by further manipulation is key in both physical and statistical measurement.
	S	Calculating	Add and subtract positive integers multiply THTU by TU Division using factors Long division Equivalent fractions & simplifying Fractions on a number line Compare and order fractions Add and subtract fractions Multiply fractions by integers Multiply fractions by fractions Divide fractions by integers Mixed calculations with fractions Fraction of an amount Reverse fraction of an amount Mult & div by 10, 100, 1000 Mult decimals by integers Divide decimals by integers	Four rules with decimals (multiply & divide by integers only) Add + subtract fractions	Multiply & divide by multiples of powers of 10 Multiply decimals by decimals Add + subtract mixed number fractions (not improper)	Divide by decimals Use fraction, decimal equivalence to calculate efficiently Four rules with fractions	Combo fraction [Multi-step, interleave area & perimeter]	Combo fraction [Multi-step, interleave area & perimeter]		Decimal fractions were first developed in China in the 4th Century BCE
	E	Calculating			Use fraction, decimal equivalence to calculate efficiently	Four rules with mixed numbers (use improper)	Fraction calculations in reverse Recap 4 rules Four rules with mixed numbers			Multi-base arithmetic reciprocals
	S	Operations	Order of operations (no powers)	Order of operations Basic use of a calculator	Order of operations (including squares and roots) Basic use of a calculator - use of fraction, square (root) keys	Order of operations (Distributive property) Use of fraction, index and negative keys	(Embedded)			
	E	Operations			Order of operations (Distributive property)	Use calculator for standard form	Use of calculator Standard form calculations (simple cases)			'Precedence' is generally defined so that higher-level operations are performed first The distributive law is one of the 9 Field axioms of mathematics, fundamental to how arithmetic , in all its forms,
	S	Negatives	Use negative numbers in context	Compare and order directed numbers Add and subtract with negatives	Multiply and divide with negatives					Existence of additive inverse
	E	Negatives			Squaring negatives					
	S	Factors, Multiples and Primes	Common factors Common multiples Squares & Cubes Primes	Division facts Squares and roots Identify factors, multiple and primes by lisiting	HCF & LCM by listing	Prime Factors (calc and non-calc)	Squares with prime factors Surds: simplify expand brackets rationalise denominator	Recap Surds		
	E	Factors, Multiples and Primes			HCF & LCM in context	Identify factors from prime factor form	HCF & LCM with prime factors (using a Venn diagram)			Transerable into fractions, algebraic manipulation, proof
	S	Fractions, Decimals & Percentages	Convert between fractions and decimals Convert fractions to percentages Equivalent FDP Order FDP	Convert between fractions, decimals, and percentages (simple cases)	Convert between improper fractions and mixed numbers Compare, and order lists of; fractions, decimals, and percentages (simple cases)	Convert between fractions, decimals, and percentages (including calculator use) Compare, and order lists of; fractions, decimals, and percentages	Convert recurring decimals to fractions and vice versa			Ancient Egyptians could calculate with fractions, though they only used fractions with numerators of 1 (the multiplicative inverses)
	E	Fractions, Decimals & Percentages			Convert between improper fractions and percentages >100%	Convert between improper fractions, decimals, and percentages >100%	Problems that involve combinations of fractions, decimals, and percentages			Proof of limits of series may rely on understanding the effect of multiplying fractions, as does combining probabilities.
	S	Indices		Index notation Squares, cubes and roots	Index Laws (not fractional, negative)	Index Laws (inc negative) Write a number as a power of a base [e.g. $64 = 4^3$]	Index laws for fractional indices standard form add/sub (4 ops)			
	E	Indices			Write a number as a power of a base [e.g. $64 = 4^3$]	Convert into Standard Form	Index Laws negative powers Change of base [$8^2 = 4^3$] Standard Form			

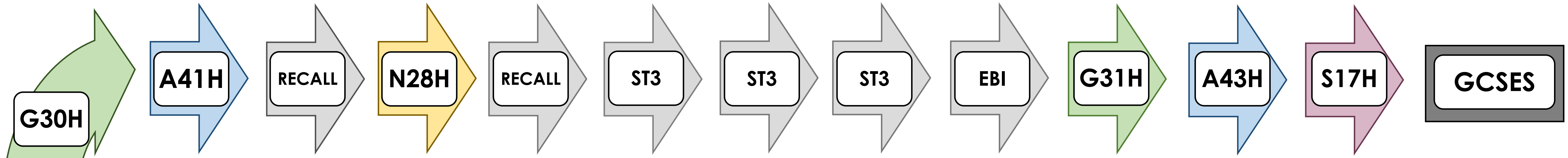
Strand			Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Rationale
Algebra	S	Notation	Form expressions	Vocabulary [expression, term, rule, etc] Form expressions (no division) Simplify by collecting terms (no negative answers)	Expand brackets Factorise to one bracket (number factor) Algebraic index laws	Expand two added brackets and simplify Factorise to one bracket Algebraic index laws	Expand pairs of brackets a>1 factorise quadratics a>1 Expand 3 brackets Complete the square Turning points - translate graphs of quads Alg fractions: simplify add/subtract multiply/divide			Algebra was brought to Europe by Persian mathematician al-Kwarizmi in the 8th Century. The word algebra derives from the islamic word *al-jabr* which means "reunion of broken parts"
	E	Notation			Factorise to one bracket (algebraic factor)	Expand two subtracted brackets and simplify	Simplify alg fractions [(4x + 6)/2] Expand two subtracted brackets and simplify Expand pairs of brackets (a=1) Factorise quadratics (a=1)			
	S	Formulae	Use function machines Substitute into expressions Use formulae	Substitute into simpler formulae Form formulae from contexts Change the subject (1 & 2 step)	Substitute into complex formulae (Powers and roots) Change the subject (2 & 3 step)	Substitute into complex formulae [use kinematics formulae]	Change subject involving factorising			Ancient Greek and Babylonian mathematicians wrote formulas as sentences. As symbolic algebra developed (mainly in the Arab world) it eventually found favour in Europe and was used by Rene Decartes to show that geometric problems could be solved by using algebra (he also popularised the use of *x* as the unknown).
	E	Formulae			Change subject involving fractions	Change subject involving powers and roots	Substitute into complex formulae [use kinematics formulae]	Change the subject involving factorising		As formulas often model real world situations it can be helpful to rearrange them so that the term to be calculated is the subject.
	S	Graphs	Plot coordinates in all four quadrants	Plot horizontal and vertical lines, y=x & y= -x [referring to patterns in coordinates] Plot y=Mx+C using table of values	Solve equations graphically (intersect with x=a, y=a) Gradient & Intercept Equation of a line (pos int gradient)	Plot ax + by = c Equation of a line from two points Solve linear simultaneous equations graphically	Perpendicular lines Solve quadratics graphically Solve sim eq linear and quadratic graphically Draw a line to solve a quadratic Translate graphs		Proof Sequences & Series Functions Parametric Equations Trigonometric Functions Further Algebra Trigonometric Identites Differential Equations Numerical Analysis Polynomials Moments Projectile Motion Modelling Friction	
	E	Graphs			Equation of a line (neg, frac, gradients)	Equations of parallel lines	Plot ax + by = c Equation of a line from two points Equations of parallel lines Solve linear simultaneous equations graphically			The method of graphing functions can be extended to two variables, three dimensions, and even the complex plane in illustrating many areas of mathematics, including the Riemann hypothesis, the 'Holy Grail' of mathematical proof.
	S	Sequences		Generate sequences from term-to-term rule Generate sequences from position-to-term rule Describe patterns with sequences inc triangular and square	Describe using nth term Relate nth terms to patterns Describe and continue geometric sequences and the fibonacci sequence	Quadratic sequences [$n^2 + c$]	Quadratic sequences [an^2+bn+c]			
	E	Sequences			Describe and continue fibonacci-type sequences	Nth term of geometric sequence (simple cases)	Quadratic sequences [$n^2 + c$] Nth term of geometric sequence (simple cases)			Mathematicians work with the sums of sequences, called series and is a major part of calculus. This has led to proofs about infinite sums
	S	Equations	Form equations from word problems Solve 1 and 2 step equations Pairs of values for multi-variable equations	Solve equations [linear, 1 & 2 step, (inc 10 - 2x = 4)] Form equations	Solve equations [linear, 1 & 2 step, 1 bracket] Form equations	Solve equations [inc brackets, fractions with numerical denominators] Solve equations with unknowns on both sides Solve linear simultaneous equations without scaling	Solve quadratics using the formula	Composite functions Inverse functions Trial and improvement Iteration Sim Eq w/ quadratic		The equals sign was invented in 1557 by Welsh mathematician Robert Recorde who said that "nothing can be more equal than two parallel lines of equal length"
	E	Equations			Solve equations [inc fractions with numerical denominators]	Solve equations with unknowns and brackets on both sides Solve linear simultaneous equations where one must be scaled	Equations involving squares and roots	Factorise and solve quadratic equations (a=1) Linear simultaneous equations (link to graphs)		
	S	Inequalities		Notation Represent on a number line not compound)	Solve linear inequalities (1 step, not compound) Represent on a number line (inc compound)	Solve linear inequalities (2 step, inc compound)	Solve 2 variable linear inequalities algebraically Combining regions	Solve 1 variable quadratic inequalities algebraically Solve inequalities graphically		
	E	Inequalities			Solve linear inequalities (2 step, inc compound)	Represent inequalities on a coordinate plane	Solve compound Two variable inequalities [list sets of solutions] Regions for single inequalities			Mathematicians often use inequalities to bound quantities for which exact formulas cannot be computed easily. Some inequalities are used so often that they have names.
	S	Non-Linear Graphs			Plot simple quadratics	Plot simple quadratics & cubics Find approximate solutions	Equation of circles transform graphs	y = a^x trig graphs		
	E	Non-Linear Graphs			Plot simple quadratics Find approximate solutions	Plot $y = ax^2+bx+c$	Speed from distance-time graphs	Plot cubics, y=a^x Recognise non-linear forms sketch filling curves		

Strand			Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Rationale
Ratio, Proportion, & Rates of Change	S	Notation	Use ratio notation	Use ratio notation & simplify Relate ratios to fractions	Share in a given ratio Unit ratio	Solve ratio division where one part is known Divide into 3 part ratio	combo ratio combo questions			It was thought that all numbers could be written as ratios (and, in fact, an infinite number are). We now know that there are an infinite number of *irrational* numbers that cannot be.
	E				Share in a given ratio (inc dec ans)	Solve ratio division where one part or difference is known	Solve ratio division where one part or difference is known Divide into 3 part ratio			
	S	Proportion		Scaling (recipes) Equivalence of ratio	Best buy by scaling Solve simple direct proportion problems	Best buy by unit ratio Solve simple direct or inverse proportion problems		Write inverse proportion formulae Solve proportion problems involving 3 variables		
	E				Solve simple direct or inverse proportion problems	Write direct (inc squares, roots) proportion formulae	Solve inverse proportion problems 3 part ratio [m : f, f : c, m : c] combo ratio algebraic & graphically	Write direct and inverse proportion formulae (x and x^2)		
	S	Percentage	Percentage of amounts without a calculator Reverse percentage of amount	Percentage of amounts without a calculator Percentage increase/decrease non-calculator	One number as a percentage of another Compare proportions using percentage Calculate percentages of amounts with a multiplier	Reverse percentage of an amount [40% of a number is 60, what is the number?] Percentage change with a multiplier Percentage profit/loss	Reverse percentage change with a multiplier Percentage profit/loss (with repeated percentage change) Consecutive % change [+25% then + 20%, etc] Simple interest		Proof Sequences & Series Functions Parametric Equations Trigonometric Functions Further Algebra Trigonometric Identites Differential Equations Numerical Analysis Moments Projectile Motion Modelling Friction	In ancient Rome a tax of 1/100 of every sale at auction was introduced. As denominations of currency grew throughout the Middle Ages, the ability to easily measure 1/100th of an amount (and multiples thereof) became more useful, and led to the decimalisation of most of Europe between the 17th and 18th Centuries.
	E				Percentage change with a multiplier	Consecutive % change [+25% then + 20%, etc]	Reverse percentage change with / without a multiplier Percentage profit/loss (with repeated percentage change) Tax			
	S	Rates of Change		Calculate speed in simple cases [Within Distance-Time graphs]	Calculate speed/distance/time	Calculate speed/distance/time in more complex cases (i.e. multiples of 12 mins)	Compound Measures (Density, Pressure) Dimensional Analysis			
	E				Calculate speed/distance/time with multiples of 15 minutes	Calculate with other rates of change/ compound measures	Convert compound measures [metres/min to Km/hr] {embed in speed unit}	Compound measures (Density, within Volume unit)		
	S	Scale			Scale drawing [1cm = 5m etc] {embed in construction}	Map scales [1 : 50 000] {embed in loci, bearings}				
	E				Harder scale drawing [2cm = 5m etc] {embed in construction}	Harder map scales [1 : 125 000] {embed in loci, bearings}				
	S	Graphs		Plot and interpret (piece-wise linear) distance-time graphs	Graphs of direct proportion [Use to solve]	Graphs of direct proportion [Use to solve, find gradient and relate to context]	Velocity-time graphs [rate of change, trapezium rule, average speed] Calculate gradients to tangents of curves and interpret in context.	Inverse proportion graphs		
	E				Graphs of direct proportion [Use to solve, find gradient and relate to context]	Graphs of inverse proportion	Graphs of direct proportion [inc. squares]			The understanding of rate of change links with acceleration, gradient of a line, conversion rates etc. Graphs of rate of change can be analysed using calculus.
	S	Similarity					Area and Volume scale factors			
	E						Find lengths/scale factor			

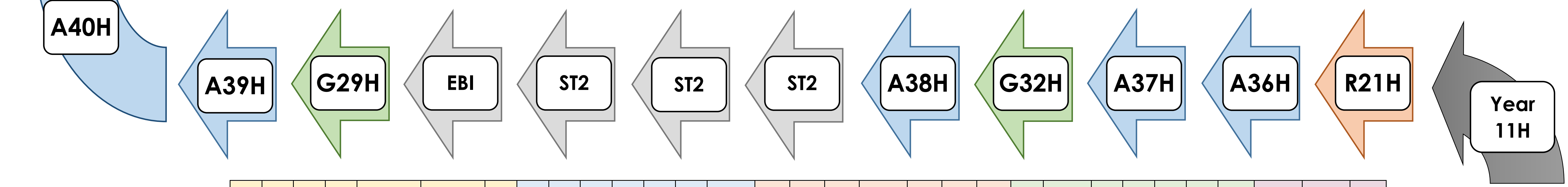
Strand			Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Rationale
Geometry & Measures	S	Shape	Parts of the circle	Properties of triangles/quadrilaterals (inc symmetry) Parts of the circle	Properties of quadrilaterals (inc symmetry) Parts of the circle (all)	Pythagoras	3D Pythag 3D Trig Non RA Trig	Non calc Trig Applications of Trigonometry [bearings, circle theorems etc.]		Classification Projective geometry Topology
	E				Classifying quadrilaterals	3D Pythagoras	Pythagoras & bearings Trigonometry (Right angled only)	Non calc Trig		
	S	Perimeter & Area	Perimeter and area of rectilinear shapes Area of a triangle Area of a parallelogram	Area of parallelogram, triangle, trapezium Area and perimeter of rectilinear shapes	Circumference and area of circles Area of compound shapes (not circles)	Arcs & Sectors (easy fractions of turn)	Reverse arc & sector (find angle) area of segment	Applications of area formulae		
	E				Area of compound shapes (inc circles)	Arcs & Sectors (other fractions of turn)	Arcs & Sectors			Calculating area is a key application of integral calculus, which can be transferred to functions in higher dimensions, probability density theory, and kinematics.
	S	Construction	Triangle constructions ASA and SAS	Triangle construction including SSS Standard constructions	Scale Drawing Recall standard constructions Loci	Combinations of Loci		Review inc scale, bearings		These techniques are a key step in understanding Euclidean Geometry (c. 200 BCE), which is the foundation upon which all modern mathematics
	E				Construct 90°, 45°, 60°, 30° etc	Construction, congruence and proof	Bearings	Construction, scale drawing, combinations of Loci Similarity, congruence (reference enlargement)		
	S	Transformation	Reflection over axes Translation (no vector notation) Enlarge by positive integer sf (no centre)	Reflect (horiz and vert only) Rotate	Translate Scaling translations Enlarge (pos int sf only)	Describe reflections & rotations Enlarge (inc Fractional enlargement)	Transformations inc. negative enlargement	Magnitude of a vector Vector proof [using ratio, prove parallel, etc]		
	E				Enlarge (inc Fractional enlargement)	Combine translations (Vector addition)	Enlarge including fractional Combinations of transformations Combine translations (Vector addition)	Vector addition, multiplication by a scalar Represent a 2-dimensional vector and draw olumn vectors on a square or coordinate grid.	Trigonometry Vectors	The ideas of transforming shapes on a plane can be extended into higher dimensions. Matrices are often introduced through their ability to perform transformations
	S	Angles	Measure and draw Angle facts Angles in a triangle Angles in a quadrilateral Angles in polygons	Notation Angle facts Angles in triangle, quadrilateral, angle properties Exterior angles of reg polygons	Angles in parallel lines (inc proof tiangle sum is 180°) Draw and calculate bearings	Int angles of polygons Angle proof (congruence, similarity)	Circle theorems			360° was chosen to be the number of degrees (parts) of a full turn by the Babylonians in around 1000 BCE. Other angle measurement systems include radians and gradians, which break the full turn up into different sized degrees.
	E				Back bearings	Angle proof inc Isosceles triangles in circles	Int angles of polygons Angle proof (congruence, similarity)			Geometric proofs were some of the earliest to be formulated, introducing the concept of abstract proof and mathematics as a discipline. Angles can be used to visualise complex numbers in the field of complex analysis.
	S	3D Shape	Volume of cuboids Nets of prisms	Names (+ faces, edges, vertices) Volume of prisms Construct shapes from nets	Plans & elevations Draw isometric Construct shapes from nets	Nets of 3D shapes Surface area of prisms Volume of cylinders	Cones, spheres, frustums, pyramids	Applications of volume formulae		
	E				Volume of cylinders	DONE Vol cylinders SA + Volume of pyramids	Surface area of cylinders Surface Area and Volume of Spheres, Cones, Pyramids and Composite solids Plans & Elevations			Calculating volume by considering small slices was key in the development of integral calculus, which can be transferred to functions in higher dimensions, probability density theory, and kinematics.
	S	Measures	Convert metric measures Calculate with metric measures Miles and kilometres Metric & Imperial measures	Convert metric measures Calculate with time and timetables	Convert between metric area	Convert between metric area and volume				After the French Revolution (1789-99) the opportunity arose for a completely new measurement system. The French Academy of Sciences decided that
	E				Solve problems involving area unit conversion	Solve problems involving volume unit conversion	*See Ratio, Proportion and Rates of Change*			

Strand			Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Rationale
Statistics & Probability	S	Representing	Time series Read and interpret pie charts	Bar charts [compound and comparitive] Time series Timetables	Frequency diagram Frequency polygon Pie charts	Scattergraphs Stem & Leaf	Histograms Box plots	Recap of data		
	E				Calculating quantities from pie charts	Cumulative Frequency	Scattergraphs	Misleading graphs, sampling bias and questionnaires		Data visualisations have the power to communicate information clearly. However, they can also be manipulated to mislead. Understanding time series graphs helps students to understand the concepts of rate of change, which in turn introduces kinematics, financial rates and derivative calculus.
	S	Probability		Probability scale Probability as a fraction (inc sum to 1) Listing outcomes complete probability space	Two-way tables Venn diagrams Experimental [find P(outcome) from experiment]	Frequency trees Probability tree diagrams [independent only] Set notation inc shading Relative frequency [use past data to make	Probability trees (inc dependent) Venn probability [P out of a subset, not a whole]		Conditional Probability Statistical Distributions Statistical Hypothesis Testing Staistical Sampling	Understanding probability was perhaps initially driven by games of chance, but also has been used in cryptography and cryptanalysis since the 8th century.
	E				Judge bias	Comparisons with expected values	Frequency trees Probability tree diagrams [independent only] Set notation inc shading Relative frequency [use past data to make predictions] Relative frequency graphs Judge bias			Now used in risk assessment and modelling, in particular in finance, but also in medicine, behavioural science and biology. It is key to understanding quantum theory.
	S	Describing	Mean Mean from frequency table	Averages and range collect data in frequency table Mode from frequency table	Complete data knowing averages Mean from frequency table	Complete grouped frequency Estimate mean from grouped frequency	Interpret cumulative frequency graph (top 10% pass, etc) Compare data sets using box plots Problem solve with averages	Recap Data Handling		The arithmetic mean was developed by astronomers in the 16th Century, knowing that variance in their records was more likely to be errors in measurement than the moon changing size.
	E				Median from freq table	Identify group containing median	Median from freq table			

G30H	Trigonometry Recap	**N28H**	Recap Surds	**A42H**	Quadratic Equations Recap
A41H	Quadratic Simultaneous Equations	**G31H**	Applying Geometric Formulae	**S17H**	Data Representation Recap



A39H	Composite & Inverse Functions	**A38H**	Inequalities & Regions	**A37H**	Graphs of Trigonometric Functions	**R21H**	Direct and Inverse Proportion
A40H	Algebraic Proof	**G29H**	Constructions & Loci	**G32H**	Vector Proof	**A36H**	Iterative Methods Trial and Improvement



NUMBER	ALGEBRA	RATIO, PROPORTION & RATES	GEOMETRY & MEASURES	STATISTICS & PROBABILITY
Place Value	Notation	Notation	Shape	Representing Data
Calculating	Formulae	Proportion	Perimeter & Area	Summarising Data
Operations	Graphs	Percentages	Construction	Probability
Negatives	Sequences	Rates of Change	Transformations	
Factors, Multiples, & Primes	Equations	Scale	Angles	
Fractions, Decimals & Percentages	Inequalities	Graphs	3D Shape	
Indices	Non-Linear Graphs	Similarity	Measures	

A32H	Multiplying / Dividing Algebraic Fractions	N27H	Bounds	G27H	Circle Theorems 1	A35H	Translating Graphs
A33H	Kinematics Formulae	A32H	Quadratic Simultaneous Equations Graphically	G28H	Circle Theorems 2		

ST1 → EBI → A32H → RECALL → A33H → N27H → A34H → G27H → G28H → A35H → Yr 11 Prep → Yr 11 Prep → Year 11H

G25H	Volume of Pyramids, Cones, Frustums	S16H	Cumulative Frequency Histograms	G23H	Trigonometry & Bearings	R19H	Velocity/Time Graphs
G26H	Loci Angles in Polygons	A30H	Completing the Square Quadratic Formula	A29H	Equations of Circles	G21H	Proofs of Congruence
A31H	Adding / Subtracting Algebraic Fractions	G24H	Arcs & Sectors	R20H	Density Similarity in 3D	G22H	Trigonometry in non-Right Triangles

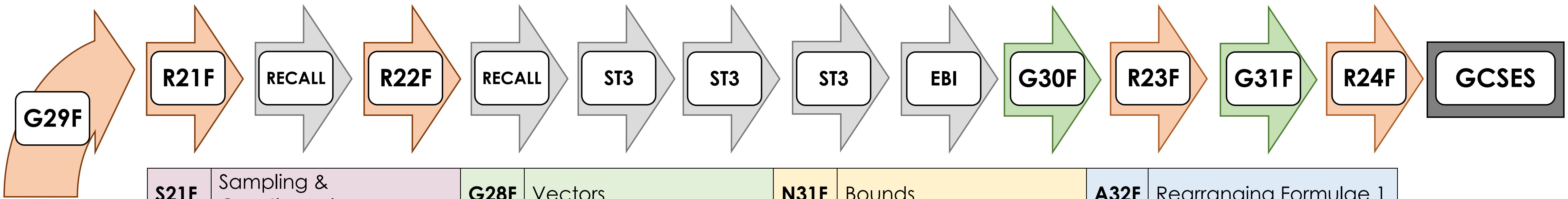
R19H → G21H → G22H → G23H → A29H → R20H → S16H → A30H → G24H → G25H → G26H → A31H → ST1 → ST1 → ST1

A26H	Algebraic Manipulation	R18H	Comparing Ratio	S14H	Conditional Probability	A28H	Solving Quadratics Graphically
N24H	Surds	A27H	Parallel & Perpendicular Lines	N25H	Prime Factor Form	S15H	Averages from Grouped Data
G19H	Negative Enlargement	R19H	Reverse Percentage Change	N26H	Index Notation Recurring Decimals	G20H	Trigonometry

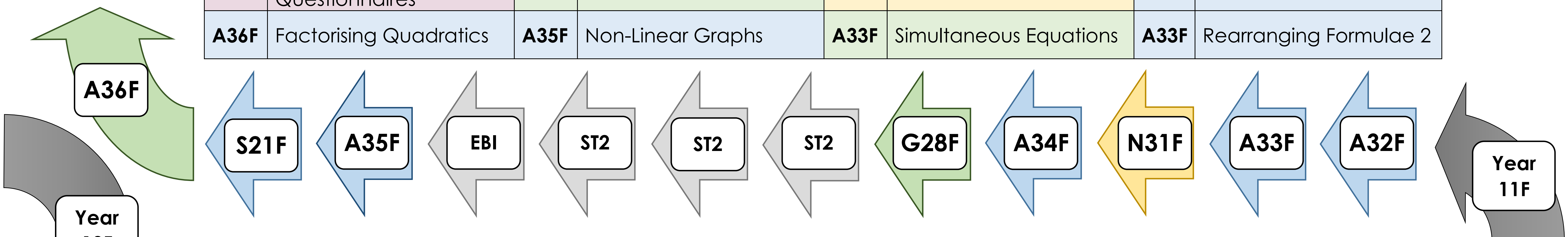
Year 10H → A26H → N24H → G19H → R18H → A27H → R19H → S14H → N25H → N26H → A28H → S15H → RECALL → G20H

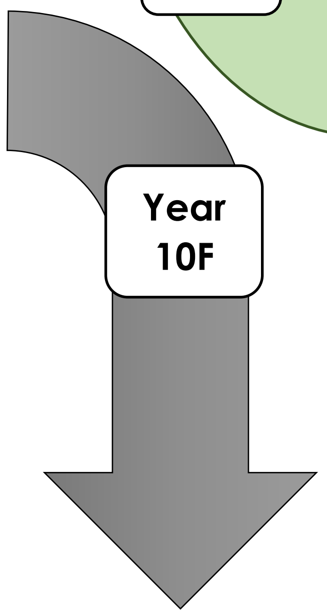
NUMBER	ALGEBRA	RATIO, PROPORTION & RATES	GEOMETRY & MEASURES	STATISTICS & PROBABILITY
Place Value	Notation	Notation	Shape	Representing Data
Calculating	Formulae	Proportion	Perimeter & Area	Summarising Data
Operations	Graphs	Percentages	Construction	Probability
Negatives	Sequences	Rates of Change	Transformations	
Factors, Multiples, & Primes	Equations	Scale	Angles	
Fractions, Decimals & Percentages	Inequalities	Graphs	3D Shape	
Indices	Non-Linear Graphs	Similarity	Measures	

G29F	Constructions, Scale Drawing, and Loci	**R22F**	Ratio & Proportion Recap	**R23F**	Equations for Proportionality	**R24F**	Similarity & Congruence
R21F	Percentages Recap	**G30F**	Area & Circumference Recap	**G31F**	Application of Trigonometry		



S21F	Sampling & Questionnaires	**G28F**	Vectors	**N31F**	Bounds	**A32F**	Rearranging Formulae 1
A36F	Factorising Quadratics	**A35F**	Non-Linear Graphs	**A33F**	Simultaneous Equations	**A33F**	Rearranging Formulae 2





Place Value	Calculating	Operations	Negatives	Factors, Multiples, & Primes	Fractions, Decimals & Percentages	Indices	Notation	Formulae	Graphs	Sequences	Equations	Inequalities	Non-Linear Graphs	Notation	Proportion	Percentages	Rates of Change	Scale	Graphs	Similarity	Shape	Perimeter & Area	Construction	Transformations	Angles	3D Shape	Measures	Representing Data	Summarising Data	Probability
NUMBER							ALGEBRA							RATIO, PROPORTION & RATES							GEOMETRY & MEASURES							STATISTICS & PROBABILITY		

G24F	Trigonometry	A30F	Solve Linear Inequalities	G26F	Bearings & Scale Drawings	A31F	Forming & Solving Equations
G25F	Arcs & Sectors	S20F	Sample Space; Venn Diagrams	G27F	Properties of Shape; Tessellation		Year 11 Prep

ST1 → ST1 → EBI → G25F → RECALL → A30F → S20F → G26F → G27F → A31F → Yr 11 Prep → Yr 11 Prep → Year 11

G22F	Surface Area & Volume; Density	N29F	Rounding & Estimation	S17F	Probability Tree Diagrams	R18F	Speed Distance Time
G23F	Pythagoras' Theorem	R19F	Conversion Graphs	S18F	Scatter Graphs Time Series	G21F	Area and Perimeter
N30F	Index Laws	R20F	Best Buys	N28F	Standard Form	A29F	Expanding and Factorising

R18F → G21F → A29F → S17F → S18F → N28F → N29F → R19F → R20F → G22F → G23F → N30F → G24F → ST1

N24F	Calculations with Decimals; HCF & LCM	N26F	Calculations with Fractions	A27F	Nth Term of Sequences	R17F	Repeated Percentage Change
G19F	Congruent Transformations	S14F	Relative Frequency	G20F	Angles in Parallel Lines	S15F	Data Representation
A26F	Substitution and Solving	N27F	Fraction, Decimal Percentage Calculations	A28F	Linear Graphs	S16F	Averages from Tables

Year 10F → N24F → G19F → A26F → N26F → S14F → N27F → A27F → G20F → A28F → R17F → S15F → S16F → RECALL

NUMBER								ALGEBRA							RATIO, PROPORTION & RATES							GEOMETRY & MEASURES							STATISTICS & PROBABILITY		
Place Value	Calculating	Operations	Negatives	Factors, Multiples, & Primes	Fractions, Decimals & Percentages	Indices		Notation	Formulae	Graphs	Sequences	Equations	Inequalities	Non-Linear Graphs	Notation	Proportion	Percentages	Rates of Change	Scale	Graphs	Similarity	Shape	Perimeter & Area	Construction	Transformations	Angles	3D Shape	Measures	Representing Data	Summarising Data	Probability

Year 10H

A23 → G17 → S12 → A24 → G18 → A25 → ST2 → ST2 → S13 → EBI → N23 → R17

A23	Solve Simultaneous Equations inc. Graphically	G17	Construction & Loci	A24	Plotting Non-Linear Graphs	A25	Solve & Represent Inequalities	N23	Prime Factor Form
		S12	Averages for Grouped Frequency Tables	G18	Arcs & Sectors	S13	Scatter Graphs	R17	Proportion Graphs

Year 10F

A21 → R13 → S10 → ST1 → ST1 → R14 → EBI → N22 → R15 → A20 → G16 → S11 → N23 → R16

S11	Relative Frequency	R15	Direct Proportion Formulae	S10	Set Notation	N21	Standard Form
N23	Use of a Calculator	A22	Nth Term of Quadratic Sequences	R14	Metric Units for Volume	A21	Equations of Linear Graphs
R16	Rates of Change	G16	Volume & Surface Area	N22	Estimation and Accuracy	R13	Similarity in 2D

Year 9

N18 → A18 → N19 → G13 → S9 → R11 → A19 → G14 → R12 → G15 → N20 → A20 → N21

N18	Calculations with Fractions	G13	Lengths in Right-Angled Triangles	A19	Solve Equations with Unknowns on Both Sides	G15	Angles and Polygons
A18	Expanding Brackets	S9	Probability of Combined Events	G14	Combined Transformations	N20	Further Index Laws
N19	Fraction, Decimal & Percentage Equivalence Calculations	R11	Percentage Change	R12	Dividing into Ratio	A20	Higher Order Formulae

Strand	Topics
NUMBER	Place Value, Calculating, Operations, Negatives, Factors, Multiples, & Primes, Fractions, Decimals & Percentages, Indices
ALGEBRA	Notation, Formulae, Graphs, Sequences, Equations, Inequalities, Non-Linear Graphs
RATIO, PROPORTION & RATES	Notation, Proportion, Percentages, Rates of Change, Scale, Graphs, Similarity
GEOMETRY & MEASURES	Shape, Perimeter & Area, Construction, Transformations, Angles, 3D Shape, Measures
STATISTICS & PROBABILITY	Representing Data, Summarising Data, Probability

G12	Bearings & Scale Drawing	A17	Plotting Quadratics	N16	Indices	A16	Solve Linear Inequalities
R10	Direct Proportion Graphs	R9	Converting Units for Area	N17	Multiplying Decimals	N15	HCF & LCM

Year 9 ← R10 ← G12 ← R9 ← A17 ← N17 ← N16 ← N15 ← A16 ← R8 ← EBI ← R7 ← A15

S8	Averages from Tables	G11	Translation & Enlargements	A15	Changing the Subject	S9	Experimental Probability
A13	Expanding and Factorising	A14	Solving Equations	G12	Representing 3D Shapes	R7	Direct Proportion Problems
G10	Constructions and Loci	N13	Mixed Numbers	N14	Calculating with Fractions	R8	Speed. Distance, Time

ST2 ↑ S9

R6 → G8 → S8 → EBI → A13 → G10 → G11 → A14 → N13 → A15 → G12 → N14 → S9

A12	Substitution with Negatives	S7	Two-Way Tables and Venn Diagrams	A10	Nth term of a Sequence	N9	Use of a Calculator
R6	Sharing in Ratio	N11	Rounding and Estimation	S6	Representing Continuous Data	N10	Order of Operations
G8	Angles in Parallel Lines	R5	Percentages and Finance	A11	Equation of a Straight Line	G7	Area and Circumference of Circles

EBI ↑ A12

A12 ← ST1 ← ST1 ← R5 ← N11 ← S7 ← A11 ← S6 ← A10 ← G7 ← N10 ← N9 ← Year 8

NUMBER							ALGEBRA							RATIO, PROPORTION & RATES							GEOMETRY & MEASURES							STATISTICS & PROBABILITY		
Place Value	Calculating	Operations	Negatives	Factors, Multiples, & Primes	Fractions, Decimals & Percentages	Indices	Notation	Formulae	Graphs	Sequences	Equations	Inequalities	Non-Linear Graphs	Notation	Proportion	Percentages	Rates of Change	Scale	Graphs	Similarity	Shape	Perimeter & Area	Construction	Transformations	Angles	3D Shape	Measures	Representing Data	Summarising Data	Probability

R4	Percentages with a Multiplier	S3	Averages for Small Data Sets	A8	Plot Linear Functions	S5	Time Series Graphs
A6	Changing the Subject of a Formula	A7	Representing Inequalities	S4	Tables & Timetables	A9	Distance-Time Graphs

R4 → A6 → S3 → ST2 → ST2 → A7 → EBI → A8 → S4 → S5 → A9 → Recall / Enrichment → Year 8

A5	Generate and Describe Sequences	S2	Theoretical Probability	A4	Plotting Vertical and Horizontal Lines	A3	Formulae & Substitution
N8	Add and Subtract Fractions	G6	Constructing Triangles	G5	Reflection & Rotation	R2	Converting Metric Units
R3	Proportion: Scaling	N7	Fraction, Decimal & Percentage Equivalence	N6	Factors, Multiples & Primes	N5	Rounding to Multiples

G4 → EBI → A3 → R2 → N5 → A4 → G5 → N6 → S2 → G6 → N7 → A5 → N8 → R3

N1	Calculations and Investigations	G1	Measures of 2D Shapes	G2	Properties of 2D Shapes	A2	Forming and Solving Equations
N2	Calculations with Negatives	A1	Introducing Algebraic Notation	S1	Representing Categorical Data	N4	Use of a Calculator
N3	Order of Operations	R1	Ratio and Fractions	G3	Angle Facts	G4	Nets of 3D Shapes

Year 7 → N1 → N2 → N3 → G1 → A1 → R1 → G2 → S1 → G3 → A2 → N4 → ST1 → ST1

Strand	Topics
NUMBER	Place Value; Calculating; Operations; Negatives; Factors, Multiples, & Primes; Fractions, Decimals & Percentages; Indices
ALGEBRA	Notation; Formulae; Graphs; Sequences; Equations; Inequalities; Non-Linear Graphs
RATIO, PROPORTION & RATES	Notation; Proportion; Percentages; Rates of Change; Scale; Graphs; Similarity
GEOMETRY & MEASURES	Shape; Perimeter & Area; Construction; Transformations; Angles; 3D Shape; Measures
STATISTICS & PROBABILITY	Representing Data; Summarising Data; Probability