Curriculum map template Maths

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):
	UNIT 1 Calculations 1. 1 Place value 1.2 Comparing integers and Ordering integers 1.3 Adding, subtracting, multiplying & dividing 1.4 Multiply and divide by powers of 10 1.5 Solving financial problems 1.6 Tables and Timetables 1.7 Negative numbers 1.8 BIDMAS	UNIT 3 Expanding & Factorising 3.1 Writing expressions, algebraic notation 3.2 Simplifying expressions 3.3 Function machines 3.4 Expanding single brackets 3.5 Factorising simple expressions 3.6 Substitution 3.7 Solving equations	UNIT 5 Fractions, decimals & percentages 5. 1 Fractions of an amount 5.2 Fraction calculations 5.3 Percentage of an amount non calc 5.4 Percentage of an amount calc 5.5 Percentages over 100% 5.6 Converting between FDP	UNIT 7 Angles & Shape Properties 7.1 Draw and measure lines and angles 7.2 Recognize triangles & quadrilaterals & polygons 7.3 Basic Angle facts 7.4 Symmetry & tessellation	UNIT 9 Graphs 9.1 Plotting coordinates 9.2 Creating a table of values 9.3 Drawing straight line graphs 9.4 Real life graphs	UNIT 11 Sequences 11.1 Describe and continue sequences 11.2 Sequences in a table and graphically 11.3 Linear & Non- linear 11.4 Explaining the term-to-term rule 11.5 Finding missing terms
YEAR 7	UNIT 2 Measurements 2.1 Units of measurements 2.2 Perimeter 2.4 Area of rectangles & triangles 2. 5 Area of trapezium and parallelogram 2.6 Surface area of cuboid	UNIT 4 Ratio & Proportion 4.1 Direct proportion 4.2 Writing & simplifying ratios 4.3 Dividing into a given ratio 4.4 Recipe problems	UNIT 6 Factors & Multiples 6. 1 Factors, primes & multiples 6.2 Product of prime factors 6.3 HCF & LCM 6.4 Square and triangular numbers 6.5 Powers and roots	UNIT 8 Rounding & Estimation 8.1 Rounding 8.2 Significant Figures 8.3 Estimation	UNIT 10 Probability & Statistics 10.1 Probability scales 10.2 Sample space 10.3 Experimental probability 10.4 Averages 10.5 Collecting & representing data 10.6 Bar charts & pie charts	
	Assessment): - Self/peer (all) - End of unit test	Assessment: - Self/peer (all) - End of unit test - AP1 (Aut 1 and Aut 2)	Assessment: - Self/peer (all) - End of unit test	Assessment: - Self/peer (all) - End of unit test - AP2 (Aut 1&2, Spr 1&2)	Assessment: - Self/peer (all) - End of unit test	Assessment: - Self/peer (all) - End of unit test - AP3 (end of year)

	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):
	Knowledge)/skill(s): UNIT 1 Calculations 1.1Integers & Decimals 1.2 Multiplying & Dividing Integers 1.3 Multiplying & Dividing Decimals 1.4 Multiples and factors 1.5 Prime numbers, LCM & HCF 1.6 Squares and cubes 1.7 BIDMAS 1.8 Rounding & Estimation UNIT 2 Expanding & Factorising 2.1 Simplifying expressions 2.2 Expanding double brackets 2.3 Factorising 2.4 Indices 2.5 Substitution 2.6 Using formulae	Knowledge)/skill(s): UNIT 3 Fractions & Percentages 3.1 Ordering fractions & decimals 3.2 Fraction 4 operations 3.3 FDP conversions 3.4 Percentage of an amount 3.5 Percentage increase & decrease 3.6 Percentage change 3.7 Using a calculator to solve percentage problems UNIT 4 Area & Volume 4.1 Metric measure 4.2 Imperial measure 4.3 Perimeter & area of rectangle & triangle 4.4 Perimeter & area of parallelogram & trapezium 4.5 Surface area of cuboids 4.6 Circumference & area of circles 4.7 Volume of a prism 4.8 Writing expressions	Knowledge)/skill(s): UNIT 5 Equations & Inequalities 5.1 Solving multi-step equations 5.2 Solving equations with brackets 5.3 Equations with fractions 5.4 Forming & solving equations 5.5 Inequalities 5.6 Solving Inequalities 5.7 Form and solve inequalities 5.8 Identify and use formulae, expressions, identities and equations UNIT 6 Ratio & Proportion 6.1 Dividing into a ratio 6.2 Solve problems involving ratios of the form 1:n 6.3 Ratio problems 6.4 Direct proportion 6.5 Comparing proportions	Knowledge)/skill(s): UNIT 7 Angles & Shape 7.1 Basic Angle facts 7.2 Properties of a triangle 7.3 Investigate angles between parallel lines and transversal 7.4 Angles in parallel lines 7.5 Properties of a quadrilateral 7.6 Angles in quadrilaterals 7.7 Properties of a polygon UNIT 8 Probability & Statistics 8.1 Mutually exclusive events 8.2 Experimental & theoretical probability 8.3 Drawing Venn diagrams 8.4 Collecting data 8.5 Bar charts 8.6 Scatter graphs 8.7 Comparing data	Knowledge)/skill(s): UNIT 9 Graphs 9.1 Drawing horizontal & vertical lines 9.2 Plotting straight line graphs 9.3 Equation of a straight line 9.4 Real life graphs 9.5 Time series graphs 9.6 Speed, distance time graphs UNIT 10 Transformations & Constructions 10.1 Transformations 10.2 Scale Drawings 10.3 Constructing triangles	Knowledge)/skill(s): UNIT 10 Transformations& Constructions 10.4 Bisectors 10.5 Loci 10.6 Pie charts 10.7 Bearings
_	Assessment:	of perimeter and area Assessment:	Assessment:	8.8 Averages Assessment:	Assessment:	Assessment:
	- Self/peer (all)	- Self/peer (all)	- Self/peer (all)	- Self/peer (all)	- Self/peer (all)	- Self/peer (all)
	- End of unit test	- End of unit test - AP1 (Aut 1 and Aut 2)	- End of unit test	- End of unit test - AP2 (Aut 1&2, Spr 1&2)	- End of unit test	- End of unit test - AP3 (end of year)
	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):
	UNIT 1 Fractions & Percentages	UNIT 4 Angles & Shape Properties	UNIT 6 Equations & Inequalities 6.1 Solving equations	UNIT 8 Probability & Statistics	UNIT 10 Ratio & Proportion 10.1 Solve problems with direct proportion	UNIT 12 Rates of Change 12.1 Speed, distance and time problems

YEAR 1.1 Adding & 4.1 Nets, plans & 6.2 Forming and 8.1 Single event 10.2 Direct proportion 12.2 Use distance – 9 Subtracting fractions solving equations probability elevations and conversion time graphs 1.2 Multiplyina & 4.2 Congruency & 6.3 Solvina equations 8.2 Independent araphs 12.3 Solve problems Dividing fractions with algebraic 10.3 Solve problems with density, mass and Similarity events 4.3 Properties of 8.3 Using tree with inverse 1.3 Calculating fractions volume trianales 12.4 Convert percentage increase 6.4 Rearranaina diaarams proportion 4.4 Properties of formulae 8.4 Cumulative 10.4 Graphs of inverse compound units & decrease 6.5 Solving inequalities 12.5 Exchange rates & 1.4 Reverse polygons frequency relationships 4.5 Draw and 8.5 Box plots 10.5 Solve ratio percentages araphs UNIT 7 Area & Volume 8.6 Averages from 1.5 Repeated measure anales problems 7.1 Area of 2D Shapes 4.6 Basic anale facts 10.6 Solve problems percentage change arouped data 7.2 Area and 4.7 Anales in parallel involving ratio and 1.6 Recurring decimals Circumference of a **UNIT 2 Sequences** lines alaebra **UNIT 9 Graphs** circle 4.8 Angles in polygons 2.1 Linear sequences 7.3 Nets, plans & 9.1 Drawing linear 4.9 Angle problems 2.2 Arithmetic graphs elevations with algebra sequences 9.2 Gradients UNIT 11 Pythagoras 7.4 Surface area of 4.10 Bearings 2.3 Geometric Theorem 9.3 Equations of a cubes & cuboids 11.1 Sauares & sauare Sequences straight line 7.5 Surface area of **UNIT 5 Index Laws &** roots 2.4 Quadratic 9.4 Midpoint of a line Surds prisms 11.2 Pythagoras sequences 5.1 HCF & LCM 9.5 Parallel & 7.6 Surface area of Theorem perpendicular lines **UNIT 3 Algebraic** 5.2 Index Laws cylinders 11.3 Using Pythagoras **Manipulation** 5.3 Surds 7.7 Volume of cubes & 3.1 Expanding 5.4 Standard form cuboids brackets 7.8 Volume of prisms & 3.2 Factorisina cylinders **quadratics** 3.3 Difference of two sauares 3.4 Simplifying alaebraic fractions 3.5 Algebra and shape Assessment: Assessment: Assessment: Assessment: Assessment: Assessment: - Self/peer (all) - End of unit test - AP2 (Aut 1&2, Spr 1&2) - AP3 (end of year) - AP1 (Aut 1 and Aut 2) Knowledge)/skill(s): Knowledge)/skill(s): Knowledge)/skill(s): Knowledge)/skill(s): Knowledge)/skill(s): Knowledge)/skill(s): UNIT 1 Fractions & **UNIT 4 Angles** UNIT 6 Power & Roots **UNIT 8 Ratio & Proportion UNIT 10 Statistics &** Revision Percentages **Probability** 4.1 Angles in parallel 6.1 Indices 8.1 Ratio 1.1 Fraction 10.1 Averages from lines (2) 6.2 Surds 8.2 Ratio & fractions grouped data Calculations 4.2 Angles in polygons YEAR 6.3 Rounding & 8.3 Ratio problems 1.2% of an amount (2) Estimation 8.4 Ratio & scales 10

1.3 % increase & decrease 1.4 % change 1.5 Reverse percentages 1.6 % problems 1.7 Converting between FDP 1.8 Recurring decimals UNIT 2 Sequences 2.1 Linear sequences 2.2 Quadratic sequences 2.3 Special sequences UNIT 3 Expressions & Functions 3.1 Expanding binomials 3.2 Factorising quadratics 3.3 Using formulae/Substitution 3.4 Equations, identities & formulae 3.5 Functions 3.6 Simplifying algebraic fractions	4.3 Bearings (2) 4.4 Constructions (3) UNIT 5 Area & Volume 5.1 Area of 2D shapes 5.2 Parts of a circle, area & circumference of circles 5.3 Area of sector & length of an arc 5.4 Volume of cuboids & prisms 5.5 Volume of cylinder, sphere & cones 5.6 Surface area of 3D shapes	6.4 Limits of accuracy 6.5 Bounds 6.6 Standard form 6.7 Calculating with standard form UNIT 7 Equations & Inequalities 7.1 Solving linear equations 7.2 Solving equations involving brackets 7.3 Solving equations involving fractions 7.4 Rearranging formulae 7.5 Drawing straight line graphs 7.6 Inequalities 7.7 Solving inequalities 7.8 Representing inequalities on a graph 7.9 Simultaneous equations	8.5 Combining ratios 8.6 Proportion 8.7 Transformations UNIT 9 Pythagoras & Trigonometry 9.1 Pythagoras theorem 9.2 Trigonometry 9.3 Bearings using Pythagoras & trigonometry	10.2 Cumulative frequency 10.3 Box plots 10.4 Scatter graphs 10.5 Probability 10.6 Experimental probability 10.7 Venn diagrams 10.8 Tree diagrams UNIT 11 Graphs 11.1 Gradients 11.2 Midpoints & length of a line 11.3 Equation of a straight line 11.4 Drawing quadratic graphs	
algebraic fractions Assessment:	Assessment:	Assessment:	Assessment:	Assessment:	Assessment:
- Self/peer (all) - End of unit test	- Self/peer (all) - End of unit test - AP1 (Aut 1 and Aut 2)	- Self/peer (all) - End of unit test	- Self/peer (all) - End of unit test - AP2 (Aut 1&2, Spr 1&2)	- Self/peer (all) - End of unit test	- Self/peer (all) - End of unit test - AP3 (end of year)

Knowledge)/skill(s): Knowledge)/skill(s): Knowledge)/skill(s): N1 Prime Numbers G1 Circle Terminology N19 Fractions and N2 Multiples and G2 Area of a circle percentages factors G3 Circumference of N20 Fractions and N3 LCM & HCF ratio problems a circle N4 Product of prime G4 Arc lengths and N21 Terminating factors sectors decimals and N5 Ordering Numbers **GH1** Circle Theorems fractions HN1 Finance G5 Area of triangles, N22 Divide by a HN2 Product rule trapezium and fractionS1 Pie charts N6 Calculate with parallelogram S2 Types of data decimals G6 Area of composite S3 Comparing data N7 Order of operations using graphs shapes N8 Compound S4 Scatter graphs G7 Perimeter of 2D Measures shapes S5 Time series N9 Converting metric G8 Volume of prisms SH1 Histograms units G9 Surface area SH2 Cumulative N10 Powers and roots frequency GH2 Volume of 3D HN3 Surds SH3 Box plots shapes YEAR N11 Index Laws SH4 Quartiles and GH3 Similar shapes N12 Roundina 11 R1 Use ratio notation interquartile rangeG10 N13 Estimations R2 Compare fractions, Alternate and N14 Standard form corresponding angles decimals and N15 Index Laws G11 Bearings percentages HN4 Index laws R2 Compare lengths, G12 Loci (negative and areas and volumes G13 Standard fractional) R3 Comparing constructionsG14 A1 Sequences and rules quantities as a ratio **Pythagoras** R4 Division of a G15 Trigonometry A2 Position to term rule GH4 Area of a trianale A3 Sequences of auantity as a ratio square, triangular and RH1 Scale factors and GH5 Cosine rule cube similarity GH6 Pythagoras and tria 2D and 3D RH2 Solve proportion A4 Nth term of a linear problems GH7 Sine ruleG16 sequence AH1 Nth term of a RH3 Gradients and vectors quadratic sequence the rate of changeR5 G17 Transformations **GH8** Combined Express one quantity AH2 Geometric as a percentage of transformations sequences A5 Four quadrants another

Knowledge)/skill(s): A16 Factorise single bracket A17 Linear equations A18 Multiplying single brackets A19 Writing formulae and expressions A20 Derive an equation AH12 Expand two or more binomials AH13 Quadratic eauations AH14 Represent quadratic inequalitiesA21 Expanding binomials A22 Expressions, equations and formulae A23 Factorising auadratic expressions A24 Solve linear inequalities one variable AH15 Quadratic eauations (completing the square) AH16 Approximate solutions to equations usina iteration\$6 **Averages** S7 Averages from grouped data P1 Frequency trees P2 Mutually exclusive P3 Relative frequency

	A6 Equation of a line	R6 Problems involving	GH9 Vector	P4 Theoretical	
	A7 Graphs of linear	ratios	arguments and	probability	
	functions	R7 Proportion and	proofA11 Linear	P5 Venn diagrams	
	A8 Graphs of	ratio	equations one	P6 Probability of	
	quadratic functions	R8 Ratio and fractions	unknown	dependent events	
	A9 Plotting straight line	R9 Ratio sharing	A12 Using formulae	PH1 Probability of	
	graphs	RH4 Compound units	A13 Changing the	independent evens	
	AH3 Equation of a line	RH5 Direct and inverse	subject	PH2 Conditional	
	and perpendicular	proportion problems	A14 Collecting like	probability	
	lines	R10 Percentage	terms	,	
	AH4 Cubic and	change	A15 Expressions		
	Reciprocal graphs	R11 Simple interest	AH9 Quadratic		
	A10 Using the	and financial maths	equations factorising		
	equation of a straight	RH6 Growth and	AH10 Simultaneous		
	line	decay	equations		
	AH5 Exponential	RH7 Reverse	AH11 Algebraic		
	graphs	percentage changes	fractions		
	AH6 Equation of a	N16 Error Intervals			
	circle	N17 Adding and			
YEAR 11	AH7 Equation of a	subtracting fractions			
- 11	tangent	N18 Multiplying			
	AH8 Gradient and	fractions			
	area under graphs	HN5 Recurring			
		decimals			
		HN6 Upper and lower			
		bounds			
	Assessment:	Assessment:	Assessment:	Assessment:	
	- Self/peer (all)	- Self/peer (all)	- Self/peer (all)	- Self/peer (all)	
	- End of unit test	- End of unit test	- End of unit test	- End of unit test	
	- AP1	- AP2	- AP3	- AP4	

Υε	eai
1	2

Knowledge)/skill(s): Unit 1 Algebra and **Functions** a. Algebraic expressions - basic alaebraic manipulation, indices and surds b. Quadratic functions - factorising, solving, graphs and the discriminants c. Equations quadratic/linear simultaneous d. Inequalities – linear and quadratic (including graphical solutions) e. Graphs - cubic, quartic and reciprocal f. Transformations – transforming graphs -

Unit 2 Coordinate geometry a. Straight-line graphs, parallel/perpendicular, length and area problems b. Circles – equation of a circle, geometric problems on a grid

f(x) notation

Knowledge)/skill(s):

Unit 5 Vectors

a. Definitions.

magnitude/direction, addition and scalar multiplication b. Position vectors. distance between two points, geometric problems Unit 6 Differentiation a. Differentiation Definition, differentiating polynomials, second derivatives Gradients, tangents, b. normals, maxima and minima Unit 7 Integration a. Definition as opposite of differentiation, indefinite integrals of b. Definite integrals and areas under curves Unit 8 Exponentials & Loaarithms a. Exponentials and logarithms:

b. Exponential

logarithms

functions and natural

Knowledge)/skill(s):

Unit 1 Statistical
a. sampling intro
Advantages and
disadvantages of
sampling
b. Understand and
use sampling
techniques; Compare
Data presentation
and interpretation

Unit 2 Data a. Presentation and Interpolation Calculation and interpretation of measures of location and measures of variation; Understand and use coding b. Interpret diagrams for single-variable data; Interpret scatter diagrams and regression lines; Recognize and interpret outliers; Draw simple conclusions

Unit 3 Probability a. Mutually exclusive events; Independent events

Knowledge)/skill(s): Unit 1 Quantities and

units in mechanics a. Introduction to mathematical modelling and standard S.I. units of lenath, time and mass b. Definitions of force, velocity, speed, acceleration and weight and displacement; Vector and scalar quantities Unit 2 Kinematics 1 a. Graphical representation of velocity, acceleration and displacement b. Motion in a straight line under constant acceleration: suvat formulae for constant acceleration: Vertical motion under gravity

Knowledge)/skill(s):

Unit 1 Proof: Examples including proof by deduction* and proof by contradiction

Unit 2 Algebraic and partial fractions a. Simplifying algebraic fractions b. Partial fractions

Unit 3 Functions and modelling
a. Modulus function
b. Composite and inverse functions
c. Transformations
d. Modelling with functions*

Unit 4 Series and sequences a. Arithmetic and geometric progressions (proofs of 'sum formulae') b. Sigma notation c. Recurrence and iterations

Knowledge)/skill(s):

Unit 5 The binomial theorem
a. Expanding (a + bx)n for rational n; knowledge of range of validity
b. Expansion of functions by first using partial fractions

Unit 6 Trigonometry a. Radians (exact values), arcs and sectors b. Small angles c. Secant, cosecant and cotangent (definitions, identities and graphs); Inverse trigonometrical functions; Inverse trigonometrical **functions** d. Compound* and double (and half) anale formulae *geometric proofs expected. e. $R\cos(x \pm a)$ or R $\sin (x \pm a)$ f. Provina trigonometric identities g. Solving problems in context (e.g. mechanics)

Unit 3 Forces & Newton's Laws

Year 12	Unit 3 Further Algebra a. Algebraic division, factor theorem and proof b. The binomial expansion Unit 4 Trigonometry a. Trigonometry Trigonometric ratios and graphs b. Trigonometric identities and equations		Unit 4 Statistical distribution a. Use discrete distributions to model real-world situations; Identify the discrete uniform distribution; Calculate probabilities using the binomial distribution (calculator use expected) Unit 5 Statistical hypothesis testing a. Language of hypothesis testing; Significance levels b. Carry out hypothesis tests involving the binomial distribution	a. Newton's first law, force diagrams, equilibrium, introduction to i, j system b. Newton's second law, 'F = ma', connected particles (no resolving forces or use of F = µR); Newton's third law: equilibrium, problems involving smooth pulleys Unit 4 Kinematics 2 a. Variable force; Calculus to determine rates of change for kinematics b. Use of Integration for kinematics problems		
	Assessment: - Self/peer (all) - End of unit test	Assessment: - Self/peer (all) - End of unit test - AP1	Assessment: - Self/peer (all) - End of unit test	Assessment: - Self/peer (all) - End of unit test - AP2	Assessment: - Self/peer (all) - End of unit test	Assessment: - Self/peer (all) - End of unit test - AP3

	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	Knowledge)/skill(s):	
	Unit 7 Parametric	Unit 10 Integration (1)	Unit 1Regression and	Unit 1Moments:	
	equations	a. Integrating xn	correlation	Forces' turning effect	
	a. Definition and	(including when n = -	a. Change of variable		
	converting between	1), exponentials and	b. Correlation	Unit 2 Forces at any	
	parametric and	trigonometric	coefficients. Statistical	angle	
	Cartesian forms	functions. Integrating	hypothesis testing for	a. Resolving forces	
	b. Curve sketching	functions defined	zero correlation	b. Friction forces	
	and modelling	parametrically.		(including coefficient	
		b. Using the reverse of	Unit 2 Probability	of friction µ)	
	Unit 8 Differentiation	differentiation, and	a. Using set notation	μ,	
	a. Differentiating sin x	using trigonometric	for probability	Unit 3 Applications of	
	& cos x from first	identities to	Conditional	kinematics: Projectiles	
	principles	manipulate integrals	probability		
	b. Differentiating	1 1 2 1 2 1 1 2 1 1 1	b. Questioning	Unit 4 Applications of	
	exponentials and	Unit 11 Integration (2)	assumptions in	forces	
	logarithms	a. Substitution	probability	a. Equilibrium and	
	c. Differentiating	b. By parts	,	statics of a particle	
	products, quotients,	c. Use of partial	Unit 3 The Normal	(including ladder	
/	implicit and	fractions	distribution	problems)	
Ƴear 13	parametric functions.	d. Areas under graphs	a. Understand and	b. Dynamics of a	
13	d. Second derivatives	or between two	use the Normal	particle	
	(rates of change of	curves, including	distribution		
	gradient, inflections)	understanding the	b. Use the Normal	Unit 5 Further	
	e. Rates of change	area is the limit of a	distribution as an	kinematics	
	problems	sum (using sigma)	approximation to the	a. Constant	
		e. The trapezium rule	binomial distribution	acceleration	
	Unit 9 Numerical	f. Differential	Selecting the	(equations of motion	
	methods	equations	appropriate	in 2D; the i, j system)	
	a. Location of roots		distribution	b. Variable	
	b. Solving by iterative	Unit 12	c. Statistical	acceleration (use of	
	methods (knowledge	a. Vectors (3D): Use	hypothesis testing for	calculus and finding	
	of 'staircase and	of vectors in 3D	the mean of the	vectors r ⁻ and r ⁻ at a	
	cobweb' diagrams)	knowledge of column	Normal distribution	given time)	
	c. Newton-Raphson	vectors and i, j and k			
	method	unit vectors			
	d. Problem solving				
	Assessment:	Assessment:	Assessment:	Assessment:	
	- End of unit test	- End of unit test	- End of unit test	- End of unit test	
	- AP1	- AP2	- AP3	- AP4	
	7 W 1	, , , ,	7.0 0	'"	