St Dominic's School

Curriculum Intent: The teaching of mathematics at St. Dominic's School aims to ensure that children develop an excellent level of mathematical, facts, problem solving, reasoning and understanding which enables them to use and apply maths in a range of contexts. We ensure that pupils and students have developed functional independence, ready for their next destinations and later employability.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Core Values	Myself		My Context		The Wider World	
	I Am Me	I Matter	I Am Unique	I Belong	I Am Safe	I Am Prepared
Extra-Curricular Events and Assemblies	- Year 11 Work Experience - Student Voice Elections - House Captains Elections - Equality Champions Elections - Key Stage transfer events - Debate assemblies - Celebration assemblies	- College open days - Wellbeing week - Anti-bullying week - Debate assemblies - Celebration assemblies	- Year 9 Options choices - Year 11 mock exams - Equality and diversity week - Talent week - Autism awareness - Debate assemblies - Celebration assemblies	- Giving back week - Multicultural week - Careers week - Debate assemblies - Celebration assemblies	- Year 6 SATs - Digital literacy day - Keeping safe week - Bike ability - College taster days - Debate assemblies - Celebration assemblies	- Moving Up Week - Year 10 Mock Examinations - Year 11 and Sixth Form Examinations - Sports Day - College taster days - Debate assemblies - Celebration assemblies
FBV Focus	Individual Liberty Democracy		Mutual Respect Tolerance		The Rule of Law Democracy	
Skills for Independence	Self-Care	Functional Motor	Sensory Modulation	Independent Living	Personal Safety and Welfare	Organisation and Preparation for Work
Skills for Learning	Self-Managers	Independent Enquirers	Reflective Learners	Team Workers	Effective Participators	Creative Thinkers
Skills for Communication	Attention & Listening	Understanding	Narrative Skills	Vocabulary	Relationships	Play and Social Interaction
Skills for Self- Development	Positive Attitudes	Emotional Resilience	Ambitious Goals	Leadership and presentation of self	Staying Safe	Decision making and planning for the future
Skill for Enrichment	Spirituality	Morality	Social Understanding	Citizenship	Cultural Understanding	World of Work
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing Y3-7 GPVS	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary
Writing Y8-11 GPVS	Sentences and Clauses	Nouns, Verbs and tenses	Adjectives, adverbs and grammar	Possession and Speech	Cohesion, organisation and presentation	Punctuation
Writing Y3-11 Composition	Plan and organise	Narrate and describe	Extend	Summarise	Adapt	Edit and revise

Numeracy Y3-6	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling

Mathematics Year 3	Counting
	- Count in multiples of 4, 8, 50 and 100
	- Find 10 or 100 more or less
	
	Represent
	- Identify, represent and estimate numbers
	- Read and write numbers up to 1000 in numerals and in words
	
	Use PV and Compare
	- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
	- Compare and order numbers up to 1000
	
	Problems and Rounding
	- Solve number problems and practical problems involving these ideas
		Recall, Represent, Use
		- Estimate the answer to a calculation and use inverse operations to check answers
		
		Calculations
		- Add and subtract numbers mentally, including:
		  • a three-digit number and ones
		  • a three-digit number and tens
		  • a three-digit number and hundreds
		- Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
		
		Solve Problems
		- Solve problems, including missing number problems
			Recall, Represent, Use
			- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
			
			Calculations
			- Calculate two-digit numbers times one-digit numbers, using mental and formal written methods
			
			Solve Problems
			- Solve problems, including missing number problems, involving
			- multiplication and division
				Recognise and Write
				- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.
				- Recognise, find and write fractions with small denominators
				
				Compare
				- Recognise and show, using diagrams, equivalent fractions with small
				- denominators
				- Compare and order fractions with the same denominators
				
				Calculations
				- Add and subtract fractions with the same denominator
				
				Solve Problems
				- Solve problems that involve all of the above
					Using Measures
					- Measure, compare, add and subtract:
					  • lengths (m/cm/mm);
					  • mass (kg/g);
					  • volume/capacity
					  • (l/ml)
					
					Money
					- Add and subtract amounts of money to give change, using both £ and p in practical contexts
					
					Time
					- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
					- Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight
					- Know the number of seconds in a minute and the number of days in each month, year and leap year
					- Compare durations of events [for example to calculate the time taken by particular events or tasks]
					
					Perimeter, Area and Volume
					- Measure the perimeter of simple 2D shapes
					
					2D Shapes
					- Draw 2D shapes
					
					3D Shapes
					- Make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them
					
					Angles and Lines
					- Recognise angles as a property of shape or a description of a turn
					- Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether
						Present and Interpret
						- Interpret and present data using bar charts, pictograms and tables
						
						Solve Problems
						- Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

					angles are greater than or less than a right angle - Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Numeracy Y3-6	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
Mathematics Year 4	Counting - Count in multiples of 6, 7, 9, 25 and 1000 - Count backwards to include negative numbers Represent - Identify, represent and estimate numbers using different representations - Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. Use PV and Compare - Find 1000 more or less than a given number - Recognise the place value of each digit in a four-digit number - Order and compare numbers beyond 1000 Problems and Rounding - Round any number to the nearest 10,100 or 1000 **Extension:** - **Solve number and practical problems that involve all of the above and with increasingly large numbers**	Recall, Represent, Use - Estimate and use inverse operations to check answers to a calculation Calculations - Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Recall, Represent, Use - Recall multiplication and division facts for multiplication tables up to 12 x 12 - Use place value, known and derived facts to multiply and divide mentally - Recognise and use factor pairs and commutativity in mental calculations Calculations - Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Solve Problems - Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one-digit	Recognise and Write - Count up and down in hundredths - Recognise and write decimal equivalents of any number of tenths or hundredths Compare - Recognise and show families of common equivalent fractions - Compare numbers with the same number of decimal places up to two decimal places Calculations - Add and subtract fractions with the same denominator - Find the effect of dividing a one- or two-digit number by 10 and 100. Solve Problems - Solve problems involving calculating quantities and fractions to divide quantities - Round decimals with one decimal place to the nearest whole number **Extension:** - **Solve simple measure and money problems involving fractions and decimals to two decimal places**	Using Measures - Convert between different units of measure Money - Estimate, compare and calculate different measures including money Time - Read, write and convert time between analogue and digital 12- and 24-hour clocks - Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days Perimeter, Area and Volume - Measure and calculate the perimeter of a rectilinear figure - Find the area of rectilinear shapes by counting squares 2D Shapes - Compare and classify geometric shapes based on their properties and sizes - Identify and draw lines of symmetry in 2D shapes presented in different orientations Angles and Lines - Identify acute and obtuse angles and compare and order angles Position and Direction - Describe positions as coordinates in the first quadrant - Translate shapes - Plot specified points and draw sides to complete a given polygon	Present and Interpret - Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs Solve Problems - Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Numeracy Y3-6	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
Mathematics Year 5	Counting - Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 - Count forwards and backwards with positive and negative whole numbers, including through zero Represent - Read, write, (order and compare) numbers to at least 1,000,000 and determine the value of each digit - Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Use PV and Compare - Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit Problems and Rounding - Interpret negative numbers in context - Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 - Solve number problems and practical problems that involve all of the above	Recall, Represent, Use - Use rounding to check answers to calculations and - determine, in the context of a problem, levels of accuracy Calculations - Add and subtract whole numbers with more than 4 digits, including using formal written methods - (columnar addition and subtraction) - Add and subtract numbers mentally with increasingly large numbers Solve Problems - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Recall, Represent, Use - Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers - Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers - Establish whether a number up to 100 is prime and recall prime numbers up to 19 - Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) Calculations - Multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long multiplication for two-digit numbers - Multiply and divide numbers mentally drawing upon known facts - Divide numbers up to 4-digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context - Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 Solve Problems - Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes - Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates Combined Operations - Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Recognise and Write - Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths - Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number Compare - Compare and order fractions whose denominators are all multiples of the same number Calculations - Add and subtract fractions with the same denominator and denominators that are multiples of the same number - Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Recognise and Write - Read and write decimal numbers as fractions - Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Compare - Round decimals with two decimal places to the nearest whole number and to one decimal place - Read, write, order and compare numbers with up to three decimal places - Solve problems involving number up to three decimal places - Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal Calculations and Problems - Solve problems which require knowing percentage and	Using Measures - Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) - Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints - Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling Money - Use all four operations to solve problems involving measure [for example, money] Time - Solve problems involving converting between units of time Perimeter, Area, Volume - Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres - Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes - Estimate volume [for example, using $1cm^3$ blocks to build cuboids (including cubes)] and capacity [for example, using water] 2D Shapes - Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. - Use the properties of rectangles to deduce related facts and find missing lengths and angles 3D Shapes	Present and Interpret - Complete, read and interpret information in tables, including timetables Solve Problems - Solve comparison, sum and difference problems using information presented in a line graph

				decimal equivalents of simple fractions	- Identify 3D shapes, including cubes and other cuboids, from 2D representations
					
					Angles and Lines
					- Know angles are measured in degrees
					- Estimate and compare acute, obtuse and reflex angles
					- Draw given angles, and measure them in degrees
					- Identify:
					  • angles at a point and
					  • one whole turn (total 360°)
					  • angles at a point on a
					  • straight line and a turn (total 180°)
					  • other multiples of 90°
					
					Position and Direction
					- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	

Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Numeracy Y3-6	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
Mathematics Year 6	Represent and Compare - Read, write, order and compare numbers up to 10,000,000; determine the value of each digit Problems and Rounding - Round whole numbers - Use negative numbers in context, and calculate across zero - Solve number and practical problems that involve all of the above	Calculations - Perform mental calculations, including with mixed operations and large numbers. - Use knowledge of the order of operations to carry out calculations Solve Problems - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - Use simple formulae - Generate and describe linear number sequences - Express missing number problems algebraically - Find pairs of numbers that satisfy an equation with two unknowns - Enumerate possibilities of combinations of two variables.	Recall, Represent, Use - Identify common factors, common multiples and prime numbers - Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Calculations - Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication - Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context - Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context - Perform mental calculations, including with mixed operations Solve Problems - Solve problems involving addition, subtraction, multiplication and division - Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts - Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison - Solve problems involving similar shapes where the scale factor is known or can be found - Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	Compare - Use common factors to simplify fractions - Use common multiples to express fractions in the same denomination - Compare and order fractions, including fractions > 1 Calculations - Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions - Multiply simple pairs of proper fractions, writing the answer in its simplest form - Divide proper fractions by whole numbers Recognise and Write - Identify the value of each digit in numbers given to three decimal places Calculations and Problems - Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places - Multiply one-digit numbers with up to two decimal places by whole numbers - Use written division methods in cases where the answer has up to two decimal places - Solve problems which require answers to be rounded to specified degrees of accuracy - Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction - Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Using Measures - Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate - Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places - Convert between miles and kilometres Time - Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa Perimeter, Area, Volume - Recognise that shapes with the same areas can have different perimeters and vice versa - Recognise when it is possible to use formulae for area and volume of shapes - Calculate the area of parallelograms and triangles - Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3] 2D Shapes - Draw 2D shapes using given dimensions and angles - Compare and classify geometric shapes based on their properties and sizes - Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius 3D Shapes	Present and Interpret - Interpret and construct pie charts and line graphs, and use these to solve problems Solve Problems - Calculate and interpret the mean as an average

			Combined Operations - Use their knowledge of the order of operations to carry out calculations involving the four operations		- Recognise, describe and build simple 3D shapes, including making nets **Angles and Lines** - Find unknown angles in any triangles, quadrilaterals and regular polygons - Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **Position and Direction** - Describe positions on the full coordinate grid (all four - quadrants) - Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Numeracy Y7-11	Number	Algebra	Ratio Proportion and Rates of Change	Geometry and Measure	Probability	Statistics
Mathematics Year 7	<u>Understand and Represent</u> - Using place value - Compare and order numbers - Round to powers of 10 and 1sf - Use factors and multiples - Order directed numbers - Prime factorisation - HCF and LCM **Extension:** - **Write 1sf numbers in standard form** <u>Calculations</u> - Use the four operations with positive integers and decimals - Use a calculator - Multiply and divide by positive powers of 10 - Order of operations - Use the four operations with directed number - Add and subtract fractions including mixed numbers - Use known facts **Extension:** - **Multiply by 0.1 and 0.01** <u>Understand fractions and decimals</u> - Interchange between fractions and decimals below 1 - Find fractions of an amount (up to 1) **Extension:** - **Explore fractions above 1** - **Solve problems with fractions greater than 1** <u>Percentages</u> - Interchange between fractions, decimals and percentages up to 100% - Find percentage of amount using mental and calculator methods (up to 100%) **Extension:** - **Explore over 100%**	<u>Understand Notation and Substitute</u> - Function machines - Algebraic notation - Substitute into expressions - Revisit notation and substitution in the context of directed number - Explore related algebraic expressions **Extension:** - **Simple algebraic fractions** <u>Equivalence and Proof</u> - Understand the difference between equality and equivalence - Collecting like terms - Revisit collecting like terms in the context of directed number - Explore related algebraic expressions **Extension:** - **Simple algebraic fractions** <u>Solve Equations and Inequalities</u> - Form and solve one-step equations - Form and solve two-step equations <u>Linear Graphs</u> - Represent functions graphically <u>Non-Linear Graphs</u> - Represent functions graphically <u>Sequences</u> - Recognise linear and nonlinear sequences - Generate sequences from an algebraic rule	<u>Multiplicative Relationships</u> - Convert metric units - Use multiplicative relationships between known facts	<u>Perimeter, Area and Volume</u> - Solve perimeter problems - Areas of rectangles, parallelograms and triangles **Extension:** - **Area of a trapezium** <u>Construct and Transform Geometric Figures</u> - Geometric notation - Draw lines, angles and simple shapes - Parallel and perpendicular lines - Name and construct polygons <u>Shape Properties</u> - Properties of triangles and quadrilaterals <u>Angle</u> - Angles at a point - Adjacent angles on a straight line - Vertically opposite angles - Angles in triangles and quadrilaterals - Simple angle proofs **Extension:** - **Angles in parallel lines** <u>Geometric Proof</u> **Extension:** - **Simple angle proofs**	<u>Probability</u> - Use the language of probability - Calculate simple probabilities - Use the probability scale - Sample spaces - Understand and use set notation, including Venn diagrams - Know the sum of probabilities is 1 **Extension:** - **Complement of a set**	<u>Represent and Interpret Data</u> - Solve problems with line charts and bar charts - Construct and interpret pie charts <u>Statistical Measures</u> - Find the median and the range - Find the mean
Reading	<u>Re-telling</u>	<u>Literal Questioning</u>	<u>Prediction</u>	<u>Inference</u>	<u>Inference</u>	<u>Evaluation</u>
Writing	<u>Combining words, phrases and clauses</u>	<u>Grammatical terms and word classes</u>	<u>Standard English and formality /functions of sentences</u>	<u>Punctuation</u>	<u>Verb forms/tenses and consistency</u>	<u>Vocabulary</u>

Numeracy Y7-11	Number	Algebra	Ratio Proportion and Rates of Change	Geometry and Measure	Probability	Statistics

Mathematics Year 8	<u>Understand and Represent</u>
	- Revisit Y7 comparing and ordering
	- Write numbers of any size in standard form
	- Revisit Y7 rounding
	- Round to given numbers of d.p. and s.f.
	Extension:
	- **Use negative and fractional indices**
	
	<u>Calculations</u>
	- Multiply and divide fractions
	- Extension:
	- Multiply and divide mixed numbers
	- Revisit converting between units of time
	- Revisit order of operations
	- Calculate with money
	- Use estimation
	Extension:
	- **Convert metric units of length and area**
	- **Use error interval notation**
	
	<u>Understand Fractions and Decimals</u>
	- Revise and extend Y7 coverage
	- Express one number as a fraction of another
	- Explore calculator and non-calculator methods
	
	<u>Percentages</u>
	- Revise and extend Y7 coverage
	- Percentage increase and decrease
	- Using multipliers
	- Express one quantity as a percentage of another, compare two quantities using percentages
	- Work with percentages greater than 100%
	Extension:
	- **Finding the original after percentage change**
		<u>Understand Notation and Substitute</u>
		- Revise and extend Y7 coverage to include more complex expressions
		- Work with indices Additional
		Extension:
		- **Explore powers of powers**
		
		<u>Equivalence and Proof</u>
		- Expand over a single bracket
		- Simplify expressions involving brackets
		- Identify and use formulae, expressions, identities and equations
		Extension:
		- **Expand a pair of binomials**
		
		<u>Solve Equations and Inequalities</u>
		- Revise and extend Y7 coverage
		- Solve inequalities
		- Form and solve equations with brackets
		- Identify and use formulae, expressions, identities and equations
		Extension:
		- **Form and solve equations and inequalities with unknowns on both sides**
		
		<u>Linear Graphs</u>
		- Conversion graphs
		- Using coordinates
		- Plotting graphs:
		  • $y = k$, $x = k$
		  • $y = kx$
		  • $y = x + a$
		  • $y = mx + c$
		- Exploring gradient
		- Exploring non-linear graphs
		Extension:
		- **Direct proportion graphs**
		
		<u>Non-Linear Graphs</u>
		- Using coordinates
		Extension:
		- **Exploring gradient**
		- **Exploring non-linear graphs**
		
		<u>Sequences</u>
		- Revise and extend Y7 coverage to include more complex rules
		Extension:
			<u>Multiplicative Relationships</u>
			- Understand and use scale factors
			- Scale diagrams and maps
			- Currency conversions
			- Conversion graphs
			- Similar shapes
			- Review and extend Y7 work on metric units
			Extension:
			- **Direct proportion graphs**
			- **Convert area and volume measures**
			
			<u>Ratio and Rates</u>
			- Understand and use ratio notation
			- Divide in a ratio
			- Work out parts and wholes
			- 7r as a ratio Additional
			Extension:
			- **Use the form 1: n**
			- **Link gradient and ratio**
				<u>Perimeter, Area and Volume</u>
				- Circumference of a circle
				- Area of a trapezium
				- Area of a circle
				- Area of compound shapes
				
				<u>Construct and Transform Geometric Figures</u>
				- Work with scale factors
				- Revise and extend Y7 notation
				- Recognise line symmetry
				- Reflect shapes in a given line
				Extension:
				- **Standard ruler and compass constructions**
				
				<u>Shape Properties</u>
				- Revise and extend Y7 coverage
				Extension:
				- **Explore diagonals of quadrilaterals**
				
				<u>Angles</u>
				- Revise Y7 coverage
				- Angles in parallel lines
				Extension:
				- **Angles formed by diagonals of quadrilaterals**
				
				<u>Geometric Proof</u>
				- Find and prove simple geometric facts
					<u>Probability</u>
					- Review and extend Y7 coverage
					- Construct sample spaces for more than one event
					- Use sample spaces to find probabilities
					- Use tables and Venn diagrams to find probabilities
					Extension:
					- **Use the product rule for finding total number of outcomes**
						<u>Represent and Interpret Data</u>
						- Recognise different types of data
						- Construct and interpret frequency tables, grouped and ungrouped, and two-way tables
						- Revise and extend Y7 coverage
						- Collecting data
						- Multiple bar charts
						- Line graphs
						- Misleading graphs
						
						<u>Statistical Measures</u>
						- Revise and extend Y7 coverage
						- Find the mode
						- Identify outliers
						- Compare distributions using statistical measures
						Extension:
						- **Find the mean from a grouped or ungrouped frequency table**
						
						<u>Bivariate Data</u>
						- Scatter graphs
						- Correlation
						- Lines of best fit

		- **Find the rule for the nth term of a linear sequence**				
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Sentences and Clauses	Nouns, Verbs and tenses	Adjectives, adverbs and grammar	Possession and Speech	Cohesion, organisation and presentation	Punctuation

Numeracy Y7-11	Number	Algebra	Ratio Proportion and Rates of Change	Geometry and Measure	Probability	Statistics
Mathematics Year 9	Understand and represent number - Revisit and extend Y7/8 content including: - Types of number - Standard form - HCF and LCM - Rational and real numbers - Revisit and extend Y7/8 content including: - Standard form - Prime factorisation Calculations - Revisit fraction arithmetic - Revisit and extend Y7/8 work in the context of financial mathematics Understand fractions and decimals - Revise and extend Y7/8 coverage Percentages - Revise and extend Y7/8 coverage - Reverse percentages - Financial maths **Extension:** - **Repeated percentage change**	Understand notation and substitute - Revise and extend Y7/8 coverage - Revise algebraic representation Equivalence and proof - Revise and extend Y7/8 coverage - Rearranging to the form $y = mx + c$ - Change the subject of a formula - Testing algebraic conjectures - Extension: - Change the subject of a more complex formula - Revise algebraic representation - Expand a pair of binomials Solve equations and inequalities - Revise and extend Y7/8 coverage - Form and solve equations and inequalities with unknowns on both sides Linear graphs - Revise and extend Y7/8 coverage - Simplify, use and interpret $y = mx + c$ - Parallel lines - Interpret graphs in various forms including piecewise linear **Extension:** - **Solve simultaneous equations graphically** - **Explore perpendicular lines** Non-linear graphs - Interpret graphs in various forms (including quadratic, piece-wise, exponential, speed/distance/time) Sequences - Testing conjectures about sequences - Representing sequences - Find the rule for the nth term of a linear sequence	Multiplicative relationships - Testing conjectures about sequences - Representing sequences - Find the rule for the nth term of a linear sequence Ratio & rates - Revise and extend Y7/8 coverage - Speed, distance and time - Density - Compound units - Unit pricing problems **Extension:** - **Repeated percentage change** - **Converting compound measures**	Perimeter, area and volume - Surface area of cuboids and cylinders - Volume of cuboids, cylinders and other prisms **Extension:** - **Explore volume of cones, spheres and compound shapes** - **Surface area of prisms** Construct and transform geometric figures - Standard ruler and compass constructions - Revise Y7/8 coverage - Recognise rotational symmetry - Rotate points about a given point - Translate shapes and describe translations **Extension:** - **Loci** - **Perform a series of transformations** Shape properties - Testing conjectures about shapes - Properties of 3D shapes - 2D shapes in 3D shapes Angles - Revise and extend Y7/8 coverage - Chains of reasoning to find angles Pythagoras and trigonometry - Understand and use Pythagoras' theorem - Show that a triangle is right-angled **Extension:** - **Use Pythagoras' theorem in 3D shapes** - **Explore ratios in right-angled triangles** Geometrical proof - Explore congruency - Revise and extend Y7/8 coverage - Developing chains of reasoning - Prove a triangle is/isn't right angled	Probability - Review and extend Y7/8 coverage - Compare experimental and theoretical probability - Use frequency trees to find probabilities **Extension:** - **Simple tree diagrams**	Represent and interpret data - Revise Y7/8 coverage Statistical measures - Revise and extend Y7/8 coverage Bivariate data - Revise Y8 coverage

				Extension: - **Develop more complex geometrical proofs** - **Explore proofs of Pythagoras' theorem**		
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Sentences and Clauses	Nouns, Verbs and tenses	Adjectives, adverbs and grammar	Possession and Speech	Cohesion, organisation and presentation	Punctuation

Numeracy Y7-11	Number	Algebra	Ratio Proportion and Rates of Change	Geometry and Measure	Probability	Statistics
Year 10 GCSE	<u>Understand and Represent Number</u> - Revise and extend KS3 content: Rounding, limits of accuracy, factors, multiples and primes **Higher:** - **Upper and lower bounds** - **Converting recurring decimals** <u>Calculations</u> - Revisit and extend KS3 number work - Work with exact answers - Work with powers and roots - Calculate with standard form **Higher:** - **Calculate with surds** <u>Understand fractions and decimals</u> - Working with ratios and fractions - Revise and extend KS3 conversions - Revisit converting fractions and decimals <u>Percentages</u> - Revise and extend KS3 content - Simple and compound interest - Finding original values - Repeated percentage change - Revisit conversions and non-calculator methods	<u>Understand Notation and Substitute</u> - Revise and extend KS3 content - Work with powers and roots <u>Equivalence and Proof</u> - Revise and extend KS3 content **Higher:** - **Factorising quadratics of the form $x^2 + bx + c$** - **Maintain equivalence using the rules of indices** <u>Solve Equations and Inequalities</u> - Revise and extend KS3 content - Represent solutions to inequalities on number lines - Form and solve linear simultaneous equations **Higher:** - **Solve quadratic equations and inequalities by factorising** - **Solve simultaneous equations, one linear and one quadratic** <u>Linear Graphs</u> - Revise and extend KS3 content - Solve linear simultaneous equations graphically <u>Non-linear Graphs</u> **Higher:** - **Solve linear and quadratic simultaneous equations graphically** <u>Sequences</u> - Revise and extend KS3 content, including names and types of sequences **Higher:** - **Find the rule for the nth term of a quadratic sequence** - **Sequences with surds**	<u>Multiplicative Relationships</u> - Similar shapes - Enlargement **Higher:** - **Area and volume similarity** - **Revisit area and volume similarity with cones etc.** - **Revise and extend KS3 content including:** - **Unit pricing ('best buys')** - **Currency conversions** - **Revisit area and volume similarity** <u>Ratio & Rates</u> - Ratios and fractions **Higher:** - **Ratios in the context of area and volume** - **Repeated percentage change including compound interest** - **Growth and decay problems** - **Iterative processes**	<u>Perimeter, Area and Volume</u> - Review area and circumference of a circle - Arc length - Area of a sector - Surface areas and volumes of cylinders, cones and spheres - Review KS3 and earlier Y10 content as a context for non-calculator methods <u>Construct and Transform Geometric Figures</u> - Similarity and enlargement - Higher: - Negative scale factors of enlargement - Parts of a circle <u>Shape properties</u> - Revisit shape names and properties in the context of enlargement - Parts of a circle <u>Angles</u> - Review and extend KS3 coverage - Interpret and use bearings <u>Pythagoras and Trigonometry</u> - Revise Pythagoras' theorem - Use trigonometry to find missing sides and angles in right-angles triangles - Exact trig values **Higher:** - **Using the sine and cosine rules** - **Area of a general triangle** - **Revisit Pythagoras and trigonometry in the context of bearings** <u>Geometrical Proof</u> Revisit proof with angle rules - Prove shapes are similar - Congruent triangles - Proving triangles are congruent **Higher:** - **Prove and use the first four circle theorems** - **Understand and use vectors** - **Geometric proof with vectors**	<u>Probability</u> - Review and extend KS3 coverage - Effect of sample size on estimated probabilities - Use tree diagrams - Mutually exclusive and independent events **Higher:** - **Conditional probabilities**	<u>Represent and Interpret Data</u> - Revise and extend KS3 coverage - Comparing distributions using diagrams Frequency polygons Time series **Higher:** - **Cumulative frequency diagrams Box plots Histograms** <u>Statistical Measures</u> - Revise and extend KS3 coverage - Find the modal class - Comparing distributions **Higher:** - **Finding the median and quartiles from cumulative frequency diagrams** <u>Bivariate Data</u> - Revise and extend KS3 coverage - Understand the risks of extrapolation

Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Sentences and Clauses	Nouns, Verbs and tenses	Adjectives, adverbs and grammar	Possession and Speech	Cohesion, organisation and presentation	Punctuation

Numeracy Y7-11	Number	Algebra	Ratio Proportion and Rates of Change	Geometry and Measure	Probability	Statistics
Year 11 GCSE	Understand and Represent - Making ordered lists - Proving equivalence of different forms of number **Higher:** - **Product rule for counting** Calculations - Revisit and extend KS3 number work Understand Fractions and Decimals - Review multiplicative change including fractions and decimals - Proving equivalence Percentages - Solve "show that" problems with percentages	Understand Notation and Substitute - Substitute in kinematics formulae - Functions **Higher:** - **Composite and inverse functions** Equivalence and Proof - Factorising Quadratics of the form $x^2 + bx + c$ - Change the subject of a formula - Review and extend previous content **Higher:** - **Completing the square** - **Change the subject of a formula where the subject appears more than once** - **Algebraic proof** Solve Equations and Inequalities - Form and solve quadratic equations by factorising **Higher:** - **Solve quadratic equations using the formula and completing the square** Linear Graphs - Revise and extend KS3 and Y10 content **Higher:** - **Higher:** - **Perpendicular Lines** - **Equation of the tangent to a circle** Non-linear Graphs - Roots, quadratic, cubic and reciprocal graphs **Higher:** - **Real-life graphs including speed/distance/time** - **Trig graphs** - **Transforming graphs** Sequences - Review KS3 and Y10 coverage	Multiplicative Relationships - Direct and inverse proportion numerically and graphically - Pressure and density **Higher:** - **Variation with powers and roots** Ratio and Rates - Revisit KS3 and Y10 content - Pressure and density **Higher:** - **Gradients of curves** - **Estimate the area under a curve**	Perimeter, Area, Volume - Review perimeter, area and volume formulae as a context for rearrangement - Volume of a pyramid Construct and Transform Geometric Figures - Revisit and extend KS3 and Y10 work - Loci - Plans and elevations Shape Properties - Revisit shape properties in the context of reasoning Angles - Review and extend KS3 and Y10 coverage Pythagoras and Trigonometry - Revisit trigonometry on the context of functions - Revisit Pythagoras and trigonometry **Higher:** - **Revisit trigonometry when exploring trigonometric graphs and transformations of these** Geometrical Proof - Revisit KS3 and Y10 proof - Using correct language in "show that" or "prove" questions **Higher:** - **Prove and use the remaining circle theorems** - **Revisit congruent triangle proofs**	Probability - Review using sample spaces and probability rules	Represent and Interpret Data - Revisit comparing distributions using diagrams - Describing a population Statistical Measure - Revisit comparing distributions using data - Describing a population Bivariate Data - Revision
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Sentences and Clauses	Nouns, Verbs and tenses	Adjectives, adverbs and grammar	Possession and Speech	Cohesion, organisation and presentation	Punctuation

Functional Maths Y10-14	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
AQA Entry Level 3	Properties of Number - Place Value - Rounding - Read, write, order and compare numbers - Recognise and use multiples	Four Operations - Four operations - Inverse operations - Real world problem solving - Estimation	Money - Use of our money system - Equivalent values in coins - Solving real life problems using money - Giving change - Investigations Calendar and Time - Solving problems involving time - Understanding days, weeks, months and years - Using calendars - Roman numerals on a clock - 12- and 24-hour clock - Time conversions - Calculating time in minutes and hours	Ratio - Fractions - Equivalent Fractions - Addition and Subtractions of Fractions - Working out 5, 8 and 10 times the given amount	Geometry - Recognise and name prisms, cylinders and cones - Symmetry - Drawing and recognising nets of cubes and cuboids - Identifying angles - Parallel lines - Co-ordinates - Compass points Measures - Adding lengths, capacities and weights - Converting between different units of length, capacity and weight - Compare and order lengths, capacities and weights - Perimeter - Choosing appropriate measuring instrument - Reading scales - Comparing temperatures including negative temperatures	Statistics - Construct and interpret bar charts - Vertical axis and scales - Pictograms - Tables, diagrams, charts and frequency tables - Completing tally charts and frequency tables - Comparing two or more diagrams - Solving one step and two step problems based on statistical information
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Functional Maths Y10-14	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
LASER Functional Level 1	Understanding Number - Read, write and order whole numbers - Place value - Greater and less than symbols - Rounding - Negative number - Temperatures Budgeting and Money Management - Income and expenditure - Ways to live on a limited budget - Financial transactions - Different methods of paying for goods - How to pay money into an account - Receipts - Payslips - Financial statements - Saving - Methods to save - Budgeting - Income and expenditure	Accessing Public Transport - Identify different modes of transport - Planning journeys - Reading timetables - Payment of fares - Identifying hazards when using transport - Taking a planned journey Skills for Shopping - Planning a visit to a local shop or store - Listing shops to buy different items - Budgeting - Estimating the costs of items and checking they have enough money - Buying items - Checking change	Area and Perimeter - Understanding perimeters of shapes - Using the formula for perimeter - Read and write the units of measures for area - Calculating area of rectangles	Fractions - Read, write and order common fractions and mixed numbers - Equivalent fractions - Fractions of quantities and measurements - Use of calculator with fractions - Ration and direct proportion Percentages - Understanding whole number percentages - Calculating percentages - Understanding percentage increase and decrease - Use of a calculator to calculate percentages	Length, Weight and Capacity - Using metric and imperial measurements - Adding and subtracting units of measure - Identifying the correct units for a task - Identifying different measuring instruments for different tasks - Reading scales. Shape - Properties of 2D shapes: related vocabulary and symmetry - Tessellations and planning a tiling pattern - Reading and recording angles - Use of a protractor	Time and Temperature - Reading the 12- and 24-hour clock - Identifying appropriate devices to measure time - Reading timetables - Dates formats - Use of a calendar - Different units of time - Converting between units of time - Adding and subtracting hours and minutes - Reading thermometers in degrees and Fahrenheit including the freezing point - Negative numbers - Estimating, comparing and measuring temperature
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Functional Maths Y10-14	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
AQA Functional Skills L1	Use of Number and the Number System - Read, write and order numbers - Recognise positive and negative numbers - Using simple formulae - Square numbers - BIDMAS - Fractions - Decimals - Four operations with decimals - Rounding - Percentages - Ratio and proportion	Use of Number and the Number System - Read, write and order numbers - Recognise positive and negative numbers - Using simple formulae - Square numbers - BIDMAS - Fractions - Decimals - Four operations with decimals - Rounding - Percentages - Ratio and proportion	Use of Measures, Shape and Space - Calculating interest and discounts - Conversions - Scales on maps and drawings - Area and perimeter - Volume - 2D and 3D Shapes - Bearings - Angles	Use of Measures, Shape and Space - Calculating interest and discounts - Conversions - Scales on maps and drawings - Area and perimeter - Volume - 2D and 3D Shapes - Bearings - Angles	Handling information and data - Representing discrete data in tables, diagrams and charts. - Grouping discrete data - Finding the mean and range. - Probability	Handling information and data - Representing discrete data in tables, diagrams and charts. - Grouping discrete data - Finding the mean and range. - Probability
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Functional Maths Y10-14	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
LASER Functional L2	Personal Budgeting and Money Management - Examples of personal Income and expenditure and how these are affected by changes in circumstances - Coping on a limited budget in different situations - Strategies to minimise coping on a limited budget - Financial transactions - Receipts - Payslips - Financial statements - Financial information - Saving and ways to save - Planning a budget - Prediction	Personal Budgeting and Money Management - Examples of personal Income and expenditure and how these are affected by changes in circumstances - Coping on a limited budget in different situations - Strategies to minimise coping on a limited budget - Financial transactions - Receipts - Payslips - Financial statements - Financial information - Saving and ways to save - Planning a budget - Prediction	Understanding Common Measures and Shape - Recording durations of time - Converting between units of time - Using calendars and timetables - Measuring, comparing converting and estimating temperatures - Estimating, measuring and converting between different weights, lengths and capacities - Metric and imperial - Conversion graphs - Use of the above in practical contexts - Scale drawings - Ratio - Distance, time and speed - Density - Exchange rates with currency - 3D and 2D Shapes - Area, perimeter and circumference - Using formulae - Volume	Understanding Common Measures and Shape - Recording durations of time - Converting between units of time - Using calendars and timetables - Measuring, comparing converting and estimating temperatures - Estimating, measuring and converting between different weights, lengths and capacities - Metric and imperial - Conversion graphs - Use of the above in practical contexts - Scale drawings - Ratio - Distance, time and speed - Density - Exchange rates with currency - 3D and 2D Shapes - Area, perimeter and circumference - Using formulae - Volume	Using Calculations - Read, write, order and compare whole numbers, negative numbers and decimals - All four operations with whole numbers and decimals - Use of a calculator - Mental arithmetic - Factors, multiples and prime numbers - Fractions, decimals, percentages and equivalencies - Ratio and proportion - BIDMAS - Evaluating expressions and substituting into formulae - Algebra - Reverse, inverse and estimating to check answers to calculations	Using Calculations - Read, write, order and compare whole numbers, negative numbers and decimals - All four operations with whole numbers and decimals - Use of a calculator - Mental arithmetic - Factors, multiples and prime numbers - Fractions, decimals, percentages and equivalencies - Ratio and proportion - BIDMAS - Evaluating expressions and substituting into formulae - Algebra - Reverse, inverse and estimating to check answers to calculations
Reading	Re-telling	Literal Questioning	Prediction	Inference	Inference	Evaluation
Writing	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary

Functional Maths Y10-14	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
Functional Skills L2	<u>Use of Number and the Number System</u> - Read, write, order and compare positive and negative numbers of any size - Calculations with numbers to one million - Estimation and approximation - Algebra - Fractions, Decimals and Percentages - Ration and Proportion - BIDMAS	<u>Use of Number and the Number System</u> - Read, write, order and compare positive and negative numbers of any size - Calculations with numbers to one million - Estimation and approximation - Algebra - Fractions, Decimals and Percentages - Ration and Proportion - BIDMAS	<u>Use of Measures, Shape and Space</u> - Read, write, order and compare positive numbers - Evaluate expressions - Proper and improper fractions - All four operations for decimals - Percentage change - Direct and inverse proportion	<u>Use of Measures, Shape and Space</u> - Read, write, order and compare positive numbers - Evaluate expressions - Proper and improper fractions - All four operations for decimals - Percentage change - Direct and inverse proportion	<u>Handling information and data</u> - Calculating mean, median, mode and range - Probability - Expressing probability as fractions, decimals and percentages - Scatter diagrams - Positive and negative correlation	<u>Handling information and data</u> - Calculating mean, median, mode and range - Probability - Expressing probability as fractions, decimals and percentages - Scatter diagrams - Positive and negative correlation
Reading	<u>Re-telling</u>	<u>Literal Questioning</u>	<u>Prediction</u>	<u>Inference</u>	<u>Inference</u>	<u>Evaluation</u>
Writing	<u>Combining words, phrases and clauses</u>	<u>Grammatical terms and word classes</u>	<u>Standard English and formality /functions of sentences</u>	<u>Punctuation</u>	<u>Verb forms/tenses and consistency</u>	<u>Vocabulary</u>