		Mathematics			
Year	GCSE	Number	Geometry & Measures	Statistics & Probability	Algebra
22m-36m		• Selects a small number of objects from a group when asked, for example, 'please give me one', 'please give me two'.	• Notices simple shapes and patterns in pictures.		
		• Recites some number names in sequence.	• Beginning to categorise objects according to properties such as shape or size.		
		• Creates and experiments with symbols and marks representing ideas of number.	• Begins to use the language of size.		
		• Begins to make comparisons between quantities.	• Understands some talk about immediate past and future, e.g. 'before', 'later' or 'soon'.		
		• Uses some language of quantities, such as 'more' and 'a lot'.	• Anticipates specific time-based events such as mealtimes or home time.		
		• Knows that a group of things changes in quantity when something is added or taken away.			
30m-50m		Uses some number names and number language spontaneously.	• Shows an interest in shape and space by playing with shapes or making arrangements with objects.		
		• Uses some number names accurately in play.	• Shows awareness of similarities of shapes in the environment.		
		• Recites numbers in order to 10.	• Uses positional language.		
		• Knows that numbers identify how many objects are in a set.	• Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.		
		• Beginning to represent numbers using fingers, marks on paper or pictures.	• Shows interest in shapes in the environment.		
		• Sometimes matches numeral and quantity correctly.	• Uses shapes appropriately for tasks.		
		• Shows curiosity about numbers by offering comments or asking questions.	• Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'.		
		• Compares two groups of objects, saying when they have the same number.			
		• Shows an interest in number problems.			
		• Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.			
		• Shows an interest in numerals in the environment.			
		• Shows an interest in representing numbers.			
		• Realises not only objects, but anything can be counted, including steps, claps or jumps.			
40m-60m		• Recognise some numerals of personal significance.	• Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes.		
		• Recognises numerals 1 to 5.	• Selects a particular named shape.		
		• Counts up to three or four objects by saying one number name for each item.	• Can describe their relative position such as 'behind' or 'next to'.		
		• Counts actions or objects which cannot be moved.	• Orders two or three items by length or height.		
		• Counts objects to 10, and beginning to count beyond 10.	• Orders two items by weight or capacity.		
		• Counts out up to six objects from a larger group.	• Uses familiar objects and common shapes to create and recreate patterns and build models.		
		• Selects the correct numeral to represent 1 to 5, then 1 to 10 objects.	• Uses everyday language related to time.		
		• Counts an irregular arrangement of up to ten objects.	• Beginning to use everyday language related to money.		
		• Estimates how many objects they can see and checks by counting them.	• Orders and sequences familiar events.		
		• Uses the language of 'more' and 'fewer' to compare two sets of objects.	• Measures short periods of time in simple ways.		
		• Finds the total number of items in two groups by counting all of them.			
		• Says the number that is one more than a given number.			
		• Finds one more or one less from a group of up to five objects, then ten objects.			
		• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.			
		• Records, using marks that they can interpret and explain.			
		• Begins to identify own mathematical problems based on own interests and fascinations.			
1		Given a number, identify one more and one less	Measure and begin to record length, height, mass/weight, capacity, volume, time		
		Read, write and interpret mathematical statements involving addition, subtraction and equals signs	Recognise and name common 2D shapes (rectangles, squares, circles and triangles)		
		Solve one-step problems that involve addition and subtraction, using concrete objects and pictoral representations, and missing number problems such as 7-? = -9.	Compare, describe and solve practical problems for lengths, heights, mass/weight, capacity, volume, time.		
		Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	Sequence events in chronological order using language such as before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening.		
		Identify and represent numbers using objects and pictoral representations including the number line, and use the language of: equal to, more than, less than, most, least	Recognise and use language relating to dates, including days of the week, weeks, months and years		
		Read and write numbers from 1-20 in numerals and in words	Recognise and name common 3D shapes (cuboids, cube, pyramids, spheres)		
		Represent and use number bonds and related subtraction facts within 20	Recognise and know the value of different denominations of coins and notes		

		Recognise, find and name a half as one of two equal parts of an object, shape or quantity	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times		
		Count, read and write numbers to 100 innumerals; count in multiples of twos, fives and tens	Describe position, direction and movement, including whole, half, quarter and three-quarter turns		
		Add and subtract one-digit and two-digit numbers to 20, including zero			
		Solve one-steo problems involving multiplication and division, by calculating the answer using concrete objects, pictoral representations and arrays with the support of the teacher			
		Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity			
2		Count in steps of 2, 3and 5 from 0 and in tens from any number, forward and backward	Recognise and use symbols related to money and combine amounts to make a particular value		
		Read and write numbers to at least 100 in numerals and in words	Find different combinations of coins that equal the same amounts of money		
		Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures and applying their increasing knowledge of mental and written methods	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change		
		Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Know the number of minutes in an hour and the number of hours in a day		
		Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Identify 2D shapes on the surface of 3D shapes		
		Recognise the place value of each digit in a two-digit number	Compare and sort common 2D and 3D shapes and everyday objects		
		Identify, represent and estimate numbers using different representations, including the number line	Order and arrange combinations of mathematical objects in patterns and sequences		
		Compare and order numbers from 0 up to 100; use less than, more than and equal to signs.	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity		
		Add and subtract numbers using concrete objects, pictoral representations and mentall including, a 2-digit number and ones, a 2-digit number and tens, two 2-digit numbers, adding threee 1-digit numbers	Choose and use appropraite standard units to estimate and leasure length.height in any direction; mass; temperature; capacity to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels.		
		Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	Compare and order lengths, mass, volume/capacity and record the results using more than, less than and equal to signs.		
		Calculate mathematical statements for multiplication and division within the multiplication tables and write them usings the multiplication, division and equals signs.	Compare and sequence intervals of time		
		Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line		
		Recognise, find, name and write fractions, one third, one quarter, two quarters, three quarters of a length, shape, set of objects or quantity	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for a quarter, half and three quarter turn (clockwise and anticlockwise)		
		Use place value and number facts to solve problems	Compare and sequance intervals of time		
		Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line		
		Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplcation and division facts, including problems in contexts	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for a quarter, half and three quarter turn (clockwise and anticlockwise)		
		Write simple fractions fro example, a half of 6 = 3 an recognise equivalence of two quarters and a half.	Ask and answer statistical questions about totalling and comparing categorical data		
			Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.		
			Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces		
			Interpret and construct simple pictograms, tally charts, block diagrams and simple tables		
3		a) Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	a) Measure, compare, add and subtract: lengths, mass, colume/capacity	a) Interpret and present data using bar charts, pictograms and tables	
		b) Add and subtract numbers mentally, including, a 3-digit number and ones, a 3-digit number and tens, a 3-digit number and hundreds.	b) Measure the perimeter of simple 2D shapes	a) Solve one-step questions using information preented in scaled bar charts and pictograms	
		c) Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	c) Add and subtracts amounts of money to give change in practical situations	a) Solve two-step questions using information presented in scaled bar charts and pictograms	
		d) 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	d) Recognise angles as a property of shape or a description of a turn		
		e) Recognise and show, using diagrams, equivalent fractions with small denominators	e) Identify right-angles, recognise that two right angles mak a half turn, three make three quarters of a turn and four complete a turn. Identify whether angles are greater than or less than a right angle.		
		a) Recognise the place value of each digit in a three-digit number	a) Know the number of seconds in a minute and the number of days in each month, year and leap year		
		b) Identify, represent and estimate numbers using different representations, including the number line	b) Compare durations of events		
		c) Read and write numbers up to 1000 in numerals and in words	c) Draw 2D shapes and 3D shapes using modelling materials, recognise 3D shapes in different orientations and describe them.		
		d) Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	a) Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks		
		e) Estimate the answer to a calculation and use inverse operations to check answers	b) 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, am/pm, morning, afternoon, noon, night		
		f) Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods	c) Identify horizontal and vertical lines and pairs of perpendicular and parallel lines		

		g) Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators			
		h) Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
		i) Add and subtract fractions with the same denominator within one whole			
		a) Compare and order numbers up to 1000			
		b) Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction			
		c) Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objecys are connected to m objects			
		d) Compare and order unit fractions, and fractions with the same denominators			
4		a) Estimate and use inverse operations to check answers to a calculation	a) Compare and classify geometric shapes, including quadrilateral and triangles, based on their properties and sizes	a) Interpret and present discrete data using appropriate graphical methods, including bar charts and time graphs	
		b) Recall multiplication and division facts for multiplication tables up to 12x12	b) Find the area of rectilinear shapes by counting squares	a) Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	
		c) Use place value, known and derived facts to multiply and divide mentally, including" multiplying by 0 and 1; dividing by 1; multiplying together three numbers	a) Convert between different units of measure	a) Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	
		d) Recognise and show, using diagramsm families of common equiivalent fractions	b) Measure and calculate the perimeter of a rectilinear figure in cm and m.		
		e) Add and subtract fractions with the same denominator	c) Identify acute and obtuse angles and compare and order angles up to two right angles by size		
		f) Recognise and write decimal equivalents to one quarter, one half and three quarters	d) Identify lines of symmetry in 2D shapes presented in different orientations		
		a) Solve additon and subtraction two-step problems in contexts, deciding which operations and methods to use and why	e) Describe positions on a 2D grid as co-ordinates in the first quadrant		
		b) Recognise and use factor pairs and commutativity in mental calculations	f) Solve problems involving from hours to minutes, minutes to seconds, years to months and weeks to days		
		c) Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout	a) Estimate, compare and calculate different measures, including money		
		d) Recognise and write decimal equivalents of any number of tenths or hundredths	b) Complete a simple symmetric figure with respect to a specific line of symmetry		
		e) Round decimals with one decimal place to the nearest whole number	c) Describe movements between positions as translations of a given unit to the left/right and up/down		
		f) Compare numbers with the same number of decimal places up to two decimal places	d) Plot specified points and draw sides to complete a given polygon		
		g) Solve simple measure and money problems involving fractions and decimals to two decimal places	e) Read, write and convert time between analogue and digital 12 and 24 hour clocks		
		a) Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate			
		b) Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems harder correspondence problems such as n objects are connected to m objects			
		c) Count up and down in hundredths; recognise that hundredths arise when dividing and object by one hundred and dividing tenths by 10.			
		d) Solve problems involving increasingly hardsr fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number			
		e) Find the effect of dividing a 1 or 2-digit number by 10 and 100, idetifying the value of the digits in the answer as one, tenths and hundredths			
5		a) Read, write, order and compare numbers to at least 1000000 and determine the value of each digit	a) Calculate and compare the area of a rectangle (including squares) and including using standard units, square centimetres and square metres and estimate the area of irregular shapres	a) Compare information on a line graph	
		b) Count forwards or backwards in steps of powers of 10 for any given number to tp 1000000	b) Identify 3D shapes including cubes and other cuboids, from 2D representations	a) Solve comparison, sum and difference problems using information presented in a line graph	
		c) Add and subtract numbers mentall with increasingly large numbers	c) Know angles are emasured in degrees: estimate and compare acute, obtuse and reflex angles	a) Complete, read and interpret information in tables, including timetables	
		d) Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	d) Identify the position of a shape following a relection or translation, using the appropriate language, and know that the shape has not changed		
		e) Know and use the vocabulary of prime numbers, prime factors and composite (non-prime numbers)	a) Convert between different units of metric measure		
		f) Establish whether a number up to 100 is prime and recall prime numbers up to 19	b) Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints		
		g) Compare and order fractions whose denominators are all multiples of the same number	c) Measure and calculate the perimeter of composite rectilinear shapes in cm and m		
		h) Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	d) Estimate volume and capacity		
		i) Add and subtract fractions with the same denominator and denominators that are multiples of the same number	e) Solve problems involving converting between units of time		
		j) Read and write decimal numbers as fractions	f) Draw given angles, and measure them in degrees		
		k) Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	g) Identify angles at a point and one whole turn, angles at a point and on a straight line and half a turn, other multiples of 90 degrees		
		a) Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	d) Describe the position of a shape following a relection or translation, using the appropriate language, and know that the shape has not changed		
		b) Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000	a) Use all four operations to solve problems involving measure using decimal notation, including scaling		
		c) Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	b) Use the properties of rectangles to deduce related facts and find missing lengths and angles		

		d) Multiply and divide numbers mentally drawing upon known facts	c) Distinguish between regular and irregular polygons based on reasoning about equal equal sides and angles		
		e) Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	d) Represent the position of a shape following a relection or translation, using the appropriate language, and know that the shape has not changed		
		f) Recognise mixed numbers and improper fractions and convert from one to the other and write mathematical statements greater than 1.			
		g) Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams			
		h) Round decimals with two decimal places to the nearest whole number and to one decimal place			
		a) Solve number problems and practical problems in terms of numbers up to 100000 with ordering, counting backwards and forwards, rounding			
		b) Read Roman numerals to 1000 (M) and recognise years written in Roman numerals			
		c) Add and subtract whole numbers with more than 4 digits, including using formal written methods (Columnar addition and subtraction)			
		d) Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy			
		e) Multiply numbers up to 4-digits by a 1-digit or 2-digit number using a formal written method, including long-multiplication for 2-digit numbers			
		f) Divide numbers up to 4-digits by a 1-digit number using formal written method of short division and interprett remainders appropriately for the context			
		g) Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000			
		h) Recognise and use square numbers and cube numbers, and the notation for square and cubed.			
		i) Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes			
		j) solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates			
		k) Read, write, order and compare numbers with up to 3 decimal places			
		l) Solve problems involving number up to three decimal places			
		m) 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			
	WT	n) Solve problems which require knowing a percentage and a decimal equivalents of a half, a quarter, a fifth, two-fifths, four-fifths and those fractions with a denominator of a multiple of 10 or 25.			
6	1	a) Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	a) Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	a) Interpret pie charts and line graphs and use these to solve problems	a) Use simple formula
		b) Perform mental calculations, including with mixed operations and large numbers	b) Recognise that shapes with the same areas can have different perimeters and vice versa	a) Construct pie charts and line graphs and use these to solve problems	a) Generate and describe linear number sequences
		c) Identify common factors, common multiples and prime numbers	c) Recognise when it is possible to use formulae for area and volume of shapes	a) Calculate and interpret the mean as an average	b) Express missing number problems algebraically
		d) Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	d) Draw 2D shapes using given dimensions and angles		a) Find pairs of numbers that satisfy an equation with two unknowns
		a)Multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication	e) Recognise, describe and build simple 3D shapes, including making nets		b) Enumerate possibilities of combinations of two variables
		b) Use their knowledge of the order of operations to carry out calculations involving the four operations	f) Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons		
		c) Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	a) 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 up to three decimal places		
		d) Solve problems involing addition, subtraction, multiplication and division	b) Convert between miles and kilometres		
		e) Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	c) Calculate the area of parallelograms and triangles		
		f) Compare and order fractions including fractions greater than 1	d) Illustrate and name parts of a circle, including radius, diameter and circumference and know that the diameter is twice the radius		
		g) Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	e) Describe positions on the full coordinate grid (all 4 quadrants)		
		h) Multiply simple pairs of proper fractions, writing the answer in its simplest form	a) Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres, cubic metres and extending to other units		
		i) Divide proper fractions by whole numbers	b) Recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles		
		a) Divide numbers up to 4 digits by a 2-digit 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	c) Draw and translate simple shapes on the coordinate plane and reflect them in the axes		
		b) Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction	a) Solve problems involving similar shapes where the scale factor is known or can be found		
		c) Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places			
		d) Multiply 1-digit numbers with up to 2 decimal places by whole numbers			
		e) Use written division methods in cases where the answer has up to two decimal places			

		f) Solve problems which require answers to be rounded to specified degrees of accuracy			
		g) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts			
		b) Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples			
		a) Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts			
		a) Solve problems involving the calculation of percentages (15% of 360 for example) and the use of percentages for comparison			
7	2	Indices- Changing the base	Find the area of compound shapes (only rectangles/ triangles)	understand the language of probability	Write expressions and equations (using all operations and inequality symbols)
		Understand place value- investigate powers of 10 positive and negative	Calculate the circumference of a circle	understand and use the probability scale	Multiplying and dividing algebraic terms
		Addition, subtraction, multiplication and division (including negatives)	Calculate the Volume of triangular prisms and compound prisms	understand and use estimates of probability	Collecting like terms- adding and subtracting
		Calculate with squares, square roots, cubes and cube roots	Surface area of cubes and cuboids	list all the outcomes for events in a systematic way	Expanding and simplifying with a single bracket
		Understand order of operations including (indices and brackets)	Label a circle and understand the properties (all properties- sector, segment, tangent, chord)	calculate the probability of the event not happening	Factorise into a single bracket (one term)
		Find the HCF and LCM using listing strategies	Congruent shapes	Solve problems using pictograms, line graphs, bar	Substitute values into expressions and formulae (using BIDMAS and indices, roots and fractions)
		Product of prime factors	Problem solving with shapes with informal reasons	calculate the mean, median, mode & range for discrete data	Write formulae & expressions from real-life contexts (involving multiple operations)
		Round to significant figures	Order of rotational symmetry	calculate averages and the range from (pictograms, line graphs, bar charts)	change the subject of a formula (1 step with the 4 operations)
		Multiply fractions (including mixed numbers)	polygons	use data to construct frequency table	solve linear equations (involving single brackets)
		Divide proper fractions	Similar shapes using lengths finding the scale factor in complex shapes	identify the modal class from a frequency table	understand and use inequality symbols
		Percentage of an amount, increase and decrease (any percentage)	Use maps and scale drawings to solve problems		Show inequalities on a number line
		Sharing an amount in a given ratio	Measure an angle including 3 figure bearings		Find the coordinates of the midpoint of line (graphically)
		Write using ratio notation and simplify ratio	convertings metric conversion (area/volume)		Plot linear graphs y=a, x= a
		Calculations involving Money	Construct 2D shapes using a mathematical equipment		Find the nth term of arithmetic sequences
		Worded problems for ratio/proportion (basic)	Use a mirror line to reflect and construct shapes in the line y=a x=b or y=x		Find terms of a sequence using the nth term
		Solving proportion questions the unitary method	Translate a shape using column vectors		
			Enlarge a shape given the (positive integer) scale factor		
			Rotate a shape through a given angle		
8	3	Find the HCF and LCM using prime factors	Calculate the area of circles	understand and use the term 'expected frequency'	use index laws with algebraic terms (multiplying, dividing and brackets)
		Converting between ordinary number and standard form	Pythagoras' theorem in two dimensions, finding the long and short side	Use estimates of probability from theoretical models	Expanding and simplifying with a single brackets (with or without using index laws)
		Use a scientific calculator	worded area and perimeter problems of 2D shapes (excl. circles), including algebraic problems, and finding shaded regions	estimate probabilities from previously collected data	Factorise into a single bracket (multiple terms)

		Estimation- using significant figures	volume of cylinders	use set notation for elements (union &intersection)	Write formulae & expressions from real-life contexts (involving equating terms)
		Identify upper and lower bounds	Surface area of trianglular prisms and compound prisms	calculate the mean from a frequency table	change the subject of a formula (2 steps with the four operations)
		Calculate percentage change	Combining knowledge of angle facts and triangles to calculating angles in polygons	use data to construct grouped frequency table	solve linear inequalities with one variable
		Divide fractions (including mixed numbers)	Calculate the size of angles in Intersecting and parallel lines using a single rule	identify the modal class for grouped data	solve linear equations with variables on both sides of the equation
		Use multipliers to find a percentage of an amount, increase and decrease	Similar shapes using area		
		Worded problems for ratio/proportion (problems involve FDP)	Calculating Speed, distance and time		Plot linear graphs in the form y=mx+c
		Calculations involving Mass, length, area, volume and capacity	problem solving with metric conversions (length/area/volume)		Represent linear inequalities on a graph x>a, x<a, y<a, y>a
			Calculating density and pressure		Problem solving questions involving the nth term
			Use a compass to bisect an angle		Find the coordinates of the midpoint of line (coordinates only)
			Draw an angle including 3 figure bearings		draw and interpret straight line conversion graphs
			Identify and give complete descriptions of reflections and translations		Plot linear graphs in the form y=mx+c
			Enlarge a shape given the (positive integer) scale factor and given the centre		Represent linear inequalities on a graph x>a, x<a, y<a, y>a
			Rotate a shape about a point through a given angle		Problem solving questions involving the nth term
9	4	Index laws for integers (fractional)	Area and perimeter of semicircles	use the OR and the AND rule in probability from worded problems	Index laws for algebraic terms (fractional)
		Problem solving with prime factors, HCF and LCM	worded area and perimeter problems of all 2D shapes (incl. circles), including algebraic problems, and finding shaded regions	Find the probability of an event from a sample space	Expand double brackets
		Solve problems involving standard form (including ordering and performing basic calcultions)	Problem solving with Pythagoras' theorem to find the areas and perimeters of 2D shapes	use the notation n(A) for the number of elements in the set A	Factorise quadratic expressions (co-efficient of a= 1)
		Understand the meaning of surds and simplifying	Trigonometry in two dimensions, finding sides and angles	draw independent tree diagrams	simplify algebraic fractions by factorising (linear terms in numerator or denominator)
		Reverse percentages	Worded volume questions with volumes of all prisms	use set notation for complement, universal, empty and subset.	change the subject of a formula (multiple steps involving all operations, indices, roots, fractions)
		Problem solving with percentage change	Surface area of a cylinder	use Venn diagrams to represent sets	set up and solve simple linear equations from given data
		Compound interest and depreciation	Calculate the size of angles in Intersecting and parallel lines using multiple rules		Solve linear simultaneous equations
		Calculations including time, money and converting currencies	Similar shapes using volume	find the interquartile range from a discrete data set	Interpret linear and non-linear graphs
			problem solving with Speed, distance and time	calculate an estimate for the mean for grouped data	Plot linear graphs in the form ax+by=c
			Convert units of speed	calculate the median from a frequency table	find the gradient of a straight line
			problems solving with density and pressure	construct cumulative frequency diagrams from a table	Find the equation of a straight line, from the graph
			use a compass to find the Perpendicular bisector of a line		Represent linear inequalities on a graph (in the form y</>mx+c)
			Solve bearings and scale problems		Understand what d & a is in an arithmetic sequence
			Enlarge a shape given the (positive fractional) scale factor and given the centre		
			Identify and give complete descriptions of a rotation		
					Understand what d & a is in an arithmetic sequence
10	5	Index laws for integers (negative and fractional)	Area and perimeter sectors	complete a venn diagram with 3 sets	Index laws for integers (negative and fractional)
		Solve problems involving standard form (complex problems)	problems involving Trigonometry or pythagoras to solve perimeter and area problems in two dimensions	calculate probabilities from an independent tree diagrams	Expand triple brackets
		Manipulate surds by performing the 4 operations	Area of a triangle using 1/2absinc	draw dependent tree diagrams	Factorise quadratic expressions (co-efficient of a>1 or difference of two squares)
		Solve problems using upper and lower bounds (basic)	Volume and Surface area of a cone and pyramid	find probabilities from a Venn diagram	simplify algebraic fractions using the four operations and by factorisng (linear terms)
		Solve problems using upper and lower bounds (basic)	Solve bearings problems that involve basic trigonometry	identify the median class interval for grouped data	Changing the subject of the formula (where the subject appears twice)

		Solve complex percentage problems	Enlarge a shape given the (negative) scale factor and given the centre	compare data using averages and interquartile ranges in context	solve linear equations (including simple fractions- where the term is in the numerator)
		Convert recurring decimals into fractions	Identify and give complete descriptions of enlargements	estimate the median & interquartile range from a cumulative frequency diagram	Solve quadratic equations by factorization
					calculate the gradient of a line given two points
					Find the equation of a straight line in the form y=mx+c or ax+by=c from given points
					Identify a region on a graph defined by linear inequalities
					Draw quadratic functions
					Solve simultaneous equations graphically
					Know and use nth term = a + (n – 1)d
11	6	Index laws for integers (negative and fractional problem solving)	Angles of elevation and depression	calculate probabilities from dependent tree diagrams	simplify algebraic fractions (quadratic terms)
		Manipulate surds by expanding and rationalising	Volume and Surface area of spheres	use Venn diagrams to represent sets & the number of elements	Index laws for integers (negative and fractional problem solving)
			Find the areas of shapes using using 1/2absinc	understand sets in algebraic terms, and use subsets	Changing the subject of the formula (within problems)
			Pythagoras' theorem in three dimensions	use sets in practical situations	Direct and inverse proportion
			Intersecting chord properties	construct interpret histograms	Find the output of a function when given an input value
			Angle properties of the circle- simple cases	construct interpret histograms	solve linear equations (including simple fractions- where the term is in the denominator)
			Understand basic vector notation		Solve quadratic equations by using the quadratic formula
			Understand and use vector notation		find the equation of parallel or perpendicular lines to a given line
					Draw graphs of polynomial functions
					Find an estimate for a solution of a polynomial graph (simple)
			Multiply vectors by scalar quantities		Find the sum of arithmetic series (Sn)
11	7	Solving problems with surds	Trigonometry with obtuse angles	find the probability that multiple independent events occur	Solving equations involving indices and changing the base
		Solve problems using upper and lower bounds (sophisticated)	To calculate missing sides and angles using the Sine and cosine rule	use simple conditional probability when combining events	simplify algebraic fractions using the four operations (multiple algebraic terms in numerator or denominator- with quadratics)
			Intersecting secant properties	complete problem solving questions involving histograms	complete the square for a quadratic expression
			Angle properties of the circle- complex cases		use algebra to support and construct proofs
			Modulus (magnitude) of a vector		Find the range of values from a given function
			Add and subtract vectors		Find values to be excluded from a domain
					solve linear algebraic fractions that first involve simplification with the 4 operations
					Solve quadratic equations by completing the square
					form and solve quadratic equations from data in a given context
					Solve quadratic inequalities
					Draw graphs of trigonometric functions
					Find an estimate for a solution of a polynomial graph (difficult)
					differentiate integer powers of x
					Problem solving using the nth term and Sn formula
11	8		Area and perimeter sectors and segments (using trigonometery)	apply probability to complex algebraic problems	Find the composite function fg
			To solve problems involving the use of Sine and cosine rule		Find the inverse function f -1
			Trigonometry in three dimensions		Solve equations involving functions
			Use intersecting chord/secant properties to form and solve equations		Solve simultaneous equations with linear and quadratic equations
			To solve bearings problems involving the use of Sine and cosine rule		Find points of intesection for linear & non linear graphs
			Resultant of two or more vectors		find the gradients of non-linear graphs
			Geometrical vector proofs		Perform graph transformations
					Analyse transformations of functions & write the functions

					Determine stationary points, turning points
					distinguish between maxima and minima by using the graph
					apply calculus to linear kinematics and to other problems
11	9	Grade 9 problems- require a creative use of relevant mathematics to solve an unfamiliar problem that uses a combination of multiple grade 7 and grade 8 topics in a problem solving setting	To use pythagoras and Trigonometry in 3D to solve surface area and volume problems Use vector properties to find a ratio	Grade 9 problems- require a creative use of relevant mathematics to solve an unfamiliar problem that uses a combination of multiple grade 7 and grade 8 topics in a problem solving setting	Grade 9 problems- require a creative use of relevant mathematics to solve an unfamiliar problem that uses a combination of multiple grade 7 and grade 8 topics in a problem solving setting