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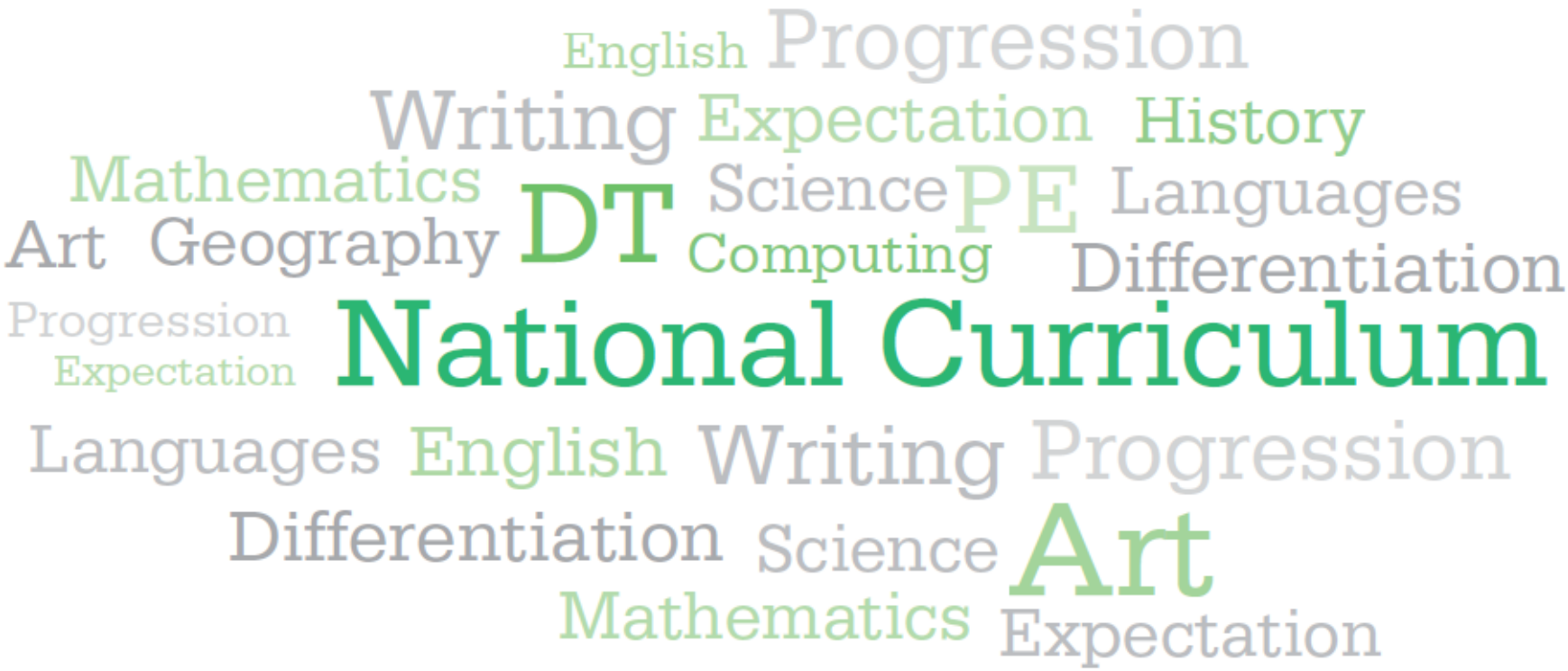
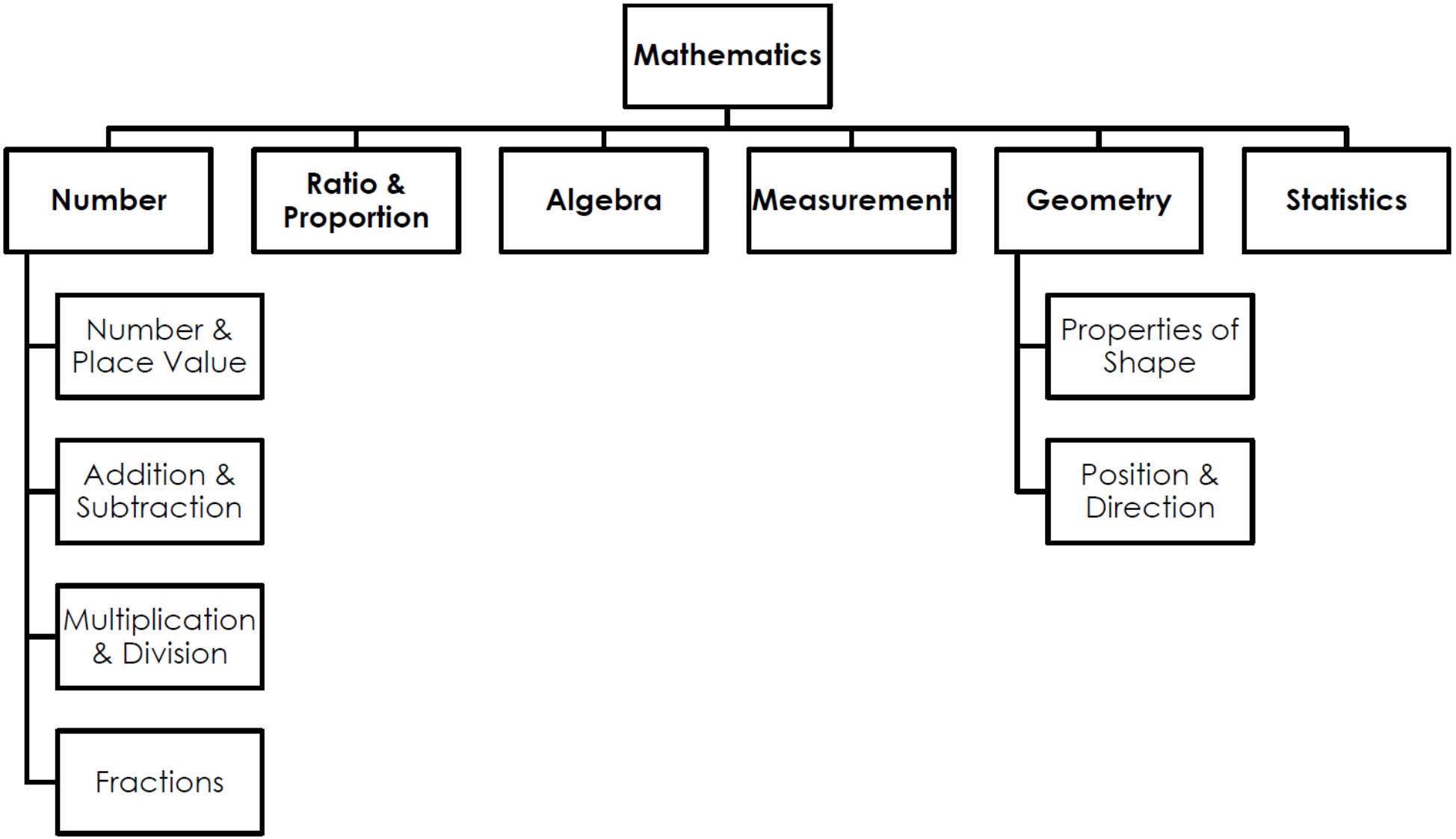
FOCUS EDUCATION



Progression in the new National Curriculum



Number, place value & rounding						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Count reliably with numbers from 1 – 20.	**Count** to and across 100, forward & backwards, beginning with 0 or 1, or from any given number.			**Count** backwards through zero to include negative numbers.	**Count** forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	
					Interpret **negative numbers** in context, count forwards and backwards with positive and negative whole numbers, including through zero.	Use **negative numbers** in context, & calculate intervals across zero.
	Count in **multiples** including 2s, 5s, and 10s.	Count in **steps** of 2, 3 & 5 from 0, and in tens from any number, forward & backward.	Count from 0 in **multiples** of 4, 8, 50 & 100.	Count in **multiples** of 6, 7, 9, 25 & 1000.		
Say which is 1 **more** or 1 **less** than a given number (to 20).	Given a number, identify 1 **more** and 1 **less**.		Find 10 or 100 **more** or **less** than a given number.	Find 1000 **more** or **less** than a given number.		
	Identify and represent numbers using concrete objects and pictorial representations including the number line, & use the language of: equal to, more than, less than (fewer), most, least.	**Identify, represent & estimate** numbers using different representations, incl the number line.	**Identify, represent & estimate** numbers using different representations.	**Identify, represent & estimate** numbers using different representations.		
	Read & write numbers to 100 in numerals. **Read & write** numbers from 1 – 20 in numerals & words	**Read & write** numbers to at least 100 in numerals and in words.	**Read & write** numbers to at least 1000 in numerals & in words.		**Read, write, order & compare** numbers to at least 1 000 000 & determine the value of each digit.	**Read, write, order & compare** numbers up to 10 000 000 & determine the value of each digit.
Order numbers 1 – 20.		**Compare & order** numbers from 0 up to 100; use <, > & = signs.	**Compare & order** numbers up to 1000.	**Compare & order** numbers beyond 1000.		
		Recognise the **place value** of each digit in a 2-digit number.	Recognise the **place value** of each digit in a 3-digit number.	Recognise the **place value** of each digit in a 4-digit number.	Read, write, order & compare numbers to at least 1 000 000 & determine the **value** of each digit.	
				Round any number to the nearest 10, 100 or 1000.	**Round** any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 & 100 000.	**Round** any whole number to a required degree of accuracy.
				Read **Roman numerals** to 100 (I to C) & understand that over time, the numeral system changed to include the concept of zero & place value.	Read **Roman numerals** to 1000 (M) and recognise years written in Roman numerals.	
		Use place value & number facts to **solve problems**.	Solve **number problems & practical problems** involving these ideas.	Solve **number & practical problems** that involve all of the above & with increasingly large positive numbers.	Solve **number & practical problems** that involve all of the above.	Solve **number & practical problems** that involve all of the above.

Addition and subtraction						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
	Read, write & interpret mathematical statements involving + - = signs.					
	Represent and use number bonds & related subtraction facts within 20.	**Recall** & use addition & subtraction facts to 20 fluently, & derive & use related facts up to 100.				
	Solve **one-step problems** that involve addition & subtraction, using concrete objects & pictorial representations, & missing number problems,	Solve **problems** with addition & subtraction: - Using concrete objects & pictorial representations, incl those involving numbers, quantities & measures - Applying their increasing knowledge of mental & written methods		Solve addition & subtraction **two-step problems** in contexts, deciding which operations & methods to use & why.	Solve addition & subtraction **multi-step problems** in contexts, deciding which operations & methods to use & why.	Solve addition & subtraction **multi-step problems** in contexts, deciding which operations & methods to use & why.
Add & subtract two single digit numbers. ELG **Count on or back** to find the answer. ELG	**Add & subtract** 1-digit & 2-digit numbers to 20, including zero.	**Add & subtract** numbers using concrete objects, pictorial representations, & mentally, including: - 2-digit no & ones - 2-digit no & tens - Two 2-digit numbers - Adding three 1-digit numbers	**Add & subtract** numbers mentally, including: - 3-digit no & ones - 3-digit no & tens - 3-digit no & hundreds		**Add & subtract** numbers mentally with increasingly large numbers.	Perform mental calculations, incl with **mixed operations** & large numbers.
			Add & subtract numbers with up to 3 digits, using formal written methods of columnar addition & subtraction.	**Add & subtract numbers with up to 4 digits** using the formal written methods of columnar addition & subtraction where appropriate.	**Add & subtract whole numbers with more than 4 digits** including using formal written methods (columnar addition & subtraction).	Use knowledge of the order of operations to carry out calculations involving **four operations**.
		Show that addition of two numbers can be done in any order (**commutative**) & subtraction of one number from another cannot.				
		Recognise & use the **inverse** relationship between addition & subtraction & use this to check calculations & missing number problems.	**Estimate** the answer to a calculation & use the **inverse** operations to check answers.	**Estimate** & use **inverse** operations to check answers to a calculation.	Use **rounding** to check answers to calculations & determine, in the context of a problem, levels of accuracy.	Use **estimation** to check answers to calculations & determine, in the context of a problem, levels of accuracy.
			Solve problems, incl missing number problems, number facts, place value, & more complex addition & subtraction.			**Solve problems** involving addition, subtraction, multiplication & division.

Multiplication and division						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
		Recall & use multiplication & division facts for the **2, 5, 10 tables**, incl recognising odd & even nos.	Recall & use the **multiplication & division facts for the 3, 4, 8 tables**.	Recall **multiplication & division facts for tables up to 12x12**	Identify all **multiples & factors**, including finding all factor pairs of a number, & common factors of two numbers.	Identify **common factors, common multiples & prime numbers.**
					Know & use the **vocabulary of prime numbers, prime factors & composite** (non-prime) numbers.	
					Establish where a number up to 100 is **prime** & recall prime numbers up to 19.	
		Calculate the **mathematical statements** for multiplication & division within the multiplication tables & write them using x ÷ = signs.				
		Show that multiplication of two numbers can be done in any order (**commutative**) & division of one number by another cannot.		Recognise & use factor pairs & **commutativity** in mental calculations.		
					Multiply & divide numbers **mentally** drawing upon known facts.	Perform **mental** calculations, incl mixed operations & large numbers.
			Write & calculate mathematical statements for multiplication & division **using the multiplication tables** that they know, incl 2-digit x 1-digit, using mental & progressing to formal written methods.	**Multiply** 2-digit & 3-digit numbers by a 1-digit number using formal written layout.	**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.	**Multiply** multi-digit numbers up to 4-digits by a 2-digit whole number using the formal written method of **long multiplication**.
					Divide numbers up to 4-digits by a 1-digit number using the formal written method of short division & interpret remainders appropriately for the context.	**Divide** numbers up to 4-digits by a 2-digit whole number using the formal written method of **long division**, & interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
						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.

				Use place value, known & derived facts to multiply & divide mentally, including **multiplying by 0 and 1**; **dividing by 1**; multiplying three numbers together.	**Multiply & divide** whole numbers & those involving decimals **by 10, 100 and 1000**.	
					Recognise & use **square numbers & cube numbers**, & the notation for squared ^{2} and cubed ^{3}.	
Solve problems, including doubling, halving & sharing. ELG	Solve **one-step problems** involving multiplication & division, calculating the answer using concrete objects, pictorial representations & arrays with the support of the teacher.	Solve **problems** involving multiplication & division, using materials, arrays, repeated addition, mental methods, & multiplication & division facts, incl problems in context.	**Solve problems**, incl missing number problems, involving multiplication & division, incl integer scaling problems & correspondence problems in which n objects are connected to m objects.	**Solve problems** involving multiplying and adding, including the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems & harder multiplication problems such as n objects are connected to m objects.	**Solve problems** involving addition, subtractions, multiplication & division & a combination of these, incl understanding the meaning of the equals sign.	Use knowledge of the order of operations to carry out calculations involving **four operations**.
					Solve problems involving multiplication & division, including scaling by simple fractions & problems involving simple rates.	**Solve problems** involving addition, subtraction, multiplication & division.
					Solve problems involving multiplication & division including using their knowledge of factors & multiples, squares and cubes.	

Fractions, decimals and percentages						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
						Associate a fraction with division & calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8).
Solve problems, including **doubling, halving & sharing**. ELG	Recognise, find & name a **half** as one of two equal parts of an object, shape or quantity. Recognise, find & name a **quarter** as one of four equal parts of an object, shape or quantity.	Recognise, find, name & write fractions **1/3, 1/4, 2/4,** and **3/4** or a length, shape, set of objects or quantity.		Recognise & show, using diagrams, families of common **equivalent fractions**. Recognise & write **decimal equivalents** on any number of tenths or hundredths. Recognise & write **decimal equivalents** to ¼, ½, ¾.	Identify, name & write **equivalent fractions** of a given fraction, represented visually, incl tenths & hundredths. **Read & write decimal numbers** as fractions (e.g. 0.71 = 71/100).	Identify the **value of each digit to three decimal places** and multiply & divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
				Find the effect of dividing a 1-digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths.		
		Write simple fractions, e.g. ½ or 6 =3 and recognise the **equivalence** of 2/4 & 1/2.	**Count up & down** in tenths; recognise that tenths arise from dividing an object into 10 equal parts & in dividing 1-digit numbers or quantities by 10.	**Count up & down** in hundredths; recognise that hundredths arise when dividing an object by a hundred & dividing tenths by ten.	**Recognise & use thousandths** & relate then to tenths, hundredths & decimal equivalents.	
					Recognise mixed numbers & improper fractions & convert from one form to the other & write mathematical statements.	
			Compare & order unit fractions, & fractions with the same denominators.		**Compare & order** fractions whose denominators are all multiples of the same number.	**Compare & order fractions**, including fractions >1. Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
			Recognise, find & write fractions or a discrete set of objects: unit fractions & non-unit fractions with small denominators			
			Recognise & use fractions as numbers: unit fractions & non-unit fractions with small denominators.			
			Recognise & show, using diagrams, equivalent fractions with small denominators.			

			Add & subtract fractions with the same denominator within one whole (e.g. 5/7+1/7=6/7)	**Add & subtract fractions** with the same denominator.	**Add & subtract fractions** with the same denominator & multiples of the same number.	**Add & subtract fractions** with different denominators & mixed numbers, using the concept of equivalent fractions.
					Multiply proper fractions & mixed numbers by whole numbers, supported by materials & diagrams.	**Multiply** simple pairs of proper fractions, writing the answer in its simplest form (e.g. ¼ x ½ = 1/8)
						Multiply 1-digit numbers with up to two decimal places by whole numbers.
						Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6). Use written division methods in cases where the answer has up to two decimal places.
				Round decimals with one decimal place to the nearest whole number.	**Round decimals** with two decimal places to the nearest whole number and to one decimal place.	
				Compare numbers with the same number of decimal places up to **two decimal places**.	Read, write, order and **compare numbers** with up to **three decimal places**.	
					Recognise the **per cent symbol** (%) & understand that per cent relates to 'number or parts per hundred', and write percentages as a fraction with denominator hundred, and as a decimal fraction.	
						Recall & use **equivalences** between simple fractions, decimals & percentages, including in different contexts.
					Solve problems which require knowing **percentage & decimal equivalents** of ½, ¼, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25.	Solve problems involving the **calculation of percentages** of whole numbers or measures such as 15% of 360 and the use of percentages for comparison.*
			Solve problems that involve all of the above.	**Solve problems** involving increasingly harder fractions to calculate quantities, & fractions to divide quantities, including non-unit fractions where the answer is a whole number. Solve simple measure & money problems involving fractions & decimals to two decimal places.	**Solve problems** involving number up to three decimal places.	**Solve problems** which require answers to be rounded to specified degrees of accuracy.

* Extract from proportion section of NC

Ratio and proportion						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
						Solve problems involving the **relative sizes** of two quantities where missing values can be found by using integer multiplication & division facts.
						Solve problems involving the **calculation of percentages** of whole numbers or measures 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 & grouping** using knowledge of fractions & multiples.

Algebra						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
						Express missing number problems algebraically.
						Use simple formulae
						Generate & describe linear number sequences.
						Find pairs of numbers that satisfy an equation with two unknowns.
						Enumerate all possibilities of combinations of two variables.

Measurement						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
GENERAL Use everyday language to talk about size, weight, capacity, position, distance, time & money to compare quantities and objects and solve problems. ELG	Compare, describe & solve practical problems for: - Lengths & heights - Mass/weight - Capacity & volume - Time Measure & begin to record the following: - Length & heights - Mass/weight - Capacity & volume - Time (hrs, mins, secs)	Choose and use appropriate standard units to estimate and measure: - length/height in any direction (m/cm) - mass (kg/g) - temperature (°C) - capacity (l/ml) to the nearest appropriate unit, using rulers, scales, thermometers & measuring vessels. Compare & order lengths, mass, volume/capacity & record the results using >, < and =.	Measure, compare, add & subtract: - lengths (m/cm/mm) - mass (kg/g) - volume/capacity (l/ml)	Convert between different units of measure (e.g. km to m; hr to min) Estimate, compare & calculate different measures.	Convert between different units of metric measure (e.g. km/m; cm/m; cm/mm; g/kg; l/ml). Understand & use approximate equivalences between metric units & common imperial units such as inches, pounds & pints. Use all four operations to solve problems involving measure using decimal notation, including scaling. Estimate volume (e.g. using 1 cm^3 blocks to build cubes & cuboids) & capacity (e.g. using water).	Solve problems involving the calculation & conversion of units of measure, using decimal notation to three decimal places where appropriate. Use, read, write & convert between standard units, converting measurements of length, mass, volume & time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to three decimal places. Calculate, estimate & compare volume of cubes & cuboids using standard units, incl cm^3 and m^3, and extending to other units such as mm^3 and km^3. Convert between miles & km. Recognise when it is possible to use the formulae for area & volume of shapes.
PERIMETER			Measure the **perimeter** of simple 2D shapes.	Measure & calculate the **perimeter** of a rectilinear figure (incl squares) in cm & m.	Measure & calculate the **perimeter** of composite rectilinear shapes in cm & m.	Recognise that shapes with the same areas can have different **perimeters** & vice versa.
AREA				Find the **area** of rectilinear shapes by counting squares.	Calculate & compare the **area** of rectangles (including squares, & including using standard units, square centimetres (cm^2) and square metres (m^2) & estimate the area of irregular shapes.	Calculate the **area** of parallelograms & triangles. Recognise when it is possible to use the formulae for **area** & volume of shapes.

MONEY	Recognise & know the value of different **denominations** or coins & notes.	Recognise & use symbols for **pounds** (£) and **pence** (p); combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition & subtraction of money of the same unit, incl giving change.	**Add & subtract amounts** of money to give change, using both £ and p in practical contexts.	Estimate, compare & **calculate** different measures, including money in pounds & pence.		
TIME	Sequence events in **chronological order** using language (e.g. before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening). Recognise & use **language** relating to dates, incl days of the week, weeks, months, years. **Tell the time to the hour & half past the hour** & draw the hands on a clock face to show these times.	Compare & **sequence** intervals of time. Tell & write the time to **five minutes**, incl **quarter past/to** the hour & draw the hands on a clock face to show these times.	Tell & write the time from an analogue clock, incl using **Roman numerals** from I to XII, & **12-hour & 24-hour** clocks. Estimate & read **time with increasing accuracy to the nearest minute**; record & compare time in terms of secs, mins, hrs; use vocabulary such as o'clock, am/pm, morning, afternoon, noon & midnight. Know the numbers of **seconds in a minute** & the number of **days each month, year & leap year**. **Compare durations** of events, for example to calculate time taken by particular events or tasks.	**Read, write & convert time** between analogue & digital 12- & 24-hour clocks. Solve problems involving **converting** from hours to minutes; minutes to seconds; years to months; weeks to days.	Solve problems involving **converting** between units of time.	

Geometry: properties of shapes						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Explore the characteristics of everyday objects and shapes and use mathematical language to describe them. ELG	Recognise & name **common 2D & 3D shapes**, including: - 2D, e.g. rectangles (including squares) circles, triangles - 3D. e.g. cuboids (including cubes), pyramids, spheres.	Identify & describe the **properties of 2D shapes**, incl the number of sides & symmetry in a vertical line. Identify & describe the **properties of 3D shapes**, incl the number of edges, vertices & faces. Identify **2D shapes on the surface of 3D shapes**. **Compare & sort** common 2D & 3D shapes & everyday objects.	**Draw 2D shapes** & make 3D shapes using modelling materials; recognise 3D shapes in different orientations; & describe them.	**Compare & classify** geometric shapes, incl quadrilaterals and triangles, based on their properties & sizes. Identify lines of **symmetry** in 2D shapes presented in different orientations. Complete a simple **symmetric figure** with respect to a specific line of symmetry.	**Identify 3D shapes**, including cubes & cuboids, from 2D representations. Use the **properties of rectangles to** deduce related facts & find missing lengths & angles. Distinguish between **regular & irregular polygons** based on reasoning about equal sides & angles.	**Draw 2D shapes** using given dimensions & angles. **Recognise, describe & build simple 3D shapes**, incl making nets. **Compare & classify** geometric shapes based on their properties & sizes & find unknown angles in any triangles, quadrilaterals, & regular polygons.
			Recognise **angles** are 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 & four a complete turn; identify whether angles are greater than or less than a right angle.	Identify acute & obtuse **angles** & compare & order angles up to two right angles by size.	Know **angles** are measures in degrees; estimate & compare acute, obtuse & reflex angles. Identify: - Angles at a point on a straight line & ½ a turn (total 180°) - Angles at a point & one whole turn (total 360°) - Other multiples of 90° Draw given angles, & measure them in degrees.	Recognise **angles** where they meet at a point, are on a straight line, or are vertically opposite, & find missing angles.
			Identify **horizontal and vertical lines and pairs of perpendicular & parallel** lines.			
						Illustrate & name parts of **circles**, including radius, diameter & circumference & know that the diameter is twice the radius.

Geometry: position, direction, motion						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Recognise, create & describe patterns. ELG		**Order & arrange** combinations of mathematical objects in patterns and sequences.				
	Describe **position, directions & movement**, including half, quarter and three-quarter turns.	Use mathematical vocabulary to describe **position, direction & movement**, including movement in a straight line and distinguishing between rotation as a turn & in terms of right angles for quarter, half and three-quarter turns (clockwise & anti-clockwise).				
				Describe positions on a 2D grid as **coordinates in the first quadrant**.		Describe positions on the full coordinate grid (**all four quadrants**).
				Describe movements between positions as **translations** of a given unit to the left/right and up/down.	Identify, describe & represent the position of a shape following a **reflection or translation**, using the appropriate language, & know that the shape has not changed.	**Draw & translate simple shapes** on the coordinate plane, & reflect them in the axes.
				Plot specified points & draw sides to complete a given polygon.		

Statistics						
Rec/ELG	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
		Interpret & construct simple: - **pictograms** - **tally charts** - **block diagrams** - **simple tables**	Interpret & present data using: - **bar charts** - **pictograms** - **tables**	Interpret & present discrete data using appropriate graphical methods, incl: - **bar charts** - **time graphs**	Complete, read & interpret information in: - **tables, incl timetables**	Interpret & construct: - **pie charts** - **line graphs** and use to solve problems.
		Ask & answer simple questions by counting the number of objects in each category & sorting the categories by quantity. **Ask & answer** questions about totalling and compare categorical data.	Solve one**-step & two-step questions** such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts & pictograms & tables.	Solve **comparison, sum & difference problems** using information presented in bar charts, pictograms, tables & other graphs.	Solve **comparison, sum & difference problems** using information presented in a line graph.	Calculate & interpret the **mean** as an average.