Mathematics - Progression Map

	2YO/ Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value with Reasoning								
VOCABULARY	Number Count up Down	Number Count One – twenty Foward Backwards Before After Twos	Number One, two, three… twenty None Count, on, up, up to, from, down Before, After More, Less Many, Few Fewer, fewest Least Smallest Greater Lesser Equal to The same as Odd, Even Pair Units, Ones Tens Ten more/less Digit Numeral Figure Compare Order/a different order Size Value Between Half way between Above, Below	Numbers to 100 Ones, tens, hundreds Partition/ recombine Hundred more/less	Numbers to one thousand	Tenths, hundredths Decimal (places) Round (to nearest) Thousand more/ less than Negative integers Count through zero Roman numerals (I to C)	Powers of 10	Numbers to ten million
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Counting	**<u>0-3</u>** Combine objects like stacking blocks and cups. Put	Count objects, actions and sounds. Link the number	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or	Count from 0 in multiples of 4, 8, 50 and 100. Find 10 or 100 more or less	Count backwards through zero to include negative numbers.	Interpret negative numbers in context, count forwards and backwards with	Use negative numbers in context and calculate intervals across zero.

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	objects inside others and take them out again. Take part in finger rhymes with numbers. React to changes of amount in a group of up to three items. Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. Count in everyday contexts, sometimes skipping numbers – '1-2-3-5' **3-4** Recite numbers past 5. Say one number for each item in order: 1,2,3,4,5.	symbol (numeral) with its cardinal number value. Count beyond ten. Understand the 'one more than/one less than' relationship between consecutive numbers. **ELG** Verbally count beyond 20, recognising the pattern of the counting system.	given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less.	backward.	than a given number.	Count in multiples of 6, 7, 9, 25 and 1000. Find 1000 more or less than a given number.	positive and negative whole numbers, including through zero. Count forwards or backwards in steps of powers of 10 for any given number up to 1000 000.	

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	Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). Show 'finger numbers' up to 5. Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.							
Comparing Numbers	**<u>0-3</u>** React to changes of amount in a group of up to three items. Compare amounts, saying 'lots', 'more' or 'same'. **<u>3-4</u>** Compare quantities using language: 'more than', 'fewer than'.	Compare numbers. **<u>ELG</u>** Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	Use the language of: equal to, more than, less than (fewer), most, least.	Compare and order numbers from 0 up to 100; use and = signs.	Compare and order numbers up to 1000.	Order and compare numbers beyond 1000. Compare numbers with the same number of decimal places up to two decimal places	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit *(appears also in Reading and Writing Numbers)*	Read, write, order and compare numbers up to 10 000000 and determine the value of each digit *(appears also in Reading and Writing Numbers)*

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Identifying, representing and estimating numbers	**3-4** Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). Show 'finger numbers' up to 5.	Subitise. Explore the composition of numbers to 10. **ELG** Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5.	Identify and represent numbers using objects and pictorial representations including the number line.	Identify, represent and estimate numbers using different representations, including the number line.	Identify, represent and estimate numbers using different representations.	Identify, represent and estimate numbers using different representations.		
Reading and Writing Numbers	**3-4** Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. Experiment with their own symbols and marks as well as numerals.	Link the number symbol (numeral) with its cardinal number value.	Read and write numbers from 1 to 20 in numerals and words.	Read and write numbers to at least 100 in numerals and in words.	Read and write numbers up to 1000 in numerals and in words. Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks *(copied from Measurement)*	**R**ead 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.	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. *(appears also in Comparing Numbers)* Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. *(appears also in Understanding Place Value)*
Understanding Place				Recognise the place value of	Recognise the place value of	Recognise the place value of	Read, write, order and	Read, write, order and compare

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Value				each digit in a two-digit number. (tens, ones)	each digit in a three-digit number. (hundreds, tens, ones)	each digit in a four-digit number. (thousands, hundreds, tens, and ones) Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths *(copied from Fractions)*	compare numbers to at least 1 000 000 and determine the value of each digit. *(appears also in Reading and Writing Numbers)* Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents *(copied from Fractions)*	numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three *decimal places (copied from Fractions)*
Rounding						Round any number to the nearest 10, 100 or 1 000. Round decimals with one decimal place to the nearest whole number. *(copied from Fractions)*	Round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000. Round decimals with two decimal places to the nearest whole number and to one decimal place. *(copied from Fractions)*	Round any whole number to a required degree of accuracy *Solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)*
Problem Solving	**3-4** Solve real world mathematical problems with			Use place value and number facts to solve problems.	Solve number problems and practical problems involving these	Solve number and practical problems that involve all of the above and	Solve number problems and practical problems that involve all of	Solve number and practical problems that involve all of the above.

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	numbers up to 5.				ideas.	with increasingly large positive numbers.	the above.	
Addition and Subtraction with Reasoning								
VOCABULARY		Add Takeaway More Less Altogether Left Total Half Double Equals	Number bonds Number line Add More Plus Make Sum Total Altogether First, Then, Now Inverse Double Near double Half, halve Equals The same as Difference between How many more to make? How many more is…than…? How much more is…? Subtract Take away Minus How many fewer is…than…? How much less is…? Part, Whole	Number line, jumps Partitioning Near double Inverse	Column addition Column subtraction Regroup Expanded Inverse		Efficient written method	Order of Operations
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Number Bonds		Automatically recall number bonds for numbers 0–5 and some to	Represent and use number bonds and related subtraction facts	Recall and use addition and subtraction facts to 20 fluently, and				

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		10. **ELG** Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	within 20.	derive and use related facts up to 100.				
Mental Calculation		Understand the 'one more than/one less than' relationship between consecutive numbers. **ELG** Subitise (recognise quantities without counting) up to 5. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction	Add and subtract one digit and two-digit numbers to 20, including zero. Eead, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. *(appears also in Written Methods)*	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: *a two-digit number and ones *a two-digit number and tens *two two-digit numbers *adding three one-digit numbers Show that addition of two numbers can be done in any order (commutative)	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 mentally with increasingly large numbers.	Perform mental calculations, including with mixed operations and large numbers Use their knowledge of the order of operations to carry out calculations involving the four operations.

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		facts) and some number bonds to 10, including double facts.		and subtraction of one number from another cannot.				
Written Methods			Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. *(appears also in Mental Calculation)*		Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	Add and subtract whole numbers with more than 4 digits, including using formal written methods. *(columnar addition and subtraction)*	
Inverse Operations, Estimating and Checking Answers				Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Estimate the answer to a calculation and use inverse operations to check answers.	Estimate and use inverse operations to check answers to a calculation.	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Problem Solving			Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ∗ - 9	Solve problems with addition and subtraction: *using concrete objects and pictorial representations, including those involving numbers, quantities and measures: *applying their increasing knowledge of mental and written methods	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	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.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

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				Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change *(copied from Measurement)*				
Multiplication and Division with Reasoning								
VOCABULARY			Odd Even Count in twos, threes, fives How many times? Lots of Groups of Once, twice, three times, five times Multiple of Times Multiply Multiply by Repeated addition Array, Row, Column Double Halve Share Share equally Group in pairs, three etc Equal groups of Divide Divided by Left Left over		Product Multiples of four, eight, fifty and one hundred Scale up	Multiplication facts (up to 12x12) Division facts Inverse Derive Factor	Factor pairs Composite numbers Prime number Prime Factor Square Number Cubed Number Formal Written Method	Order of Operations, Common Factors, Common Multiples

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	2YO/ Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division Facts		Automatically recall (without reference to rhymes, counting or other aids) […] double facts. **ELG** Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	Count in multiples of twos, fives and tens. *(copied from Number and Place Value)*	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. *(copied from Number and Place Value)* *R*ecall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	Count from 0 in multiples of 4, 8, 50 and 100. *(copied from Number and Place Value)* *R*ecall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	*Count in multiples of 6, 7, 9, 25 and 1 000. (copied from Number and Place Value)* *R*ecall multiplication and division facts for multiplication tables up to 12 × 12.	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. *(copied from Number and Place Value)*	
Mental Calculation				Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. *(appears also in Written Methods)*	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. Recognise and use factor pairs and commutativity in mental calculations. (appears also in Properties of	Multiply and divide numbers mentally drawing upon known facts. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	Perform mental calculations, including with mixed operations and large numbers Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions)

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						Numbers)		
Written Calculation				calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods)	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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 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 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 short division where appropriate for the context 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

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								use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals)
Properties of Numbers: Multiples, Factors, Primes, Square and Cube Numbers						recognise and use factor pairs and commutativity in mental calculations *(repeated)*	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)	identify common factors, common multiples and prime numbers *use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions)* calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and

								extending to other units such as mm3 and km3 (copied from Measures).
Order of Operations								use their knowledge of the order of operations to carry out calculations involving the four operations.
Inverse Operations, Estimating and Checking Answers					*estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)*	*estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)*		*use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy*
Problem Solving			solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving addition, subtraction,	solve problems involving addition, subtraction, multiplication and division

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							multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	*solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)*
Fractions (including Decimals and Percentages) Reasoning								
VOCABULARY			Whole Equal parts, four equal parts One half, two halves A quarter, four quarters	Three quarters, one third, a third Same Equal Equivalence, equivalent	Numerator Denominator Unit fraction Non-unit fraction Compare and order Tenths	Equivalent decimals Equivalent fractions	Proper Fractions Improper Fractions Mixed Numbers Percentage Half, Quarter, Fifth, Two Fifths, Four Fifths. Ratio Proportion	Degree of Accuracy, Simplify
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Counting in Fractional Steps				Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on	Count up and down in tenths.	Count up and down in hundredths.		

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				the number line (Non Statutory Guidance)				
Recognising Fractions			Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity.	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. *(appears also in Equivalence)*	
Comparing Fractions					Compare and order unit fractions, and fractions with the same denominators.		Compare and order fractions whose denominators are all multiples of the same number.	Compare and order fractions, including fractions >1.
Comparing Decimals						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.	Identify the value of each digit in numbers given to three decimal places.

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Rounding including Decimals						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.	Solve problems which require answers to be rounded to specified degrees of accuracy
Equivalence (including Fractions, Decimals and Percentages)				Write simple fractions e.g. ½ of 6 = 3 and recognise the equivalence of 2/4 and ½ .	Recognise and show, using diagrams, equivalent fractions with small denominators.	Recognise and show, using diagrams, families of common equivalent fractions. Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to ¼ ; ½ ; ¾ .	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Read and write decimal numbers as fractions (e.g. 0.71 = 71 / 100). Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) ecall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

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							percentages as a fraction with denominator 100 as a decimal fraction.	
Addition and subtraction of Fractions					Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7).	Add and subtract fractions with the same denominator.	Add and subtract fractions with the same denominator and multiples of the same number. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5).	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
Multiplication and Division of Fractions							Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. ¼ × ½ = 1/8). Multiply one-digit numbers with up to two decimal places by whole numbers Divide proper fractions by whole numbers

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								(e.g. 1/3 ÷ 2 = 1/6).
Multiplication and Division of Decimals						Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.		Multiply one-digit numbers with up to two decimal places by whole numbers Multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) Use written division methods in cases where the answer has up to two decimal places.
Problem					Solve problems	Solve problems	Solve problems	

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Solving					that involve all of the above.	involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number Solve simple measure and money problems involving fractions and decimals to two decimal places.	involving numbers up to three decimal places. Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25.	
Ratio and Proportion Reasoning **(Statements only appear in Y6 but should be connected to previous learning, particularly fractions and multiplication and division)**								
VOCABULARY								
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
								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

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								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.
Algebra with Reasoning								
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
VOCABULARY								Linear Number Sequence Substitute Variables Symbol Known Values
Equations			Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ∗ - 9. *(copied from Addition and Subtraction)*	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. *(copied from Addition and Subtraction)*	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. *(copied from Addition and Subtraction)* Solve problems,		Use the properties of rectangles to deduce related facts and find missing lengths and angles. *(copied from Geometry: Properties of Shapes)*	Express missing number problems algebraically. Find pairs of numbers that satisfy number sentences involving two unknowns. Enumerate all possibilities of combinations of two variables

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			Represent and use number bonds and related subtraction facts within 20. *(copied from Addition and Subtraction)*	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. *(copied from Addition and Subtraction)*	including missing number problems, involving multiplication and division, including integer scaling. *(copied from Multiplication and Division)*			
Formulae						Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. *(Copied from NSG measurement)*		Use simple formulae. Recognise when it is possible to use **formulae** for area and volume of shapes *(copied from Measurement)*
Sequences			Sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. *(copied from Measurement)*	Compare and sequence intervals of time. *(copied from Measurement)* Order and arrange combinations of mathematical objects in patterns. *(copied from Geometry: position and direction)*				Generate and describe linear number sequences.
Measurement with Reasoning								
VOCABULARY	Cup Fill Pour Empty Big small Heavy light	Full Empty Weigh Heavy Light Scales	Full, half full, empty Holds Container Weigh, weighs, balances	Quarter past/to m/km g/kg ml/l Temperature Degrees	Leap year Twelve hour clock Twenty-four hour clock Roman	Convert	Volume Imperial Units Metric Units	

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	Tall short Today	Up Down Coin Money Tall Short Order Later Now Today Tomorrow Yesterday Time Clock Before After	Heavy, heavier, heaviest, light, lighter, lightest Scales Time Days of the week: Monday, Tuesday etc. Seasons: spring, summer, autumn, winter Day, week, month, year, weekend Birthday, holiday Morning, afternoon, evening Today, yesterday, tomorrow Before, after Next, last Now, soon, early, late Quick, quicker, quickest, quickly, fast, fastest, slow, slower, slowest, slowly Old, older, oldest, new, newest Takes longer, takes less time Hour O'clock Half past Clock, hands, watch Always, never, often, sometimes, usually First, second, third Estimate		numerals I to XIII			

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			Close to, the same as, just over, just under Too many, too few, not enough, enough Length, width, height, depth Long, longer, longest, short, shorter, shortest, tall, taller, tallest, high, higher, highest Low, wide, narrow, deep, shallow, thick, thin Far, near, close Metre, ruler, metre stick Money Coin Penny, pence, pound Price, cost Buy, sell Spend, spent Pay Change Costs more/less Cheaper Costs the same How much? How many? Total					
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Comparing and Estimating	**<u>0-3</u>** Compare sizes, weights etc. using gesture and language 'bigger/little/s	Compare length, weight and capacity.	Compare, describe and solve practical problems for: *lengths and heights [e.g. long/short,	Compare and order lengths, mass, volume/capacity and record the results using >, < and	**C**ompare durations of events, for example to calculate the time taken by particular	Estimate, compare and calculate different measures, including money in	Calculate and compare the area of squares and rectangles including using standard units, square	Calculate, estimate and compare volume of cubes and cuboids using standard units, including

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	maller', 'high/low', 'tall', 'heavy'. **3-4** Make comparisons between objects relating to size, length, weight and capacity.		longer/shorter, tall/short, double/ half] *mass/weight [e.g. heavy/light, heavier than, lighter than] *capacity and volume [e.g. full/ empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later] Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].	=. Compare and sequence intervals of time.	events or tasks. Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time).	pounds and pence. *(also included in Measuring)*	centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes (also included in measuring). Estimate volume (e.g. using 1cm3 blocks to build cubes and cuboids) and capacity (e.g. using water).	centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3.
Measuring and Calculating			Measure and begin to record the following: ***lengths and heights** ***mass/weight** ***capacity and volume** ***time** (hours, minutes, seconds) Recognise and know the value of different denominations of **coins and**	Choose and use appropriate standard units to estimate and measure **length/height** in any direction (m/cm); **mass** (kg/g); **temperature** (°C); **capacity** (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers	Measure, compare, add and subtract: **lengths** (m/cm/ mm); **mass** (kg/ g); **volume/capaci ty** (l/ml). Measure the **perimeter** of simple 2-D shapes. Add and subtract amounts of	Estimate, compare and calculate **different measures**, **including money in pounds and pence.** *(appears also in Comparing)* Measure and calculate the **perimeter** of a rectilinear figure (including	Use all four operations to solve problems involving measure (e.g. **length, mass, volume, money**) using decimal notation including scaling. Measure and calculate the **perimeter** of composite	Solve problems involving the calculation and conversion of **units of measure,** using decimal notation up to three decimal places where appropriate. (appears also in Converting) Recognise that shapes with the same areas can

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			notes.	and measuring vessels. Recognise and 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 and subtraction of money of the same unit, including giving change.	**money** to give change, using both £ and p in practical contexts.	squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares.	rectilinear shapes in centimetres and metres. Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (copied from Multiplication and Division).	have different **perimeters** and vice versa. Calculate the area of parallelograms and triangles Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [e.g. mm3 and km3]. Recognise when it is possible to use formulae for area and volume of shapes.
Telling the Time	**3-4** Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'		Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Recognise and use language relating to dates, including days of the week, weeks, months and	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. Know the number of minutes in an	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	Read, write and convert time between analogue and digital 12 and 24-hour clocks. *(appears also in Converting)* Solve problems involving converting from hours to minutes;	Solve problems involving converting between units of time.	

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			years.	hour and the number of hours in a day. *(appears also in Converting)*	nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. *(appears also in Comparing and Estimating)*	minutes to seconds; years to months; weeks to days. *(appears also in Converting)*		
Converting				Know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)	Know the number of seconds in a minute and the number of days in each month, year and leap year.	Convert between different units of measure. (e.g. kilometre to metre; hour to minute) Read, write and convert time between analogue and digital 12 and 24-hour clocks. (appears also in Converting) Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. *(appears also in Telling the Time)*	Convert between different units of metric measure. (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) Solve problems involving converting between units of time. Understand and use equivalences between metric units and common imperial units such as inches, pounds and	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. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. (appears also in Measuring and Calculating)

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							pints.	Convert between miles and kilometres.
Geometry: Properties of Shapes with Reasoning								
Vocabulary	Round Shape Big Small Square Triangle Circle Rectangle 2d	3D Cube Pyramid Sphere Cone Cuboid Make Build Draw Pattern Repeat Colour Flat Curved Pointy	Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, round Hollow, solid Corner (point, pointed) Face, side, edge Make, build, draw Can it roll?	Size Bigger, larger, smaller Symmetry Symmetrical Line of symmetry Fold Match Mirror line Reflection Pattern, repeating pattern	Horizontal Vertical Perpendicular Parallel	Quadrilaterals Triangles Right angle Acute angle Obtuse angle	Regular and Irregular Polygons	Vertically Opposite (angles) Circumference Radius Diameter
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Identifying Shapes and their Properties	**<u>0-3</u>** Climb and squeeze themselves into different types of spaces. Notice patterns and arrange things in patterns. **<u>3-4</u>** Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and	Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.	Recognise and name common 2-D and 3-D shapes, including: *2-D shapes [e.g. rectangles (including squares), circles and triangles] *3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Identify 2-D shapes on the		Identify lines of symmetry in 2-D shapes presented in different orientations.	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	Recognise, describe and build simple 3-D shapes, including making nets. *(appears also in Drawing and Constructing)* Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

	cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern.			radius surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].				
Drawing and Constructing	**0-3** Build with a range of resources. Complete inset puzzles. Notice	Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as			Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different	Complete a simple symmetric figure with respect to a specific line of symmetry.	Draw given angles, and measure them in degrees (o).	Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including

	patterns and arrange things in patterns. **<u>3-4</u>** Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc. Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a	numbers can.			orientations and describe them.			making nets. *(appears also in identifying shapes and their properties)*

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	repeating pattern.							
Comparing and Classifying	**0-3** Compare sizes, weights etc. using gesture and language - 'bigger/little/smaller', 'high/low', 'tall', 'heavy'.	Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.		Compare and sort common 2-D and 3-D shapes and everyday objects.		Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.
Angles					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 angles are greater than or less than a right angle. Identify horizontal and vertical lines and pairs of	Identify acute and obtuse angles and compare and order angles up to two right angles by size.	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles identify: *angles at a point and one whole turn (total 360o) *angles at a point on a straight line and ½ a turn (total 180o) *other multiples of 90o	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

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					perpendicular and parallel lines.			
Geometry: Position and Direction with Reasoning								
VOCABULARY	Next to Behind Infront of Under On Above	Between Opposite Left Right Up Down	Position Over, under, underneath, above, below, top, bottom, side On, in, outside, inside Around, in front, behind Front, back Before, after Beside, next to, opposite Apart Between, middle, edge, centre Corner Direction Journey Left, right, up, down, forwards, backwards, sideways Across Close, far, near Along, through To, from, towards, away from Movement Slide, roll, turn, whole turn, half turn, Stretch, bend	Rotation Clockwise, anticlockwise Straight line Ninety-degree turn Right angle	Greater/less than ninety degrees Orientation	Coordinates Translation Quadrant x-axis, y-axis Perimeter Area	Reflex Angle Dimensions	Four Quadrants (for coordinates)
	2YO/ Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Position, Direction and	**3-4** Understand position through words	Select, rotate and manipulate shapes to	Describe position, direction and movement, including half,	Use mathematical vocabulary to describe		Describe positions on a 2-D grid as coordinates in	Identify, describe and represent the position of a	Describe positions on the full coordinate grid (all four

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Movement	alone – for example, “The bag is under the table,” – with no pointing. Describe a familiar route. Discuss routes and locations, using words like ‘in front of’ and ‘behind’.	develop spatial reasoning skills.	quarter and three-quarter turns.	position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).		the first quadrant. Describe movements between positions as translations of a given unit to the left/right and up/down. Plot specified points and draw sides to complete a given polygon.	shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Pattern	**0-3** Notice patterns and arrange things in patterns. **3-4** Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like ‘pointy’, ‘spotty’, ‘blobs’, etc. Extend and create ABAB patterns – stick, leaf, stick, leaf.	Continue, copy and create repeating patterns.		Order and arrange combinations of mathematical objects in patterns and sequences.				

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	Notice and correct an error in a repeating pattern.							
Statistics with Reasoning								
Vocabulary				Count, tally, sort, record Vote Graph, chart Bar chart Pictogram Represent Group, set, list, table Label, title Most popular, most common, least common	Chart Bar chart Frequency table Carroll diagram Venn diagram Axis Axes Diagram	Continuous data Line graph		Mean Pie Chart Construct
Interpreting, Constructing and Presenting data				Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing	Interpret and present data using bar charts, pictograms and tables.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Complete, read and interpret information in tables, including timetables.	Interpret and construct pie charts and line graphs and use these to solve problems.

				categorical data.				
Solving Problems					Solve one-step and twostep questions [e.g. ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables.	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Solve comparison, sum and difference problems using information presented in a line graph	Calculate and interpret the mean as an average.

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