Skills overview Maths

Overview										
Number and Place value	Counting			Comparing numbers			Identifying, representing and estimating numbers			
Addition and Subtraction	Number bonds		Mental calculations		Written method		Inverse operations, estimating and checking answers		Problem solving	
Multiplication and Division	Identify and count multiplication and division facts		Mental calculation	Written Calculation	Identify properties of numbers; multiples, factors, prime, square and cube numbers		Order of operations	Inverse operations, estimating and checking answers		Problem solving
Fractions	Counting in Fraction steps	Recognising fractions	Written Calculation	Comparing fractions	Comparing decimals	Rounding including decimals	Equivalence (including fractions, decimals and percentages)	Use addition and subtractions of fractions	Multiply and divide fractions Multiply and divide decimals	Problem solving
Ratio	Counting in Fraction steps									
Geometry - properties of shapes	Identifying shapes and their properties			Drawing and constructing		Comparing and classifying			Angels	

Geometry - position and direction	Position, direction and movement	Pattern		
Statistics	Interpreting, constructing and presenting data	Problem solving		
Algebra	Equations	Formulae	Sequences	
Measurement	Compare and estimate	Measuring and calculating	Telling the time	Converting

Number and Place value

Area	Year N	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Counting	Use language associated with counting, such as “more”, “a lot”, “less”. Say number names to count objects, not necessarily in the right order or at the right speed. Begin to develop one-to-one correspondence and say one number name for each object. Move or touch objects to count them. Can count things they can’t touch or see, such as pictures on a wall or sounds.	Know that when objects are moved, spread out, or moved closer together that the total remains the same. Knows that the last number they say represents the number of objects in a group. Give someone a specified number of objects. Count out a specified number of objects from a larger group. Subitise small amounts of objects arranged on a regular pattern, such as a dice pattern. Subitise small amounts of	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any 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.	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward.	Count from 0 in multiples of 4, 8, 50 and 100. Find 10 or 100 more or less than a given number.	Count backwards through zero to include negative numbers. Count in multiples of 6, 7, 9, 25 and 1 000. Find 1000 more or less than a given number.	Interpret negative numbers in context. Count forwards and backwards with positive and negative whole numbers, including through zero. Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.	Use negative numbers in context, and calculate intervals across zero.

		objects arranged in an irregular pattern. Can count on when part of a set of objects is hidden.						
Comparing numbers	Recognise when a group of objects is more than one. Can indicate, for example by pointing, which group of objects has 'more' objects. Uses number language, such as 'more'. 'less' , 'fewer' and 'a lot'. Can indicate, for example by pointing, which	Recognise groups with one, two or three objects and begin to make comparisons between quantities, using the language of 'more' and 'fewer'. Compare two groups of objects, saying when they have the same number. Know that the quantity of	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. (copied from Fractions)	Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. (appears also in Reading and Writing Numbers)	Read, write, order and compare numbers up to 10000000 and determine the value of each digit. (appears also in Reading and Writing Numbers)

	set has more or which set has less. Match groups of objects with the same number. Say the number that comes before a given number in the sequence one to five, progressing to numbers from one to ten.	objects stays the same when they are spread out or moved closer together. Understand that objects will appear different if they are spread out or different sizes. Compare two groups of objects, saying when they have the same number. Can find one more and one less than a number to five, progressing to numbers to ten. Can find one less than a number to five, progressing to numbers to ten.						

Identifying, representing and estimating numbers	Can distinguish numerals from letters. For example, by pointing to a numeral when sharing a familiar book with an adult. Can represent numbers using fingers, marks on paper or pictures. Can pick out a matching numeral to a numeral that is shown to them. Can recognise a numeral from 1 to 3 and find	Can record using marks that they can interpret and explain. Can place consecutive numerals in order initially with numbers from 0 to 10, then progressing to numbers 0 to 20. Through a meaningful context, such as point scoring games, children can place their scores in order. Can place consecutive numbers in order	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.		

	the matching number of objects. Can sometimes match numeral to quantity. Can order objects, such as towers of bricks or pictures on cards, visually ordering numbers by saying which number is the largest and which is the smallest.	starting from a number other than one. Can place non-consecutive numbers in order. Initially with numbers from 0 to 10, then progressing to numbers 0 to 20. Can place numbers in order from smallest to greatest and from greatest to smallest. Make an estimate, such as choosing the group with more objects in, or choosing the group which has closest to ten objects.						

		Know that numbers are made up of different numbers. For example, four can be four and zero, one and three or two and two. Represent numbers in different ways using equipment, such as five or ten-frames, part-whole models, number lines or stories.						

Number - Addition and subtraction

Area	Year N	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Bonds			Represent and use number bonds and related subtraction facts within 20.	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.				

Mental calculation			Add and subtract one-digit and two-digit numbers to 20, including zero. Read, 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) and subtraction	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.

				of one number from another cannot.					

Area	Year N	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Written Method	Know that numbers identify how many objects are in a set. Know that a group of things changes in quantity when something is taken away. Know that numbers identify how many objects are in a set. Separate a group of three or four objects in	Count out objects from a larger group. Compare sets of objects, saying when they have the same number. Subtract by counting a group of objects, counting out the number to remove and then recounting all.	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)	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. (appears also in Mental Calculation)

	different ways, beginning to recognise that the total is still the same. Know that a group of things changes in quantity when something is added. Compare sets of objects, saying when they have the same number. Compare sets of objects, saying which has	Find one less than a number from one to ten. Understand the effect of subtracting zero. Understand the effect of subtracting the full amount. Represent numbers in different ways using equipment, such as five or ten-frames, part-whole models, number lines or stories.						

	more objects.	Compare groups of objects, saying how many belong and how many don't belong in the set. Count back to subtract. Use vocabulary of equals: leaves, makes, balances, same, total. Use vocabulary of subtraction: take away, how many left, subtract, minus.						

		Use vocabulary of addition: how many altogether, plus, more. Understand addition as an increase. Find the total number of items in two groups by counting all of them. Select two groups of objects to make a given total of objects. Recognise the number of objects without						

		counting. (0-5) Find out the ‘total’ or ‘how many altogether’ after two sets have been combined. Count on to add.						

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		Use vocabulary of comparison in practical contexts: how many fewer? How much shorter/cheaper than…?	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 simple problems in a practical context	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 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.

				involving addition and subtraction of money of the same unit, including giving change. (copied from Measurement)					

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Multiplication and Division

Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Identify and count multiplication and division facts	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) Recall 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) Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	Count in multiples of 6, 7, 9, 25 and 1000. (copied from Number and Place Value) Recall 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 1000000. (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 Numbers)	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)

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. Use written division methods in cases where the answer has up to two decimal places. (copied from Fractions (including decimals)

Identify properties of numbers; multiples, factors, prime, 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 (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3. (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, 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 addition, subtraction, multiplication and division Solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)

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Fractions

Area	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting in Fraction steps		Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)	Count up and down in tenths	Count up and down in hundredths		

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 $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ 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)	

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 Use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))

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 and order unit fractions, and fractions with the same denominators			
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	Round decimals with one decimal place to the nearest whole number

Equivalence (including fractions, decimals and percentages)		Write simple fractions e.g. $^1/_2$ of 6 = 3 and recognise the equivalence of $^2/_4$ and $^1/_2$.	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 $^1/_4$; $^1/_2$; $^3/_4$	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 percentages as a fraction with denominator 100 as a decimal fraction	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. $^3/_8$) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Use addition and subtractions 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

Multiply and divide 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. $^1/_4 \times {}^1/_2 = {}^1/_8$) Multiply one-digit numbers with up to two decimal places by whole numbers Divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$)

Multiply and divide 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 solving			solve problems using the skills taught across year 3	Solve problems 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.	Solve problems involving numbers up to three decimal places Solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those with a denominator of a multiple of 10 or 25	

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Ratio and proportion

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting in Fraction steps	Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division					Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison Solve problems involving similar shapes where the scale factor is known or can be found Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

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Geometry - Properties of shapes

Area	Year N	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Identifying shapes and their properties	Shows an interest in shape and space by playing with shapes or making arrangements with objects. Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'. Shows awareness of similarities of shapes in the environment. Shows interest in shape by sustained construction activity or by talking about	Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes Selects a particular named shape	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 surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]		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

	shapes or arrangements.							

Drawing and constructing					Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	Complete a simple symmetric figure with respect to a specific line of symmetry	Draw given angles, and measure them in degrees (°)	Draw 2-D shapes using given dimensions and angles Recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)
Comparing and classifying	Shows interest in shapes in the environment	They explore characteristics of everyday objects and shapes and use mathematical language to describe them		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

Angels					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 360^{o}) * angles at a point on a straight line and ½ a turn (total 180^{o}) * other multiples of 90^{o}	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

					perpendicular and parallel lines			

Geometry - Position and direction

Area	Year N	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Position, direction and movement	Uses positional language	Can describe their relative position such as ‘behind’ or ‘next to’	Describe position, direction and movement, including half, quarter and three-quarter turns	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 quarter, half and three-quarter turns (clockwise and anti-clockwise)		Describe positions on a 2-D grid as coordinates in 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	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Pattern				Order and arrange combinations of mathematical objects in patterns and sequences				

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Statistics

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

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				

Problem solving			Solve one-step and two-step 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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Algebra

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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) Represent and use number bonds and related subtraction facts within 20 (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) Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (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, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)		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

Formulae				Perimeters 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

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Measurements

	Year N	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Compare and estimate		Orders two or three items by length or height Orders two items by weight or capacity Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems	Compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, 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,	Compare and order lengths, mass, volume/capacity and record the results using >, < and = Compare and sequence intervals of time	Compare durations of events, for example to calculate the time taken by particular 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.	Estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in measuring) Estimate volume (e.g. using	Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3

			morning, afternoon and evening]		morning, afternoon, noon and midnight (appears also in Telling the Time)		1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	

Measuring and calculating		Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems They recognise, create and describe patterns They explore characteristics of everyday objects and shapes and use mathematical language to describe them.	Measure and begin to record the following: * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds)	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 and measuring vessels	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) Measure the perimeter of simple 2-D shapes	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 squares) in centimetres and metres	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 rectilinear shapes in centimetres and metres	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 have different perimeters and vice versa

			Recognise and know the value of different denominations of coins and notes	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	Add and subtract amounts of money to give change, using both £ and p in practical contexts	Find the area of rectilinear shapes by counting squares	Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes Recognise and use square numbers and cube numbers, and the notation for squared (^{2})	Calculate the area of parallelograms and triangles Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3] Recognise when it is possible to use formulae for area and volume of shapes

							and cubed (^{3}) (copied from Multiplication and Division)	

Telling the time		Measures short periods of time in simple ways	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 years	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 hour and the number of hours in a day. (appears also in Converting)	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m.,	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 Converting)	Solve problems involving converting between units of time	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 years

					morning, afternoon, noon and midnight (appears also in Comparing and Estimating)			

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	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	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) Convert between miles and kilometres

						to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	between metric units and common imperial units such as inches, pounds and pints	

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