

	PLACE VALUE							
Area of learning	Year 2	Year 3	Year 4	Year 5	Year 6			
Counting	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	4, 8, 50 and 100; find 10 or 100 more or less than a given number.	Count in multiples of 6, 7, 9, 25 and 1000.	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.			
	read scales* in divisions of ones, twos, fives and tens		Find 1000 more or less than a given number. Count backwards through zero to include negative numbers.	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.				
Comparing numbers	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.	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. (appears also under reading and writing numbers).			
Identifying, representing and estimating numbers	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. 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 and 100 000.	Round any whole number to a required degree of accuracy.			
Reading and writing numbers	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	Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. (appears also under reading and writing numbers)	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.			
				Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.				
Understanding place value	Recognise the place value of each digit in a two-digit number (tens, ones).	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	Solve number problems and practical problems that involve all of the above.	Solve number and practical problems that involve all of the above.			
	Use place value and number facts to solve problems. partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus	Solve number problems and practical problems involving these ideas.	Solve number and practical problems that involve all of the above and with increasingly large positive numbers.					



	ADDITION AND SUBTRACTION							
Area of learning	Year 2	Year 3	Year 4	Year 5	Year 6			
Number bonds Mental calculation	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 - 3 = 4 then 17 - 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 - 14 = 3 and 17 - 3 = 14) Add and subtract numbers using	add and subtract numbers mentally,	Tear 4	Add and subtract numbers mentally with	Perform mental calculations, including with			
	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 of one number from another cannot. Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17)	including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds		increasingly large numbers.	Use their knowledge of the order of operations to carry out calculations involving the four operations.			
Written methods	133,72 27,	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.	Inverse operations, estimating and checking 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 problems with addition and	Solve problems, including missing	Solve addition and subtraction two-step	Solve addition and subtraction multi-step	Solve addition and subtraction multi-step
	subtraction: using concrete objects	number problems, using number	problems in contexts, deciding which	problems in contexts, deciding which	problems in contexts, deciding which
	and pictorial representations,	facts, place value, and more complex	operations and methods to use and why.	operations and methods to use and why.	operations and methods to use and why.
	including those involving numbers,	addition and subtraction			
	quantities and measures.				
					Solve problems involving addition,
					subtraction, multiplication and division.



	MULTIPLICATION AND DIVISION							
Area of learning	Year 2	Year 3	Year 4	Year 5	Year 6			
Multiplication and number facts	RECAP: Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	RECAP: Count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)	RECAP: 7, 9, 25 and 1 000 (copied from Number and Place Value)	RECAP: 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)				
	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12 × 12					
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			
Written methods	for multiplication and division within statements for multiplication and	statements for multiplication and division using the multiplication tables that they know, including for two-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	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication			
ulvision.			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	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				
Order of operations					use their knowledge of the order of operations to carry out calculations involving the four operations			
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.	identify common factors, common multiples and prime numbers			



	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	
RECAP: 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
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	division including using their knowledge of factors and multiples, squares and cubes	solve problems involving addition, subtraction, multiplication and division
S		combination of these, including understanding the meaning of the equals

	FRACTIONS							
Area of learning	Year 2	Year 3	Year 4	Year 5	Year 6			
Counting in fractional steps	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/decimals	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 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				



		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 with small			
		denominators			
Comparing fractions/decimals		compare and order unit fractions, and fractions with the same denominators	Compare numbers with the same number of decimal places up to two decimal places	Compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1
				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
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. 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	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
		add and subtract fractions with the same denominator within one whole (e.g. $5/7 + 1/7 = 6/7$)	recognise and write decimal equivalents of any number of tenths or hundredths	read and write decimal numbers as fractions (e.g. 0.71 = 71 / 100)	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
			recognise and write decimal equivalents to 1 / 4; 1 / 2; 3 / 4	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 / 8)
				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	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Problem solving		solve problems that involve all of the above	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 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.	
			solve simple measure and money problems involving fractions and decimals to two decimal places.		



Addition and subtraction		add and subtract fractions with the same	add and subtract fractions with the same	add and subtract fractions with different
of fractions		denominator	denominator and multiples of the same number	denominators and mixed numbers, using the concept of equivalent recognise mixed numbers fractions
			recognise mixed numbers fractions and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $2/5 + 4/5 = 6/5 = 11/5$)	
Multiplication and division of fractions and 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 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 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
Ratio and proportion				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.



MEASUREMENT							
Area of learning	Year 2	Year 3	Year 4	Year 5	Year 6		
Comparing and estimating	Compare and order lengths, mass, volume/capacity and record the results using >, < and =	Compare durations of events, for example to calculate the time taken by particular events or tasks	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 (cm2) and square metres (m2) and estimate the area of irregular shapes (also included in measuring)	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.		
	Compare and sequence intervals of time	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)		Estimate volume (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water)			
Measuring and calculating	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)	Estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing)	Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.	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 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	Measure the perimeter of simple 2-D shapes	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Recognise that shapes with the same areas can have different perimeters and vice versa		
	Find different combinations of coins that equal the same amounts of money • use different coins to make the same amount		Find the area of rectilinear shapes by counting squares	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	Calculate the area of parallelograms and triangles		
	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		RECAP: recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	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	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) read the time on a clock to the nearest 15 minutes	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., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)	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	
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)	Convert between different units of metric measure (e.g. kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) Solve problems involving converting between units of time	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 converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	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

GEOMETRY						
Area of learning	Year 2	Year 3	Year 4	Year 5	Year 6	



Identifying shapes and their properties	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. 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 and describe the properties of 3-D shapes, including the number of		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
	edges, vertices and faces.				circumference and know that the diameter is twice the radius.
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 (o)	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
Comparing and classifying	Compare and sort common 2-D and 3-D shapes and everyday objects name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.		Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	Distinguish between regular and irregular polygons based on reasoning about equal	Properties). 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 perpendicular and parallel lines.	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.
Position and direction	order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement, including	•	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.	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.



movement in a straight line and		oints and draw sides to	
distinguishing between rotation as a	complete a give	en polygon.	
turn and in			
terms of right angles for quarter, half			
and three-quarter turns (clockwise and			
anticlockwise).			

STATISTICS AND ALGEBRA							
Area of learning	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 categorical data	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		
Solving problems		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		
Equations					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			Use simple formulae RECAP: recognise when it is possible to use formulae for area and volume of shapes
Sequences			Generate and describe linear number sequences