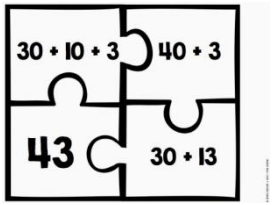
Year 1		Addition and Subtraction Relationship	Multiplication and Division Relationship	Fractions
Mental Calculation	Recall	-count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number (practice counting until fluent) *3…4,5,6,7, 97…98,99,100,101,102 36…35, 34, 33, 32* *1st, 2nd, 3rd, 4th …* -given a number, identify one more and one less -represent and use number bonds and related subtraction facts within 20 -compare numbers, using mathematical vocabulary ▪ *More than, less than, greater than, fewer than, equal to, most, least* ▪ count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens *as repeated addition* ▪ identify odd and even numbers ▪ revisit the story five, and know the story of ten ▪ begin to partition 2 digit numbers into tens and ones (place value statutory curriculum for year 1)	-Doubles and halves of all numbers to 10 *Mental recall following concrete and pictorial understanding* -count in multiples of twos, fives and tens, starting at zero *recite patterns of numbers chorally, following concrete and pictorial understanding*	Recall halves of all even numbers to 10 Eg. ½ of 10 ½ of 8
	Skills (with jottings)	-identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least Add and subtract one-digit and two-digit numbers -read and write numbers from 1 to 20 in numerals and words. -begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing and begin to partition (tens and ones) numbers up to 100, supported by objects and pictorial representations.	▪ count in multiples of ones, twos, fives and tens *arrays, concrete and pictorial representations, eg pairs of shoes, fingers on hands*	
	Strategies	All of the calculating in year 1 to be modelled with manipulatives, e.g. tens frames and bead strings, then illustrated with pictorial representations alongside before moving to the abstract, e.g. empty number lines -reorder numbers when adding, putting larger number first -partition small numbers to add or subtract *eg 8 + 3 / 8 + 2 + 1* -partition – double and adjust *eg 6 + 7 / 6 + 6 + 1 / 7 + 7 -1* -Bridge though 10 (and later 20) when adding a single digit *Eg 18 + 5 / 18 + 2 + 3,* -Add 9 by adding 10 and adjusting/subtracting one -Explore the 'nearly-ness' of 11 and 9. *Eg. model with tens frames and the empty space or extra one.*	-Use patterns in digits *e.g. 0 and 5 when counting in 5s* use a 100 square to illustrate patterns in numbers, but also use manipulatives and pictorial representations alongside, eg arrays.	

Year 2		Addition and Subtraction Relationship	Multiplication and Division Relationship	Fractions
Mental Calculation	Recall	Practice counting to at least 100 to develop fluency count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward recognise the place value of each digit in a two-digit number (tens, ones) compare and order numbers from 0 up to 100 and use <, >, = signs Recall and use all addition and subtraction facts to 20 fluently and derive and use related facts up to 100 recall language of addition and subtraction, extend to sum and difference	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers count in multiples of three	Find, ½ of a length, shape, set of objects or quantity To count in halves e.g. ½, 1, 1 ½ , 2, etc recognise, find, name and write fractions 1/3 , ¼ , 2/4 and 3/4 of a length, shape, set of objects or quantity write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½ . count in fractions up to 10, starting from any number and using the and equivalence on the number line (for example, 1 , 1 and ¼, 1 and 2/4 (or 1 ½), 1 and 3/4 , 2). This reinforces the concept of fractions as numbers and that they can add up to more than one.
	Skills (with jottings)	read and write numbers to at least 100 in numerals and in words identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use <, > and = signs 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	Use laws of commutativity and inverses to develop multiplicative reasoning (4 x 5 = 20 and 5 x 4 = 20 and 20 ÷ 4 = 5 and 20 ÷ 5 = 4)	
	Strategies	Use place value and number facts to solve problems e.g. use knowledge of 3 + 7 to understand that 30 + 70 = 100 or 13 + 7 = 20 or 3 +27 = 30 Partition numbers in different ways to support subtraction (e.g. 23=20+3 and 23 = 10+13) Begin to understand zero a place holder Understand that addition is commutative Recognise addition/subtraction inverse relationship 	Relate the 10 times table to place value and the 5 times table to a clock face and hands. Relate multiplication and division to sharing and grouping. Introduce pupils to multiplication tables Use arrays to represent multiplication	

Year 3		Addition and Subtraction Relationship	Multiplication and Division Relationship	Fractions
Mental Calculation	Recall	• Continue to revisit addition and subtraction number facts for all numbers to 20 • find 10 or 100 more or less than a given number	• Continue to revisit multiplication and division facts from Year 2; 2, 5, 10, 50,100 • Count in multiples of 4, 8, 50 and 100 • recall and use multiplication and division facts for the 3, 4, and 8 multiplication tables • Find doubles and halves of all whole numbers to at least 20	• Be able to find ½, ¼ 1/5 and 1/10 of any whole 2-digit number where there is no remainder To count up and backwards in tenths; recognise that tenths arise from dividing an object into ten equal parts and dividing one digit numbers or quantities by 10.

	Skills (with jottings)	• solve number problems and practical problems using number facts, missing values, place value, relationship between addition and subtraction.
		• recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
		• identify, represent and estimate numbers using different representations
		• compare and order numbers up to 1000
		• add and subtract numbers mentally, including:
		  ◦ a 3-digit number and ones
		  ◦ a 3-digit number and tens
		  ◦ a 3-digit number and hundreds
		• Find the difference between three digit numbers
		• Add and subtract amounts of money and give change
		• Read and write numbers up to 1000
			• Use knowledge of related multiplication facts to find the 4x table by doubling the 2x table. Find the 8x table by doubling the 4x table.
			• Find all doubles and halves of multiples of 50 to 500 e.g. double 150, half of 400
			• Solve missing number calculations	

	Strategies	• Count on and back in hundreds, tens and ones, • Subtract by counting up from a smaller number to a larger number • Partition then recombine • Partition, double and adjust • Use knowledge of place value to add and subtract • Build on work in Year 2: Partition numbers in different ways, not just HTU e.g. make number bugs 167 = 150+17	• use multiples of 2, 3, 4, 8, 10, 50 and 100 • Through doubling, connect 2, 4 and 8 multiplication tables • Understand multiplication as grouping • Understand multiplication as scaling e.g. a piece of ribbon is 4cm long. How long would a piece be that is 10 times longer? • Understand what happens to the digits when a number is multiplied by 10 or 100. • Partition; divide or multiply; then recombine	

Year 4		Addition and Subtraction Relationship	Multiplication and Division Relationship	Fractions
Mental Calculation	Recall	• find 1000 more or less than a given number • count backwards through zero to include negative numbers • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000 • identify, represent and estimate numbers using different representations • solve number and practical problems that involve all of the above and with increasingly large positive numbers	• build on Year 3 work on multiples • count in multiples of 6, 7, 9, 25 and 1000 • recall multiplication and division facts for multiplication tables up to 12 × 12 • Recognise and use the factor pairs for known multiplication facts up to 144 e.g. the factor pairs of 12 are 1 and 12, 2 and 6, 3 and 4. • Doubles and halves of all numbers to 100	Pairs of fractions that total 1 To find ½, 1/3. ¼ and 1/5 of a number with no more than 4 digits e.g. 1/5 of 250 Add and subtract fractions with the same denominator count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
	Skills (with jottings)	• Partition into tens and units, adding the tens first. e.g. 267 + 263= (200+200) + (60+60)= (7+3) = • Recall all pairs of numbers which are multiples of 10 that total 1000 e.g. 250+750= • round any number to the nearest 10, 100 or 1000 • Identify the value of each digit	• Find the effect of multiplying one or two digit numbers by 10 and 100 • Identify the value of each digit • multiply by partitioning the digits and recombining (distributive law) e.g. 23 x 3 = (20 x 3) + (3x3)=	
	Strategies	• Count on in hundreds, tens, ones, tenths, • Partition then recombine • Partition, double then recombine • Partition, halve then recombine • Subtract by counting up from the smaller number to the larger • Add or subtract a multiple of 10 or 100 and then adjust	• Partition, double then recombine • Partition, halve then recombine • Find quarter of a number by halving & halving again • Multiply by 20 by multiplying by 10 then doubling • Multiply by 5 by multiplying by 10 then halving • Recognise and use factor pairs and commutativity in mental calculations • 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	

Year 5		Addition and Subtraction Relationship	Multiplication and Division Relationship	Fractions
Mental Calculation	Recall	• add and subtract numbers mentally with increasingly large numbers • count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 • Find what must be added to a decimal to make a whole number e.g. 7.2 + _ = 8 • Count backwards and forwards with positive and negative whole number , including through zero	Continue to recall multiplication and division facts for multiplication tables up to 12 × 12 • Recognise and use the factor pairs for known multiplication facts up to 144 e.g. the factor pairs of 12 are 1 and 12, 2 and 6, 3 and 4 • multiply and divide numbers mentally drawing upon known facts • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Find doubles and halves of decimals e.g. double 2.7 • Recall all prime numbers up to 19	To find a fraction of a number e.g. 3/5 of 250 Pairs of fractions and decimals that total 1 e.g. 0.3+0.7 = 0.45 + 0.55 = 3/10 + ? = 1 Add and subtract any pair of decimal fractions each with units and tenths e.g. 4.8 + 2.7= Round decimals to with two decimal places to nearest whole number and one decimal place Read, write, order and compare numbers with up to three decimal places Continue to practise counting forwards and backwards in simple fractions Mentally add and subtract tenths and one whole digit number and tenths
	Skills (with jottings)	• read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 • add and subtract mentally with increasingly large numbers • solve number problems and practical problems that involve all of the above • Partition numbers into ThHTU and add most significant digit first • Find sums and differences of decimal numbers • Use the addition/subtraction relationship to solve problems	• Find doubles and halves of all numbers to 1,000 • Establish whether a number up 100 is a prime number • Recognise and use squared numbers and cubed numbers and the notation for squared ^{2} and cubed ^{3} • Convert measurements from smaller to larger and vice versa e.g. 2.6 kg = 2600 g • Multiply a whole number by 10, 100 and 1000 • Solve problems involving multiplication and division using knowledge of factors, multiples, squares and cubes and scaling by simple fractions • Use the multiplication/division relationship to solve problems	
	Strategies	• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Use knowledge of place value to solve related problems e.g. 6.3 – 4.8 = 63 – 48 =	• Multiply by near multiples of 10 then adjust e.g. 29 x 6 = (30 x 6) – 6 = • Use equivalent calculations to multiply E.g. 48 x 25 = 24 x 50 = 12 x 100	

Year 6		Addition and Subtraction Relationship	Multiplication and Division Relationship	Fractions
Mental Calculation	Recall	• add and subtract numbers mentally with increasingly large numbers • count forwards or backwards in steps of powers of 10 for any given number up to 10,000,000	Recall all multiplication and division facts for multiples of 10 up to 12 x 12e.g. 120 x 8, 420 ÷ 6, etc Multiply b 25 by multiplying by 100 and dividing by 4 ▪ identify common factors, common multiples and prime numbers Multiply by near doubles of 10 e.g. 29 x 6 = (30 x 6) – 6 Doubles and halves of all numbers to 10,000 Recall prime numbers to 30	Multiply and divide decimals by 10, 100, 1000 and 10,000 To find a fraction of a number e.g. 3/7 of 350 Compare and order fractions
	Skills (with jottings)	Add near decimal doubles Add or subtract a decimal with units and tenths, that is nearly a whole number e.g. 1.9+1.8= read, write, order and compare numbers up to 10,000,000 and determine the value of each digit round any whole number to a required degree of accuracy solve number and practical problems that involve all of the above. perform mental calculations, including with mixed operations and large numbers	perform mental calculations, including with mixed operations and large numbers	
	Strategies	Partition into millions, hundreds of thousands, tens of thousands, thousands, hundreds, tens and units, adding the most significant digit first use negative numbers in context, and calculate intervals across zero Partition and adjust: e.g. 4.3 + 2.9 = 4.3 = 3 – 0.1 Pupils round to nearest 10, 20, 50 etc	Recognise how to scale up and down using multiplication and division Multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places Pupils round to nearest 10, 20, 50 etc	