

St Giles' C of E Primary School CALCULATION Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
ADDITION	<ul style="list-style-type: none"> *use concrete representations e.g. numicon to combine two or more groups to establish a total * count on from one number * subitise to 5 and then up to 10 * jump on number tracks * use part-whole modelling * introduce five and tens frames * use standard notation + and = *explore missing number problems in part/whole model * 1 more to 20 	As EYFS plus: <ul style="list-style-type: none"> * pictorial representations * count/jump along a number line * use symbols +, = *introduce partitioning into 10s and 1s. * 1 more to 100 	As previous years plus: <ul style="list-style-type: none"> * develop mental strategies such as starting with the largest number * partition into tens and ones * add using concrete objects, pictorial representations and mentally – two digit numbers and ones; two two-digit numbers and 3 one-digit numbers bridging 10 * begin column method with no carrying *apply number bonds to 10 to adding to 100 	As Year 2 plus: <ul style="list-style-type: none"> * number lines with larger jumps * mentally add – three-digit numbers and ones; three-digit numbers and tens; three-digit numbers and hundreds * expanded method of columnar addition including carrying with numbers up to three digits 	As Year 3 plus: <ul style="list-style-type: none"> * develop the compact columnar method of addition with numbers up to 4 digits, including carrying * continue to practise mental strategies with increasingly large numbers 	As previous years plus: <ul style="list-style-type: none"> * columnar addition with whole numbers with more than 4 digits and decimals * add mentally with increasingly large numbers 	Practise, recap and consolidate previous years' learning
Addition VOCABULARY	add, more, and, make, how many, total, altogether, partition, recombine, how many more to make, how many more than. Equal, is the same as, sets	add, more then, and, make, total, altogether, plus, equals, regrouping, part, whole, greater, fewer, addition, tens, ones, how many more than, how many more to make, bonds, put together, doubles	As year 1 plus: sum, partition, inverse,	As KS1 plus: Increase, increased by..., ones, tens, hundreds, tenths, hundredths etc, boundary, carry			
SUBTRACTION	<ul style="list-style-type: none"> * recognise subtraction as 'taking away' and 'jumping back' on number tracks * compare two numbers to find difference eg as 'towers' or 5 /10 frames * compare sets of concrete objects * use number tracks and standard notation of – and = * use part/whole model to record subtraction *explore missing number problems * 1 less to 20 	As EYFS plus: <ul style="list-style-type: none"> * take away/count back on a number line * tens frames * recall of subtractions facts within 10 * count on to find the difference on a number line * begin to recognise addition and subtraction as related operations * 1 less to 100 	As previous years plus: <ul style="list-style-type: none"> * recall of subtractions facts within 20 * use known number facts eg $10 - 2 = 8$ and $100 - 20 = 80$ * use inverse relationships between addition and subtraction * draw and use own number lines to count back and find the difference * partition second number to subtract and recombine * subtract using concrete objects, pictorial representations and mentally – two digit numbers and ones; two digit numbers and tens; 	As year 2 plus: <ul style="list-style-type: none"> *use number lines, including bridging tens, when finding the difference and taking away, partitioning the second number * expanded column method including decomposition and exchanging with increasingly large numbers up to three digits * mentally subtract – three-digit numbers and ones; three-digit numbers and hundreds 	As year 3 plus: <ul style="list-style-type: none"> * expanded column method involving exchanging with increasingly large numbers up to 4 digits * begin to use standard columnar written method of subtraction (compact method with no exchanging initially leading to exchanging) * continue to practise mental methods of subtraction 	<ul style="list-style-type: none"> * subtract whole numbers with more than 4 digits using the formal columnar written method of subtraction * practise mental calculations with increasingly large numbers 	As year 5 with larger numbers and decimals

			two two-digit numbers and 3 one-digit numbers bridging 10 subtraction along a number line * begin to record subtractions in columns with no regrouping				
Subtraction VOCABULARY	take away, leave, how many are left, how many fewer than, less than	take away, leave, how many are left, how many fewer than, difference between, <i>how much more is...</i> , <i>subtract, minus, equals, less than, distance between</i>	As year 1 plus: subtraction	As KS1 plus: Decrease, decreased by..., exchange			
MULTIPLICATION	* concrete and pictorial representations to begin to recognise repetitive addition of groups of the same size * begin counting in steps of 2, 5, or 10, orally and grouping in sets of 2, 5 and 10	* use concrete objects, pictorial representations and arrays with the support of the teacher * use mental recall of doubles * recognise repetitive addition of groups of the same size; counting in steps of 2, 5 or 10, recording on a number line	* use mental recall of doubles to support x2; * recognise repetitive addition of groups of the same size * understand and use arrays *introduce concept of commutativity * recall and use multiplication facts for 2, 3, 5 and 10, recording on a number line	As year 2 moving to: * recall and use 3, 4 and 8 multiplication tables * grid method when multiplying two-digit numbers by one digit * scaling and correspondence problems * practise mental methods of multiplication to two-digit numbers eg 20 x 3	As year 3 plus: * recall multiplication facts for tables up to 12 x 12 * grid method when multiplying two-digit and three-digit numbers by one digit, moving to expanded formal written method of 2 and 3-digit numbers multiplied by a single digit * integer scaling problems and harder correspondence problems * practise mental methods of multiplication to three-digit numbers eg 200 x 3	* expanded formal written method of numbers up to 4 digits multiplied by a one or two-digit number, moving to the standard written method of short and long multiplication of numbers up to 4 digits by a one or two-digit number * scaling by simple fractions involving simple rates * multiply numbers mentally drawing upon known facts eg 80 x 90	* multiply multi-digit numbers up to 4 digits by a two-digit number using formal written methods of long multiplication * perform mental calculations including with mixed operations and large numbers
Multiplication VOCABULARY	double, groups of, sets of, lots of, total	double, groups of, sets of, lots of, array	double, groups of, times, multiply, multiple, lots of, sets of, repeated addition	As year 2 plus: inverse	As year 3 plus: product	As year 4	
DIVISION	* begin to recognise sharing equally with concrete and pictorial representations * group concrete materials *recognise equal as 'fair' sets.	* halve and quarter numbers * recognise sharing equally using concrete and pictorial, also repetitive addition or subtraction of groups of the same size ie grouping, arrays as groups *making equal groups from a set *develop conceptual understanding of size of groups compared to how many groups	As year 1 plus: * recognise division as sharing equally, repetitive addition or grouping of the same size ie grouping on a number line * use standard notation of ÷ and =	As year 2 plus: *recall and use division facts for 3, 4 and 8 * introduce short division with two-digit numbers by a single digit and with multiplication facts children can recall rapidly * develop mental methods eg 4 x 12 x 5 = 4 x 5 x 12 = 20 x 12 = 240	As year 3 plus: *recall and use all division facts to 12 x 12 * extend short division to three-digit numbers divided by a single digit with exact answers * practise mental methods extending to three-digit numbers to derive facts eg 600 ÷ 3 = 200	* divide numbers up to 4-digits by a one-digit number using formal short division including with remainders * divide numbers mentally drawing upon known facts eg 2400 ÷ 60	* divide numbers up to 4 digits by a two-digit number using the formal written method of long division with remainders * divide numbers up to 4 digits by a two-digit number using the formal written method of short division with remainders * perform mental calculations including with mixed operations and large numbers

Division VOCABULARY	groups, share, left over, half, fair, share fairly, sets of, how many will each person have	groups, share, left over, <i>half, each, equal, not equal</i>	groups, share, left over, divide, divided by, equal groups of, inverse	As year 2 plus: remainder	As year 3 plus: divided into, divisible by, factor, quotient	As year 4
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