

Mathematics Progression of Calculations

The following formal written methods are introduced in the below year groups. All pupils learn at different speeds; it may be that some pupils continue to use previously learnt methods to ensure they are embedded before moving on to the next method. Our Progressions in Calculations (Examples) document gives guidance on what each of these methods looks like.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition	<ul style="list-style-type: none"> - Jottings <i>(Drawing pictures to represent addition problems)</i> - Using moveable objects when finding the total. <i>(1 more, 1 less)</i> 	<ul style="list-style-type: none"> - Number line <i>(Counting on)</i> - Counting two sets of objects <i>(Within 20)</i> - Partitioning <i>(up to 100)</i> - Number bond facts <i>(within 20)</i> 	<ul style="list-style-type: none"> - Revision of year one methods <i>(with numbers up to 100)</i> - Adding with place value dienes <i>(Exchanging tens)</i> 	<ul style="list-style-type: none"> - Column addition <i>(up to 1000)</i> 	<ul style="list-style-type: none"> - Column addition <i>(up to 4 digit numbers)</i> 	<ul style="list-style-type: none"> - Column Addition <i>(more than 4 digit numbers)</i> 	<ul style="list-style-type: none"> - Column Addition
	<p>Language: Add, more, plus, make, sum, total, altogether, 1 more, 2 more, How many more to make? How many more is ... than...? How much more is ...? Odd/even</p>	<p>Language: Add, more, plus, make, sum, total, altogether, equals, score, double, near double, 1 more, 2 more, 10 more. How many more to make? How many more is ... than...? How much more is ...? Odd/even, Tens, Ones,</p>	<p>Language: Add, addition, more, plus, make, sum, total, altogether, score, equals, double, near double, 1 more, 2 more, 10 more, 100 more. How many more to make? How many more is ... than...? How much more is ... than ...? Partitioning, Count on, combine, recombine, groups, Tens, Ones.</p>	<p>Language: Add, addition, more, plus, make, sum, total, altogether score How many more to make...? How many more is...than..? Tens, Ones, Hundredths</p>	<p>Language: Add, addition, more, plus, make, sum, total, altogether, score. How many more to make...? How many more is...than..? Ones Tens Hundreds Thousands Tens of thousands Tenth's Hundredth's Difference Exchange</p>	<p>Language: Add, addition, more, plus, make, sum, total, altogether score How many more to make...? How many more is...than..? Tens Ones Hundreds Thousands Ten thousands Tenth's Hundredth's Thousandth's Exchange</p>	<p>Language: Add, addition, more, plus, make, sum, total, altogether score How many more to make...? How many more is..than..? Tens Ones Hundreds Thousands Ten thousands Tenth's Hundredth's Thousandth's Exchange</p>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Subtraction	<ul style="list-style-type: none"> - Jottings <i>(Drawing pictures to represent subtraction problems)</i> - Visual images and models <i>(fingers, Numicon, objects)</i> 	<ul style="list-style-type: none"> - Number Line <i>(Counting back)</i> - Using moveable objects to count back physically - Number bond facts <i>(within 20)</i> 	<ul style="list-style-type: none"> - Revision of year one methods <i>(with numbers up to 100)</i> - Taking away using dienes <i>(Exchanging, replacing a ten with ten ones)</i> 	<ul style="list-style-type: none"> - Column subtraction <i>(three digit numbers, with exchanging)</i> 	<ul style="list-style-type: none"> - Column subtraction <i>(up to 4 digit numbers)</i> 	<ul style="list-style-type: none"> - Column subtraction <i>(more than 4 digit numbers)</i> 	<ul style="list-style-type: none"> - Column subtraction
	<p>Language: Subtraction Take away Minus Count back How many? How many more now? Difference Total Halving Fewer Before After</p>	<p>Language: Subtraction Take away Minus, leave, how many are left, left over, gone, fewer, 1 less, 2 less, 10 less, Count back How many? Difference Total Sharing Halving</p>	<p>Language: Subtraction, take away, minus, ones, tens, count back, how many? Difference, total, halving, fewer How many are left? How many fewer than...? How can we make them the same? How many more is...than...? How many less than ... is? What is the difference between?</p>	<p>Language: Subtract, take away, minus, borrowing, ones, tens, hundreds, difference between How much less than...? How much more is...? How many more make?</p>	<p>Language: Subtract, take away, minus, borrowing, ones, tens, hundreds, thousands, difference between How much less than...? How much more is...? How many more make?</p>	<p>Language: Decrease Exchange Expanded method Inverse Counting up Estimate</p>	<p>Language: Decrease Exchange Expanded method Inverse Counting up Estimate</p>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication	<ul style="list-style-type: none"> - Doubling <i>(Using objects)</i> - Making pairs <i>(Counting in pairs, number lines)</i> - Counting in 10s 	<ul style="list-style-type: none"> - Counting in 2s, 5s, 10s. <i>(chanting, number line)</i> - Using everyday arrays <i>(objects; egg boxes, stamps etc)</i> 	<ul style="list-style-type: none"> - Recall multiplication facts for 2x, 5x, 10x tables. - Recognise x means 'lots of' - Draw pictures and arrays 	<ul style="list-style-type: none"> - Recall multiplication facts for 2x, 3x, 4x, 5x, 8x, 10x tables. - Column multiplication <i>(Short multiplication, 2 digit x 1 digit)</i> 	<ul style="list-style-type: none"> - Recall all multiplication facts - Expanded multiplication and short multiplication <i>(2 and 3 digit x 1 digit)</i> 	<ul style="list-style-type: none"> - Recall all multiplication facts - Short multiplication <i>(numbers up to a million x 1 digit number)</i> - Long multiplication <i>(numbers up to a million x 2, 3, 4 digit numbers)</i> 	<ul style="list-style-type: none"> - Recall all multiplication facts - Short and long multiplication <i>(multi digit numbers up to 4 digit x 2 digit)</i>
	<p>Language: Count, double, pairs, groups.</p>	<p>Language: Count, double, pairs, groups, arrays</p>	<p>Language: Multiply, multiplied by, multiple of, repeated addition, array, double, pairs, lots of, groups of, times</p>	<p>Language: lots of, groups of multiplication, multiplied by multiple of, product times as repeated addition array row, column double, halve share, share equally one each, two each, three each... arrow cards</p>	<p>Language: lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, times as (big, long, wide... and so on), repeated addition, array, row, column, double, halve, factor</p>	<p>Language: lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, times as (big, long, wide... and so on), double, halve, share, share equally, factors, prime, square, square root</p>	<p>Language: lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, times as (big, long, wide... and so on), repeated addition, array, row, column, double, halve, factors, prime, square, square root, Composite.</p>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Division	<ul style="list-style-type: none"> - Sharing objects by halving them between two or three people (<i>draw pictures and represent their mathematical thinking</i>) 	<ul style="list-style-type: none"> - Halve numbers to 20 Explore sharing and grouping (<i>pictures of 2s, 5s, 10s</i>) 	<ul style="list-style-type: none"> - Recall and use division facts of 2s, 5s and 10s. - Recall halves to 100. - Understanding division as sharing. (<i>Recording in drawings, including some remainders</i>) 	<ul style="list-style-type: none"> - Recall and use division facts of 2s, 3s, 4s, 5s, 8s, 10s. - Use knowledge of division as the inverse of multiplication. - Sharing dienes into equal groups as a written method (<i>2 digits divided by 1 digit, including exchanging</i>) 	<ul style="list-style-type: none"> - Recall and use division facts for all times tables. - Understanding of place value to divide whole numbers and decimals by 10 and 100. - Part-whole/partitioning to divide (<i>3 digits by 1 digit, with and without remainders</i>) Introduction of short division 	<ul style="list-style-type: none"> - Divide whole numbers and those involving decimals by 10, 100 and 1000 - Short division (<i>up to 4 digits by 1 digit</i>) - Introduction of long division 	<ul style="list-style-type: none"> - Divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places. - Short division (<i>4 digits by 2 digits</i>) - Long division (<i>4 digits by 2 digits</i>)
	<p>Language: share, count, group, set, double, half, share out</p>	<p>Language: Division, divide, halving, half/halve, whole, sharing ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$), grouping</p>	<p>Language: Division, divide, halving, sharing, pairs, equal groups, share equally, remainder</p>	<p>Language: lots of, groups of, multiple of, product, times as (big, long, wide... and so on), repeated addition, array, row, column, double, halve, share, share equally</p>	<p>Language: lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, times as (big, long, wide... and so on), repeated addition, array, double, halve, share, share equally, equal groups of, divide, division, divided by, divided into, remainder, factor, quotient, divisible by,</p>	<p>Language: lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, once, twice, three times... ten times... times as (big, long, wide... and so on), repeated addition, array, row, column, double, halve, share, share equally.</p>	<p>Language: lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, once, twice, three times... ten times... times as (big, long, wide... and so on), repeated addition, array, row, column, double, halve.</p>