

Number Talk Progression Document

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Overview of National Curriculum objectives

EYFS

ELG Numbers: Children count reliably with numbers from 1 to 20, place them in order and **say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.**

Year 1

- given a number, identify one more and one less
- count in multiples of twos, fives and tens
- read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve missing number problems such as $7 = ? - 9$
- 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
- 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

Year 2

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- applying their increasing knowledge of mental and written methods
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- 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 of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

- recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
- write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$

Year 3

- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- Pupils should be taught to:
 - 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 with up to three digits
- estimate the answer to a calculation and use inverse operations to check answers
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- 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 methods
- recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- recognise and show, using diagrams, equivalent fractions with small denominators
- add and subtract fractions with the same denominator within one whole
- add and subtract amounts of money to give change, using both £ and p in practical context

Year 4

- count in multiples of 6, 7, 9, 25 and 1000
- find 1000 more or less than a given number
- add and subtract numbers with up to 4 digits
- estimate and use inverse operations to check answers to a calculation
- recall multiplication and division facts for multiplication tables up to 12×12
- 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
- multiply two-digit and three-digit numbers by a one-digit number
- recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten

- add and subtract fractions with the same denominator
- 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
- solve simple measure and money problems involving fractions and decimals to two decimal places
- calculate the perimeter of a rectilinear figure
- estimate, compare and calculate different measures, including money in pounds and pence

Year 5

- add and subtract whole numbers with more than 4 digits
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- multiply numbers up to 4 digits by a one- or two-digit number
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- add and subtract fractions with the same denominator and denominators that are multiples of the same number
- multiply proper fractions and mixed numbers by whole numbers
- solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25
- mentally add and subtract tenths, and one-digit whole numbers and tenths
- calculate the perimeter of composite rectilinear shapes in centimetres and metres
- calculate and compare the area of rectangles
- estimate volume

Year 6

- multiply multi-digit numbers up to 4 digits by a two-digit whole number
- divide numbers up to 4 digits by a two-digit whole number
- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- multiply simple pairs of proper fractions, writing the answer in its simplest form
- divide proper fractions by whole numbers
- associate a fraction with division and calculate decimal fraction equivalents
- multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
- multiply one-digit numbers with up to two decimal places by whole numbers

- solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

Term 1	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Addition and subtraction Strategies to cover : Count on Count back Partition Round Near doubles Doubles Adjusting Bridging	Numbers 1,2,3,4, Counting in 1s Ways of making 2 Knowing one more than 1 is 2 Knowing one less than 2 is 1 Ways of making 3 Knowing one more than 2 is 3 Knowing one less than 3 is 2 Ways of making 4 Knowing one more than 3 is 4 Knowing one less than 4 is 3 Counting sets of objects up to 4	Bonds for 10 and within 10 1 more 1 less 2 more 2 less 3 more 3 less 10 more than numbers to 10 Doubles to 10 Near doubles 2 + 3 4 + 5	Bonds within 20 If I know $6 + 4 = 10$ then $16 + 4 = 20$ 10 more any number to 100 10 less up to 100 Adding 3 single digit numbers Multiples of 10 e.g. $10 + 60$ Two digit add/subtract multiple of 10 e.g. $23 + 40$ Adding 9 Subtracting 9 Add 11 Subtracting 11 Doubles Near doubles $13 + 14$ (within 50)	Bonds within 100 If I know $6 + 4 = 10$ then $60 + 40 = 100$ 10 more /10 less for 3 digit numbers 100 more/100 less than 3 digit number Revise 2 digit $23 + 58$, $91 - 17$ Adding – adjusting $19, 29, 39$ Subtracting $19, 29, 39$ etc Near doubles $35 + 36$ $235 + 236$ Partitioning Rounding	Bonds for 1000 If I know $6 + 4 = 10$ Then $400 + 600 = 1000$ 10 more /10 less for 4 digit numbers 100 more/100 less than 4 digit number 1000 more/1000 less Revise 3 digit $123 + 458$, $341 - 287$ Adding – adjusting $19, 29, 39$, 199 , 209 , Subtracting $19, 29, 39$, 109 , 199 etc Near doubles $35 + 36$ $235 + 236$ $3335 + 2336$ Partitioning Rounding	Bonds for within 1 If I know $6 + 4 = 10$ Then $0.6 + 0.4 = 1.0$ 10 more /10 less for 5 digit numbers 100 more/100 less than 5 digit number 1000 more/1000 less Revise 4 digit $9123 + 1458$, $7341 - 6287$ Revise adjusting $119, 29, 39$, 109 , 199 etc Revise Near doubles $35 + 36$ $235 + 236$ $3335 + 2336$ Partitioning Rounding Decimal addition /Subtraction within 1.0 Decimal addition $6 + 4 = 10$ $0.6 + 0.4 = 1.0$	Bonds for 1 using 1/100ths If I know $6 + 4 = 1.0$ Then $60/100 + 40/100 = 1.0$, $0.60 + 0.40 = 1.0$ Revise 4 digit $9123 + 1458$, $7341 - 6287$ Revise adjusting $119, 29, 39$, 109 , 199 etc Revise Near doubles $35 + 36$ $235 + 236$ $3335 + 2336$ Partitioning Rounding Decimal addition /Subtraction within 1.0 Decimal addition $45 + 52$ $0.45 + 0.52$ $92 - 71 =$ $0.92 - 0.71 =$

Term 2	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
<p>Multiplication</p> <p>Strategies to cover: Counting on Counting back Arrays Known facts Doubling Commutativity</p> <p>Application to area and volume</p> <p>Factor pairs Square numbers Cube numbers</p>	<p>Numbers 5,6,7,8,9</p> <p>Ways of making 5 Ways of making 6 Ways of making 7 Ways of making 8 Ways of making 9 1 more and 1 less Counting sets of objects up to 9 Combining sets of objects to make a total of up to 9</p>	<p>1 x table Counting in 2s forwards Counting in 5s forwards Counting in 10s forwards Doubling Count in 2p Count in 5p Count in 10p</p>	<p>Counting in 2s forwards and backwards from zero Counting in 5s forwards and backwards from zero Counting in 10s forwards and backwards from zero 2 x table 5 x table 10 x table Commutativity Count forwards in 3s from zero</p>	<p>Recall 2x,5x,10x and division facts include outside known facts such as 19 x 10 , 15 x 2 Commutativity Count in 3s forwards and backwards from zero Count in 4s and link to 2 x table 4 x table Count in 8s forwards and backwards linking this to 2s and 4s Count in 6s forwards and backwards from zero – link to 60s Links between 3 and 6 x tables Recall of 3 x and 6 x tables</p>	<p>X 1 and 0 Recall of 2x,3x,4x,5x,6x, 8 x 10x tables include outside know facts Such as 17 x 8 15 x 4</p> <p>Count in 11s forwards and backwards from zero Count in 9s forwards and backwards from zero Link to 3 and 6 x tables Count in 7s forwards and backwards from zero – link to days of the week</p> <p>Recall of 7x, 9x and 11 x tables</p> <p>X 3 single digit numbers</p> <p>12 x table – link to 12 months = 1 year Use known facts to support 12 x tables Commutativity</p>	<p>Recall all times tables facts and use them to apply to outside known fact of 12 x 12 e.g. 15 x 6</p> <p>23 x 5</p> <p>30 x 60</p> <p>Multiply any number by 10,100 and 1000</p> <p>Multiply decimals – 1 and 2 dec places by 10 , 100 and 1000</p> <p>Factor pairs, square numbers and cubed numbers (this could be done through area or volume context)</p> <p>Using all tables facts If I know 6x 4 then what else can I use this to solve $6 \times 4 = 2 \times 12 = 1 \times 24$</p>	<p>Recall off all times tables How would you solve using know facts 150 x 3 450 x 2 650 x 500 200 x 300 10 x 0.5 40 x 800 4.5 x 2</p> <p>Multiply any number by 10,100 , 1000, 10000</p> <p>Multiply any decimal up to 3 dec places by 10 , 100 and 1000</p> <p>Square number and cubed number problems e.g $6^2 + 8^3 =$</p> <p>Missing boxes in factor pairs , cubed and square number problems. Algebra $2a + b = 20$ what could a and b be</p>

Term 3	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
<p>Multiplication and Division</p> <p>Strategies to cover: Counting on/back Arrays Known facts Doubling /halving Tests of divisibility Inverse Estimation Factor pairs Cube numbers Square numbers</p> <p>Fractions and %</p>	<p>The number 10 Number bonds for 10 Way of making 10 Counting sets of objects up to 9 Combining sets of objects to make a total of up to 10</p>	<p>Doubling numbers to and within 20 Halving even numbers within 20 1x and 2x Dividing by 1 Dividing by 2 Doubling and halving links between 10s and 5s Division of money 50p – how many 10p 20p – how many 2p 10p – how many 1p</p>	<p>Recall of 2x table and division facts including beyond 12 x 2 Recall of 5 x table and division facts including beyond 12 x 5 Recall of 10 x table and division facts including beyond 12 x 10 Recall of 3 x table and division facts Commutativity $\frac{1}{2}$ of numbers $\frac{1}{4}$ of numbers $\frac{1}{3}$ of numbers Money problems How many 5p in 65p How many 10p in 90p How many 2p in 36p</p>	<p>Recall of 2x,5x, and 10s tables and division facts including beyond 12 x Recall of 3x and 6x tables and division facts including going beyond 12 x $\frac{1}{2}$ of numbers $\frac{1}{3}$ of numbers $\frac{1}{4}$ of numbers $\frac{1}{5}$ of numbers $\frac{1}{6}$ of numbers linked to division facts</p>	<p>Recall of 2,3,4,5,6,7,8,9, 10 , 11 and 12 tables and division facts including beyond 12 x</p> <p>Use this to apply using 2,5, 3,4 and 10 x tables facts</p> <p>450 divided by 5 1000 divided by 2 400 divided by 2 600 divided by 10 480 divided by 4</p> <p>Divide any 1 or 2 digit number by 10</p> <p>All unit fractions to find non unit for $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{8}, \frac{1}{10}$</p>	<p>Recall all times tables facts and use them to apply to outside known fact of 12 x 12 e.g 200 divided by 5</p> <p>540 divided by 9</p> <p>Divide any number by 10,100 and 1000 – link to finding 10% and 1%</p> <p>Divide decimals – 1 and 2 dec places by 10 , 100 and 1000</p> <p>Could do some fraction work here $\frac{2}{5}$ of 500 $\frac{4}{10}$ of 1000 $\frac{2}{6}$ of 120</p> <p>Empty boxes for volume – revisit cube numbers e.g 6 x 5 x ? = 60</p> <p>Or area 15 x ? = 600</p>	<p>Recall all times tables facts and use them to apply to outside known fact of 12 x 12</p> <p>e.g 5400 divided by 9 1440 divided by 12 1210 divided by 11</p> <p>Divide any number by 10,100 , 1000, 10000 – link to 10%, 1%</p> <p>Divide decimals up to 3 dec places by 10 , 100 and 1000 Fractions – link to equivalent fractions</p> <p>If I know that ...$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$ then ... $\frac{2}{4} \times 600$ $\frac{3}{6} \times 600$ $\frac{3}{12} \times 120$ $\frac{2}{8} \times 120$</p> <p>Find 10% of a number Find 1% of a number Find 50% of a number Find 49%, 99%</p>

Term 4	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
<p>Addition and Subtraction then apply through measures</p> <p>Strategies to cover:</p> <p>Adjusting Counting up/back Partitioning Near doubles Rounding Known facts Use of inverse Conversion measures Bridging</p>	<p>Counting in 1s, 2s, 10s with objects Adding numbers within 10 using objects Adding lengths and masses</p>	<p>Add and subtract 1 digit numbers Number facts within 10 Apply number facts for 10 to within 20 Then apply above through money,time,mass, length, Volume and capacity</p>	<p>Adding 3 single digit numbers in a context (include missing numbers) Add a 2 digit number and a 2 digit number with no regrouping Add a 2 digit number and a 2 digit number where regrouping needed Above through measure Subtraction a 2 digit number from a 2 digit number with no exchanging Subtract a 2 digit number from a 2 digit number with exchanging Apply above through measure 56 mins + 38mins = Include empty box problems e.g $64 = ? + 28$</p>	<p>Add a 3 digit number and a 2 digit number with regrouping Add a 3 digit number and a 3 digit number where regrouping needed Above through measure Subtraction 2 digit number from a 3 digit with exchanging Subtract a 3 digit number from a 3 digit number with exchanging, or with zeros in the number Apply above through measure Include empty box problems Include numbers with small differences Include numbers such as $305 - 199$</p>	<p>Add a 4 digit number and a 3 digit number with regrouping Add a 4 digit number and a 4 digit number where regrouping needed Above through measure Subtraction a 2 or a 3 digit number from a 4 digit number with exchanging Subtract a 4 digit number from a 4 digit with exchanging Include numbers with zero Apply above through measure Include numbers with small differences Include numbers such as $4005 - 899$ Include empty boxes , can include perimeter</p>	<p>Add a 5 digit number and a 4 digit number with regrouping Add a 5 digit number and a 5 digit number where regrouping needed Above through measure Subtract a 4 or a 3 digit number from a 5 digit number with exchanging Subtract a 5 digit number from a 5 digit with exchanging include where zeros are involved Include small differences and empty boxes Apply above through measure Decimal addition and subtraction through measure Decimal addition /Subtraction within 1.0 through measure $0.6\text{ m} + 0.4\text{ m} = 1.0\text{ m}$ Extend to $7.5\text{ m} + 6.3\text{ m} =$ Could include perimeter</p>	<p>4 and 5 digit addition and subtraction with exchanging and regrouping through the context of measure e.g money,km, time,litres Addition and subtraction of decimal measures $0.67\text{m} + 0.34\text{m} =$ $9.54\text{m} + 2.03\text{m} =$ $7 - 3.4 =$ $9 - 2.7 =$ Include some measures conversion $0.5\text{ km} + 300\text{m} = ?\text{ m}$</p> <p>Include empty boxes, small differences and zeros in different places</p> <p>Could include perimeter</p> <p>Revisit x and division of fractions, decimals and %</p>

Term 5	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
<p>Fractions for KS2 (y3-5) Y6 – Mixed Bag KS1 Multiplication and Division for KS1</p> <p>Strategies to cover:</p> <p>Doubling Halving Partitioning Grouping Sharing Use of equivalent fractions Use of % Use of known facts Fraction, decimal and % equivalence</p>	<p>Count up in 1s,2s and 10s Doubling sets of objects to 10 Halving even number sets to 10 Sharing objects equally and not equally</p>	<p>Counting in 2s,5s and 10s forwards and backwards Counting in 5s using a tally chart Count in 2s,5s and 10s using pictograms Recall of 2x and 10 x tables Commutativity</p> <p>Halving and doubling numbers up to 20</p> <p>Money problems using 2p,5p and 10p</p> <p>Find $\frac{1}{2}$ Find $\frac{1}{4}$</p>	<p>Recall of 2x,5x,10x tables and division facts Use of tables and division facts outside known facts of 12 x Recall of 3 x table and division facts Commutativity Money problems using 2p,5p and 10p and combinations of mixed coins</p> <p>Empty box problems Word problems</p> <p>Halving of even numbers up to 100 Doubling odd and even numbers up to 100 $\frac{1}{2}$ of a number $\frac{2}{4}$ of a number $\frac{1}{3}$ of a number $\frac{1}{4}$ of a number $\frac{3}{4}$ of a number</p>	<p>Add and subtract unit fractions within same denominator within 1 whole Empty boxes If I know the unitary fraction then I can find others e.g if I know $\frac{1}{3}$ then I can find $\frac{2}{3}$ etc $\frac{1}{2}$ of numbers and quantities $\frac{1}{3}$ of numbers and quantities $\frac{1}{4}$ of numbers and quantities $\frac{1}{5}$ of numbers and quantities $\frac{1}{6}$ of numbers and quantities $\frac{1}{10}$ of numbers and quantities Which is more $\frac{1}{5}$ of 10 or $\frac{1}{2}$ of 10... Use above also in measures context</p>	<p>Add and subtract fractions with the same denominator $\frac{3}{5} + \frac{2}{5}$ Empty boxes If I know the unit fraction then I can find others e.g if I know $\frac{1}{7}$ then I can find $\frac{3}{7}$ etc $\frac{1}{12}$ of numbers and quantities $\frac{1}{7}$ of numbers and quantities $\frac{1}{8}$ of numbers and quantities $\frac{1}{9}$ of numbers and quantities $\frac{1}{10}$ of numbers and quantities $\frac{1}{100}$ of numbers and quantities Which is more $\frac{1}{100}$ of 100 or $\frac{1}{9}$ of 90... Use above also in measures context</p> <p>Improper fractions and simplifying them</p> <p>Comparing two fractions which is more/less</p>	<p>Add and subtract fractions with the same denominator and multiples of that denominator $\frac{3}{5} + \frac{2}{15} =$</p> <p>Use x sign when finding fraction as well as the word 'of'</p> <p>Find 10% and 10% multiples of a number such as 30% If I know 10% then 30% is ...</p>	<p>Mixed bag revision Addition and subtraction Multiplication and division Fractions – all 4 rules Decimals % Measures contexts mixed units</p>
<p>Term 6 Mixed bag - use as transition to next year</p>		<p>Place value Addition and subtraction Recall of tables and division facts and application Conversion of measures Simple fractions</p>					

