Year 3 programme of study:

Numbers and the Number System

- count from 0 in multiples of 4, 8, 50 and 100
- find 10 or 100 more or less than a given number
- recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- compare and order numbers up to 1000
- identify, represent and estimate numbers using different representations
- read and write numbers up to 1000 in numerals and in words
- solve number problems and practical problems involving these ideas.

Fractions and Decimals

- count up and down in tenths; 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
- compare and order unit fractions, and fractions with the same denominators
- Solve problems that involve all of the above.

Addition and Subtraction

- 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, using formal written methods of columnar addition and subtraction
- 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.

Multiplication and Division

- 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 and progressing to formal written methods
- solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Geometry

- draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
- 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.

Measurement

- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- measure the perimeter of simple 2-D shapes
- add and subtract amounts of money to give change, using both £ and p in practical contexts
- 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 and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight
- know the number of seconds in a minute and the number of days in each month, year and leap year
- compare durations of events

Statistics

- interpret and present data using bar charts, pictograms and tables
- Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

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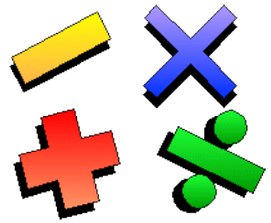


Year 3

Mathematics

Calculation Strategies

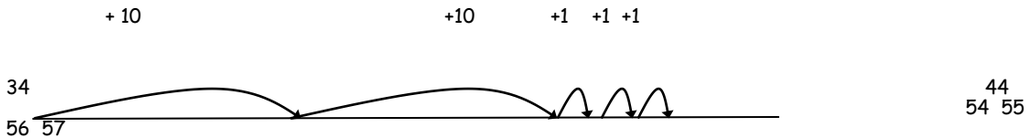
This leaflet aims to inform you of some calculation strategies that your children will be using in school. This will hopefully aid the completion of homework. However, the strategies used will be dependant on what is needed by your child and not all strategies will be necessarily be used.

ADDITION

Number Lines - Number lines and practical resources (e.g. bead strings) support calculation. Number lines should be annotated and may be accompanied by informal jottings. Count on from the largest number irrespective of the order of the calculation.

Counting on in tens and ones—The number line can be used for progressing to larger numbers, in preparation for partitioning.

34 + 23 = 57



Counting on in multiples of tens and ones—Using fewer steps by adding the ones and eventually tens in one jump (by using the known facts 4 + 3 = 7 and 30 + 20 = 50).

Partitioning—This will be used alongside number lines.

58 + 87

50 + 80 = 130

8 + 7 = 15

130 + 15 = 145

Leading to partitioned numbers being written under one another: -

50	8	
80	7	
130	15	= 145

Column addition

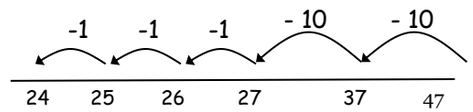
625	783	367
+ 48	+ 42	+ 85
673	825	452
1	1	1 1

SUBTRACTION

Number Lines - Number lines and practical resources (e.g. bead strings) support calculation. Number lines should be annotated and may be accompanied by informal jottings.

Children can use number lines and will be encouraged to count back in tens and ones or larger numbers, leading to fewer steps.

47 – 23 = 24



PARTITIONING

This process should be demonstrated using arrow cards to show the partitioning and base 10 materials or straw bundles to show the decomposition of the number.

	89	=	80	9
-	57		50	7
			30	2 = 32

From this the children will begin to exchange (not borrow).

71

- 46

This would be recorded by the children as:

	60		
	7 ~~0~~	^{1}1	
-	40	6	
	20	5	= 25 (progressing onto 3 digit numbers)

Column subtraction

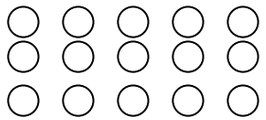
Numbers should continue to be referred to by their values and not their digits.

e.g. 140 – 80 or 14 tens – 8 tens as opposed to 14 - 8

	7	14	1
	~~8~~	~~5~~	4
-	2	8	6
	5	6	8

MULTIPLICATION

Arrays—Children should be able to model a multiplication calculation using an array



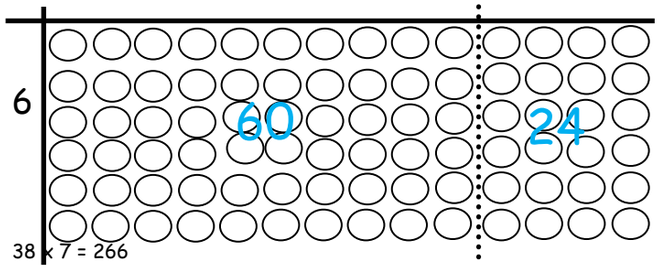
5 x 3 = 15

3 x 5 = 15

Grid method—children will use the grid method with arrays

6x 14

X	10	4



(6 x 10) + (6 x 4)

60 + 24

84

Leading to …

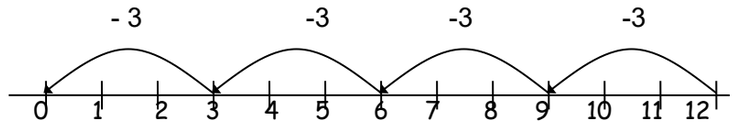
x	**30**	**8**	
7	210	56	**266**

Communativity—Children should know that 3 x 5 has the same answer as 5 x 3. This can also be shown on the number line.

DIVISION

Number Lines—repeated subtraction

12 ÷ 3 = 4



Short division—using short method also known as bus stop.

468 ÷ 3= 156

$$3\overline{)468}\quad 156$$

222 ÷ 6 = 37

$$6\overline{)222}\quad 037$$

Children will and can use arrays to support.