The New National Curriculum for Maths; guidance for calculations

KS1

Year 1

- Add and subtract one-digit and two-digit numbers to 20, including zero.
- 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.

Year 2

- Add and subtract numbers using concrete objects and pictorial representations, applying their increasing knowledge of written methods.
- Multiply and divide numbers using materials, arrays and repeated addition.

Lower KS2

Year 3

- Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
- Multiply and divide two-digit numbers by one-digit numbers using mental and progressing to formal written methods.

Year 4

- Add and subtract numbers using formal written methods with up to 4 digits.
- Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers

Upper KS2

Year 5

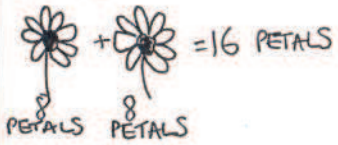
- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
- Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Year 6

- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
- Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

Representing and recording mental multiplication (Yr R/ 1)

$2 \times 8 = 16$



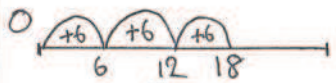
3×4


(ARRAYS)

$3 \times 4 = 12$ (NUMICON)

Jottings to support mental multiplication calculations (Yr2)

6×3



(NUMBER LINE)

Expanded written multiplication method (Yr3)

$14 \times 5 = 70$

$10 \times 5 = 50$

$4 \times 5 = 20$

('PARTITIONING')

×	10	4
5	50	20

Compact written multiplication method (Yr 4/5/6)

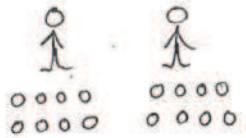
$$\begin{array}{r} 342 \\ \times \quad 7 \\ \hline 2394 \\ 2\ 1 \end{array} \qquad \begin{array}{r} 6.75 \\ \times \quad 5 \\ \hline 33.75 \\ 3\ 2 \end{array}$$

('COLUMN' METHOD)

$$\begin{array}{r} 2741 \\ \times \quad 3 \\ \hline 8223 \\ 2\ 1 \end{array} \qquad \begin{array}{r} 43 \\ \times 15 \\ \hline 215 \\ 430 \\ \hline 645 \end{array}$$

Representing and recording mental division (Yr R/ 1)

$16 \div 2$

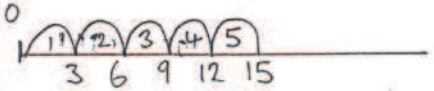


'SHARING'

'GROUPING'

Jottings to support mental division calculations (Yr2)

$15 \div 3 = 5$ "HOW MANY 3's IN 15?"



('NUMBERLINE')

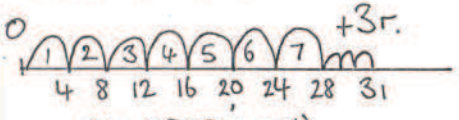

(GROUPING)

('COUNTING ON FINGERS')

Expanded written division method (Yr3)

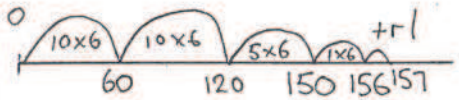
DIVISION WITH REMAINDERS

$31 \div 4 = 7 \text{ r } 3$



('NUMBERLINE')

$157 \div 6 = 26 \text{ r } 1$

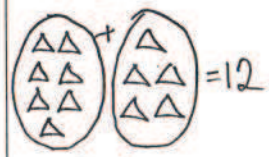
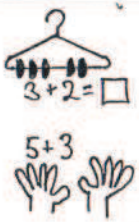
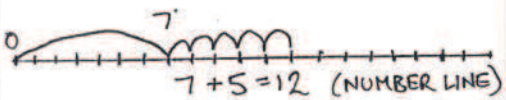
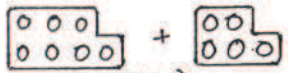
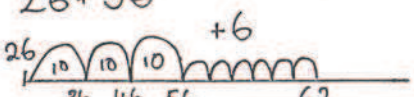
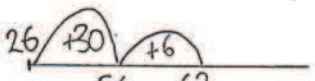
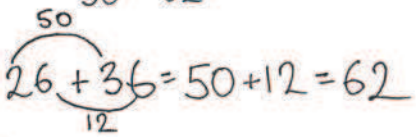
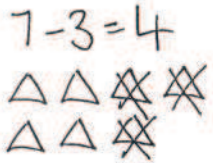
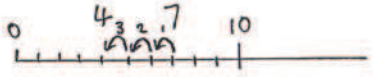
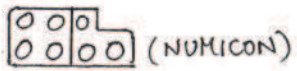
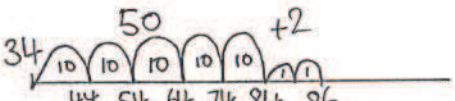
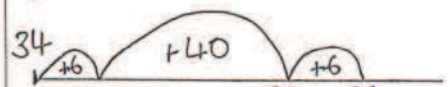


Compact written division method (Yr 4/5/6)

$$7\overline{)98}\ 14 \qquad 3\overline{)61.4}\ 20.4\text{ r}2$$

$$9\overline{)679}\ 075\text{ r}4$$

('BUS STOP' METHOD)

Representing and recording mental addition (Yr R/ 1)	Jottings to support mental addition calculations (Yr2)	Expanded written addition method (Yr3)	Compact written addition method (Yr 4/5/6)
7+5=12  =12  3+2=□ 5+3 7+5=12 (BEADSTRING)  7+5=12 (NUMBER LINE)  (NUMICON)	26+36  (NUMBERLINE)  	20+6 (PARTITIONING) 30+6 50+12=62 26+36 20+30=50 6+6=12	1789 +2642 4431 ('CARRYING' METHOD) 6.32+12.7 (0)6.32 +12.7(0) 19.02
Representing and recording mental subtraction (Yr R/ 1)	**Jottings to support mental subtraction calculations (Yr2)**	**Expanded written subtraction method (Yr3)**	**Compact written subtraction method (Yr 4/5/6)**
7-3=4  7-3=4 10-2=8  7-3=4  (NUMICON)	86-34  ('EMPTY NUMBERLINE')  (BRIDGING METHOD)	86-34 (PARTITIONING) 80+6 −30+4 50+2=52 72-27 60+12 −20+7 40+5=45	1 2 1 3 1 2 8 4 6 −1679 0667 ('DECOMPOSITION' METHOD) £ 3 1 4 7. 5 1 3 £19.37 £28.36