

FOLTE Maths

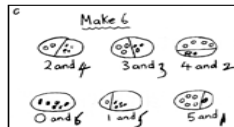
Addition Policy

Reception

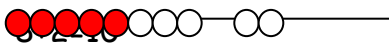
Pictures and Objects

Children are encouraged to develop a mental picture of the number system in their heads to use for calculation.

They develop ways of recording calculations using pictures (jottings), tally charts, graphs etc.



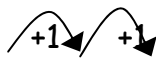
Numicon, bead strings or bead bars can be used to illustrate addition.



Numberlines

They use number lines and practical resources to support calculation and teachers demonstrate the use of the numberline to count on **above**.

$$3 + 2 = 5$$



0 1 2 3 4 5 6 7 8 9

Finding 1 more or less

Within play and other practical situations, the child finds one more than a given number.

Use songs and rhymes e.g. 10 little ducks, 10 currant buns in a baker's shop

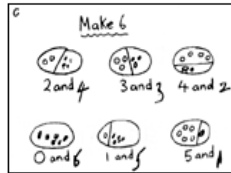
- What number comes next?
- What is one more than_?

Role play area (e.g. green grocers)

Year 1

Pictures and Objects

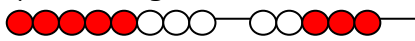
Children are encouraged to develop a mental picture of the number system in their heads to use for calculation. They develop ways of recording calculations using pictures, etc.



Children add using pictures and a variety of structured apparatus e.g. 100 square, number lines, numicon, bead strings, multi-links, counters, cuisinnaires, diennes and objects of interest to children

Bridging through 10

Bead strings or bead bars can be used to illustrate addition including **bridging** through ten by counting on 2 then counting on 3.



Number bonds

Represent number bonds within 20 using a range of structured apparatus. E.g. coins, numicon, weight etc. **Mental recall of number bonds**

$$6 + 4 = 10 \quad \square + 3 = 15 \quad 19 + \square = 20$$

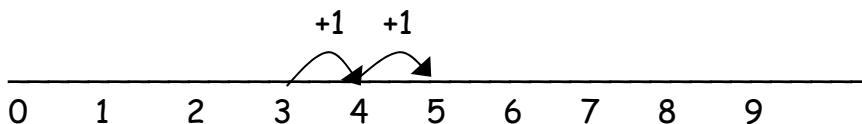
Children should know a rapid recall of number bonds NUMICON

Number lines, Number tracks, cuisinnaires

Model how to use a number line with all numbers marked. Allow pupils to physically jump on a large number line (chalk drawing, carpet tiles number line, number bibs that can be worn etc.)

They then use number lines and practical resources to support calculation and teachers *demonstrate* the use of the number line as above.

$$3 + 2 = 5$$



Children then begin to use numbered line, empty number lines and hundred squares to support their own calculations using a numbered line to count on in ones. Children record number sentences informally and formally.

Children to use hundred square to add ten e.g chanting, numicon, throwing balls, songs.

Children then begin to use empty number lines to support their own calculations using a numbered line to count on in ones.

+10



8

18

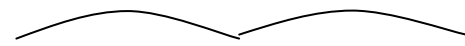
$$8 + 10 = 18$$

Use a number line to add a pair of single digit numbers to bridge through 10 e.g.

$$8 + 5 = 13$$

+2

+3



8

10

13

Represent number line calculations in a number sentence.

+1 +5



9

10

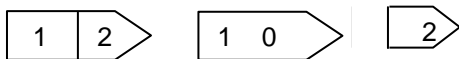
15

Shows $9 + 6 = 15$

Partitioning

Children use a range of structured apparatus to represent place value of numbers up to 20 e.g. numicon, diennes, coins, counters, multi-link

Children to then use place value cards and partitioning to add together up to 20



$$12 = 10 + 2$$

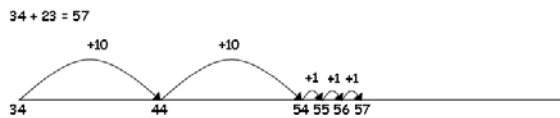
Year 2

Children will use structured apparatus, e.g number lines and practical resources to support calculation for the below

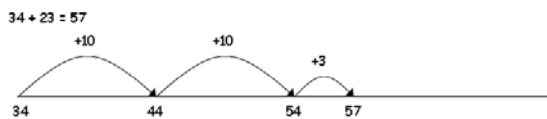
Numberlines

Children will begin to use 'empty number lines' themselves starting with the larger number and counting on.

First counting on in tens and then ones (units).

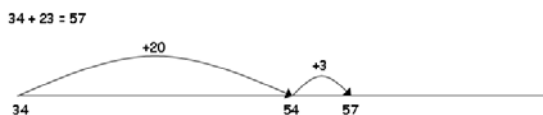
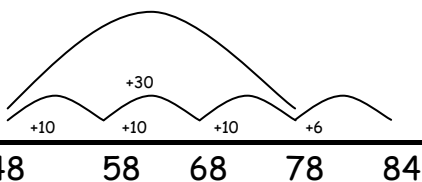


Then helping children to become more efficient by adding the units in one jump (by using the known fact $4 + 3 = 7$).

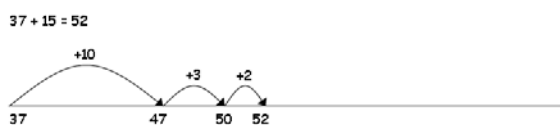


Followed by adding the tens in one jump and the units in one jump.

$$48 + 36 = 84$$



Bridging through ten can help children become more efficient.



Hundred squares are also used to support addition.

Partitioning

Children to continue to partition using structured apparatus

Children will begin to use informal pencil and paper methods (jottings) to support record and explain partial mental methods building on existing mental strategies.

e.g.

$$\begin{array}{r} 31 + 24 \\ \wedge \quad \wedge \\ 30 \quad 1 \quad 20 \quad 4 \end{array}$$

$$30 + 20 = 50$$

$$1 + 4 = 5$$

$$50 + 5 = 55$$

Or addition using partitioning and recombining

$$34 + 45 = (30 + 40) + (4 + 5) = 79$$

Add numbers by keeping the first number whole and partitioning the second number.

$$134 + 47$$

$$134 + 40 = 174$$

$$174 + 7 = 181$$

Adding three single digit numbers using concrete objects

$$8 + 7 + 2 =$$

$$\text{So } 8 + 2 = 10 + 7 = 17$$

+ = signs and missing numbers

Use mental or written methods using appropriate numbers e.g.

$$25 + 10 = \square \quad \square + 10 = 35$$

Extend to

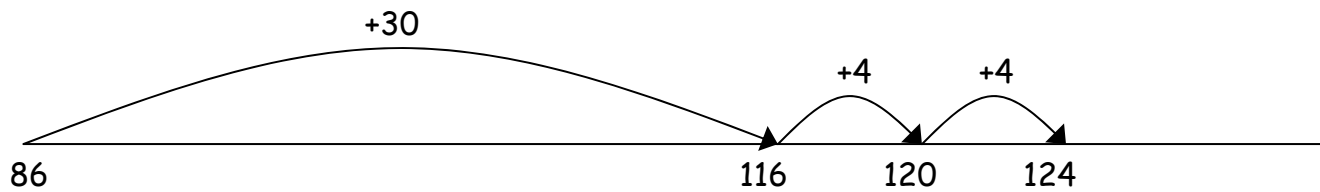
$$14 + 5 = 10 + \square$$

Year 3

Children will continue to use empty number lines with increasingly large numbers, including compensation where appropriate.

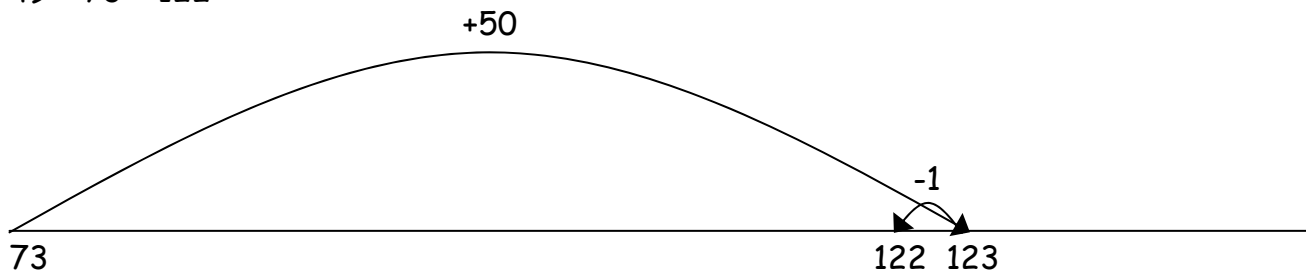
- ✓ Count on from the largest number irrespective of the order of the calculation.

$$38 + 86 = 124$$



- ✓ Compensation

$$49 + 73 = 122$$



Children will begin to use informal pencil and paper methods (jottings) to support, record and explain partial mental methods building on existing mental strategies. Add the least significant digits first.

Children will then move onto adding up to three digit numbers using the expanded method leading onto the formal written method (column addition, demonstrate alongside how the expanded method leads to the column addition)

e.g. Expanded addition

- Begin with no carrying

e.g. $42 + 27 = 69$

$$\begin{array}{r} 40 \text{ and } 2 \\ + 20 \text{ and } 7 \\ \hline 60 \text{ and } 9 = 69 \text{ (start with units first)} \end{array}$$

- Extend to carrying

- Extend to larger numbers

e.g. $375 + 67 = 442$

$$\begin{array}{r} 300 + 70 + 5 \\ + \quad \quad 60 + 7 \\ \hline 300 + 130 + 12 = 442 \end{array}$$

OR

$$\begin{array}{r} 67 \\ + 24 \\ \hline 11 \text{ (} 7 + 4 \text{)} \\ \underline{80} \text{ (} 60 + 20 \text{)} \\ \hline 91 \end{array}$$

$$\begin{array}{r} 267 \\ + 85 \\ \hline 12 \text{ (} 7 + 5 \text{)} \\ 140 \text{ (} 60 + 80 \text{)} \\ \underline{200} \\ \hline 352 \end{array}$$

From this, children will begin to carry below the line.

$$\begin{array}{r} 625 \\ + 48 \\ \hline 673 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 783 \\ + 42 \\ \hline 825 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 367 \\ + 85 \\ \hline 452 \\ \hline 11 \end{array}$$

Year 4

To add up to four digits using formal written methods.

From this, children will begin to carry below the line.

$$\begin{array}{r} 1625 \\ + \quad 48 \\ \hline 1673 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 2783 \\ + \quad 342 \\ \hline 3125 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 3367 \\ + 1385 \\ \hline 4752 \\ \hline 11 \end{array}$$

Using similar methods, children will:

- ✓ *add several numbers with different numbers of digits;*
- ✓ *begin to add up to four digit sums of money*

e.g. £13.59 + 78p =

$$\begin{array}{r} 13.59 \\ + \quad 0.78 \\ \hline \pounds 14.37 \end{array}$$

Year 5

Begin to add whole numbers with more than 4 digits, including using formal written methods.

$$\begin{array}{r} 1348 \\ + 427 \\ \hline 1775 \\ 1 \end{array}$$

Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

E.g. Karl buys a car for £1345. He fixes and cleans it and sells it for a £528 profit. How much does he sell the car for?

✓ *begin to solve problems involving numbers up to three decimal places.*

e.g. $3.276\text{kg} + 1.429\text{kg} =$

$$\begin{array}{r} 3.276 \\ + 1.429 \\ \hline 4.705 \text{ kg} \\ 1 \quad 1 \end{array}$$

Year 6

Children begin to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Use column addition to add larger numbers. Ensure the children understand the place value of each column.

$$\begin{array}{r} 678.75 \\ +376.98 \\ \hline 1055.73 \\ \hline 1111 \end{array}$$

Beth buys a pizza for £9.99, a drink for 85p and some fries for £1.45. How much does she spend in total?

A bag of potatoes weighs 3.2kg and a bag of onions weighs 723g. What is the total weight?

Children should be taught how to add decimals. They should understand that adding a decimal point and then zeros to a whole number does not change the value.

Children should solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

I have £564 and then receive £126.50 for my birthday. How much do I have altogether?

$$\begin{array}{r} 564 \quad \text{Can be written as} \quad 564.00 \quad (\text{So you're adding the zeros to show no pence.}) \\ +126.50 \quad \quad \quad +126.50 \end{array}$$

e.g. 23.59 litres + 725ml =

$$\begin{array}{r} 23.590 \\ + \quad 0.725 \\ \hline 24.315 \text{ litres} \\ \hline 11 \end{array}$$