
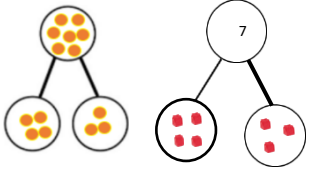
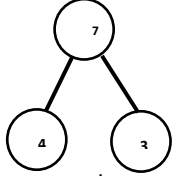



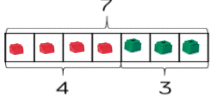
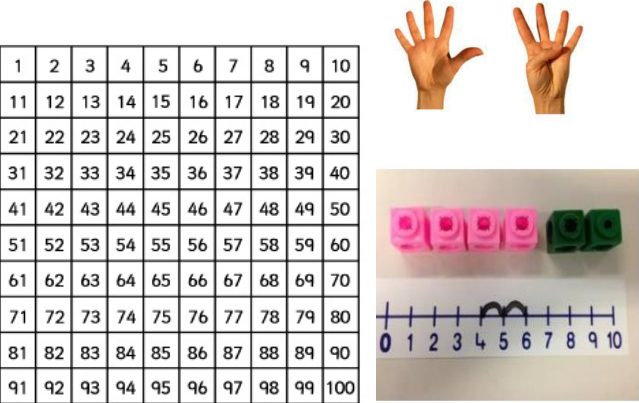

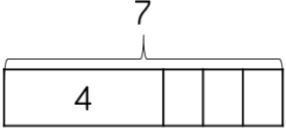


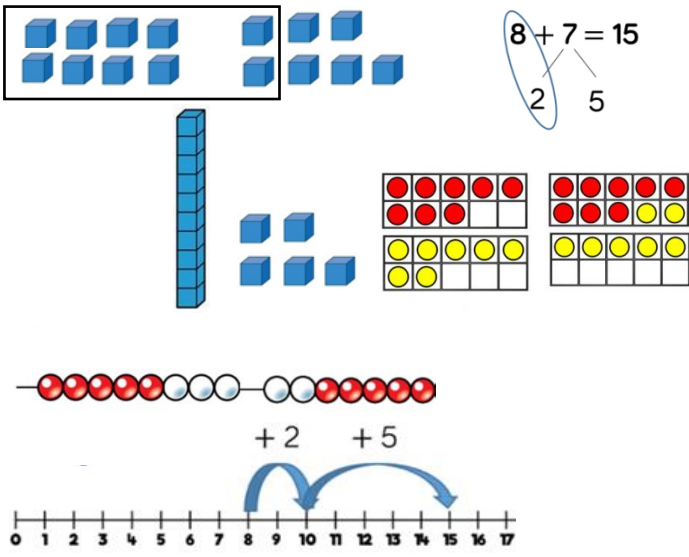
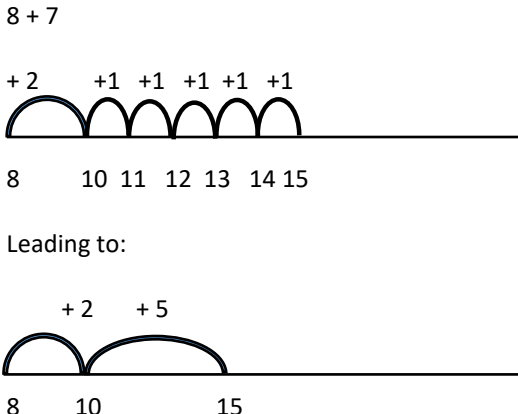
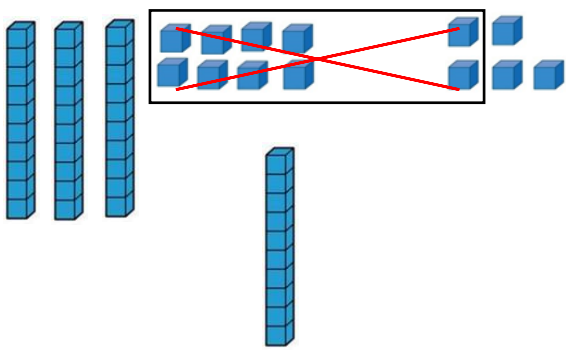
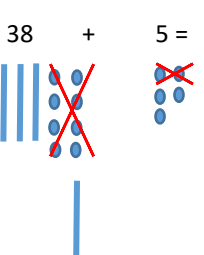


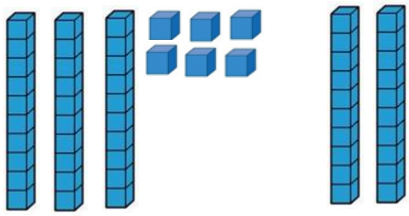
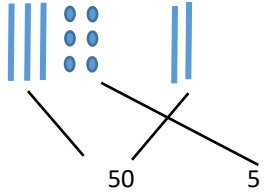
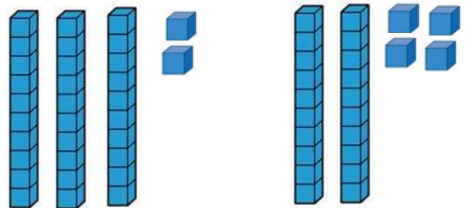
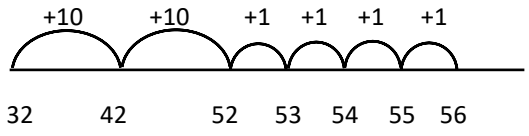
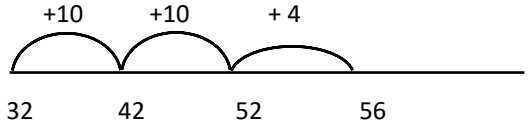
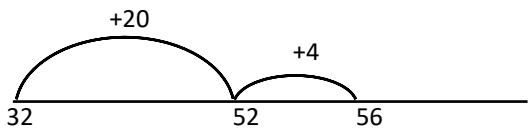
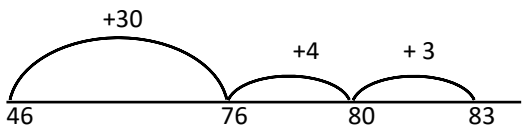
Brentfield Primary School

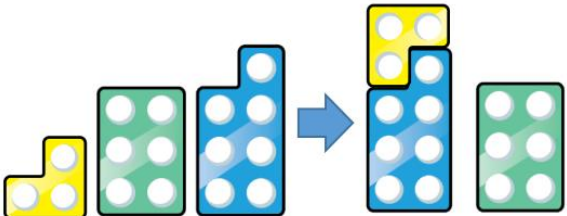
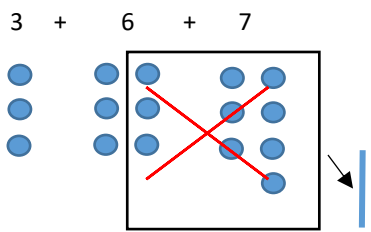
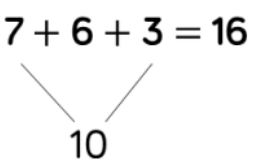
Children of Today, Champions for Tomorrow

Addition Calculation Policy

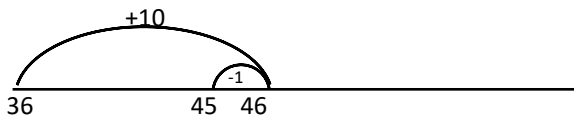
ADDITION: EYFS	Key Vocabulary: add, altogether, total, one more, part, part, whole		
Skill	Concrete	Pictorial	Abstract
Combining two parts to make a whole		Part Part Whole Model <i>Use the language:</i> 4 is a part, 3 is a part and 7 is the whole 	 <i>Can move onto:</i> $4 + 3 = 7$
Adding one more	 *use real life objects in addition to cubes, numicon and bead strings	One more than 3 is 4 	$3 + 1 = 4$
ADDITION: YEAR 1	Key Vocabulary: add, addition, more, total, altogether, count on, equal to, equals, same as		
Skill	Concrete	Pictorial	Abstract
Combining two parts to make a whole Add 1-digit numbers within 10	Concrete representation of a bar model (make links back to the part-part whole model from EY) 	Discrete bar model Use symbols to represent amounts and add two numbers together (creating a visual discrete bar model) – use two different colours to represent different amounts $4 + 3 =$  Make links to discrete bar model (above)	$4 + 3 = 7$ $7 = 4 + 3$ $7 = 3 + 4$
Adding 1-digit and 2-digit numbers to 20 Counting on from the bigger number	Start with the larger number and count on in ones to find the answer 	A number line/bar model which encourages children to count on:  Combination bar model 	$4 + 3 = 6$ $6 = 4 + 3$ $6 = 3 + 4$ Place the larger number in your head and count on the smaller number to find the answer

ADDITION YEAR 2	Key Vocabulary: add, addition, more, plus, make, sum, total, altogether, equal to, same as, part part whole, count on, partition, regroup, exchange, columns, tens, ones		
<p>Adding 1-digit numbers that cross 10</p> <p>When adding one digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. Different manipulatives can be used to represent this exchange</p> <p>Use concrete resources alongside number lines to support children in understanding how to partition their jumps.</p>	<p>Use diens/number line – “stop and swap”</p> <p>$8 + 7 = 15$</p>  <p>The image shows several representations of the equation 8 + 7 = 15. At the top left, there are blue blocks representing 8 (two rows of four) and 7 (two rows of three). Below this is a vertical diens of 10 blue blocks, with 3 more blue blocks to its right. To the right of the diens is a diagram showing 8 + 7 = 15 with a circle around the 8 and an arrow pointing to a 2, and another arrow pointing from the 7 to a 5. Below this are two ten-frames: the first has 8 red dots and 2 yellow dots, the second has 5 red dots and 5 yellow dots. At the bottom, a number line from 0 to 17 shows a starting point at 8, a jump of 2 to 10, and a jump of 5 to 15.</p>	<p>Draw a number line to support the calculation</p> <p>$8 + 7$</p>  <p>The image shows two number lines. The first is for 8 + 7, starting at 8 and making jumps of +2, +1, +1, +1, +1, +1 to reach 15. The second is for 8 + 7, starting at 8, making a jump of +2 to 10, and then a jump of +5 to 15. Below the second number line, it says "Leading to:" followed by the same two jumps.</p>	<p>$8 + 7 = 8 + 2 = 10$ $10 + 5 = 15$</p>
<p>Adding 2-digit numbers and ones</p> <p>When adding single digits to a two-digit number, children should be taught to count on from the larger number.</p> <p>They should also apply their knowledge of number bonds to add more efficiently.</p>	<p>$38 + 5$</p>  <p>The image shows blue blocks representing 38 (three tens rods and eight ones units) and 5 (five ones units). A red box highlights the 8 ones units and 5 ones units, with red lines showing them being exchanged for 1 ten rod and 3 ones units. Below this is a single ten rod and 3 ones units. At the bottom, it says "Continue to reinforce the importance of ten ones equalling one ten using manipulatives to represent the exchange."</p>	<p>Children to represent the concrete using symbols e.g. dots for ones and lines for tens.</p> <p>$38 + 5 = 38$</p>  <p>The image shows a symbolic representation of 38 + 5. It consists of 3 vertical lines (tens) and 8 dots (ones) for 38, and 5 dots for 5. A red 'X' is drawn over the 8 dots and the 5 dots, and another red 'X' is drawn over the 3 lines. Below this is a blank number line with a starting point at 38, a jump of +2 to 40, and a jump of +3 to 43. Below the number line, it says "*for those who require, second jumps can be in ones".</p>	<p>$38 + 5 =$ $38 + 2 = 40$ $40 + 3 = 43$</p>

<p>Adding 2-digit numbers and tens</p>	<p>36 + 20</p>  <p>Teach children to count the tens and then the ones Make explicit that the ones digit does not change</p>	<p>Children to represent the concrete using symbols e.g. dots for ones and lines for tens.</p> 	$36 + 20$ $30 + 20 = 50$ $50 + 6 = 56$
<p>Add two 2-digit numbers (USING PARTITIONING)</p>	<p>32 + 24</p> 	<p>Count on from the largest number and partition the smaller number</p>  <p>32 42 52 53 54 55 56</p> <p>Leading to:</p>  <p>32 42 52 56</p> <p>Leading to:</p>  <p>32 52 56</p> <p>*demonstrate bridging 10 strategy where appropriate e.g. 46 + 37</p>  <p>46 76 80 83</p>	$32 + 24 =$ $32 + 10 + 10 = 52$ $52 + 1 + 1 + 1 + 1 = 56$ $32 + 24 =$ $32 + 10 + 10 = 52$ $52 + 4 = 56$ $32 + 24 =$ $32 + 20 = 52$ $52 + 4 = 56$ $46 + 30 = 76$ $76 + 4 = 80$ $80 + 3 = 83$


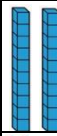

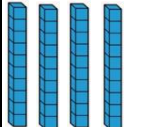


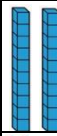

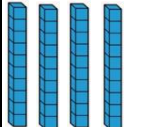












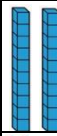

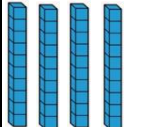






<p>Adding three 1-digit numbers</p> <p>When adding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently.</p>	<p>$3 + 6 + 7 = 16$</p> 	<p>Children to represent the concrete using symbols e.g. dots for ones and lines for tens.</p> <p>$3 + 6 + 7$</p> 	<p>$7 + 6 + 3 = 16$</p> 
---	---	--	--

ADDITION: YEAR 2/3

<p>Rounding and adjusting (when adding near multiples of 10)</p>		<p>$36 + 9$</p> 	<p>$36 + 9 =$ $36 + 10 = 46$ $46 - 1 = 45$</p>
---	--	--	---

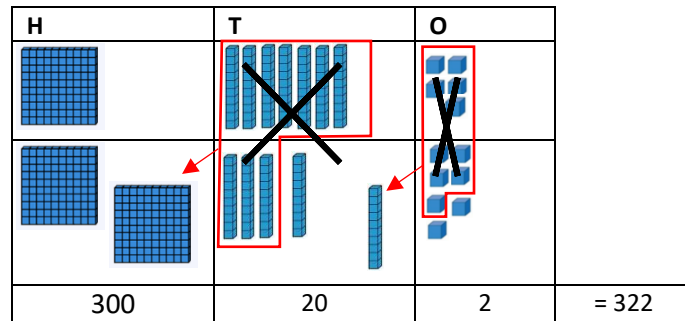
ADDITION: YEAR 3

Key Vocabulary: add, addition, more, plus, make, sum, total, altogether, count on, equal to, same as, tens, ones, hundreds, regroup, exchange, expanded method, column method

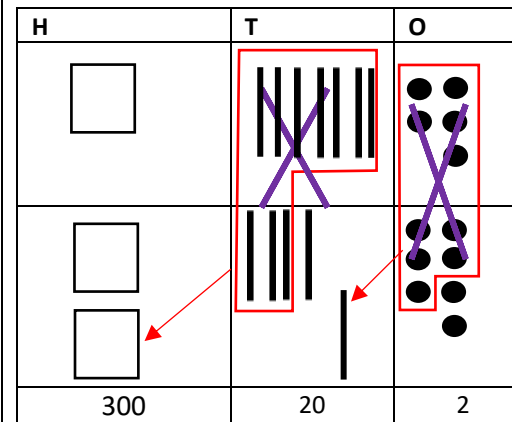
<p>Skill</p>	<p>Concrete</p>	<p>Pictorial</p>	<p>Abstract</p>																								
<p>Add numbers with up to three digits (no regrouping)</p> <p>Base 10 are the most effective manipulatives when adding numbers with up to three digits.</p> <p>Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method</p>	<p>$125 + 43$</p> <p>Place value grid (no regrouping)</p> <p>Add together the ones, then the tens, then hundreds</p> <table border="1" data-bbox="421 997 974 1348"> <thead> <tr> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>100</td> <td>60</td> <td>8</td> </tr> </tbody> </table> <p>= 168</p>	H	T	O							100	60	8	<p>Children to represent the concrete using symbols e.g. square for hundred, lines for tens and dots for ones.</p> <table border="1" data-bbox="1142 1029 1691 1380"> <thead> <tr> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>100</td> <td>60</td> <td>8</td> </tr> </tbody> </table> <p>= 168</p>	H	T	O							100	60	8	<p><u>Expanded column method</u></p> <p>$100 + 20 + 5$ $40 + 3$</p> <hr/> <p>$100 + 60 + 8 = 168$</p>
H	T	O																									
																											
																											
100	60	8																									
H	T	O																									
																											
																											
100	60	8																									

Add numbers with up to three digits (regrouping)

175 + 147 =
Place value grid (regrouping)
 Add together the ones, then the tens, then hundreds



Children to represent the concrete using symbols e.g. square for hundred, lines for tens and dots for ones.



Expanded column method

$$\begin{array}{r}
 100 + 70 + 5 \\
 100 + 40 + 7 \\
 \hline
 300 + 20 + 2 \\
 \hline
 100 \quad 10
 \end{array}$$

As children have a secure understanding of why regrouping occurs move towards the formal method. Some year 3 children may be ready for this towards the end of the year.

Formal column method

$$\begin{array}{r}
 175 \\
 + 147 \\
 \hline
 322 \\
 \hline
 11
 \end{array}$$

ADDITION: YEAR 4

Key Vocabulary: add, addition, more, plus, make, sum, total, altogether, count on, equal to, same as, tens, ones, hundreds, thousands, regroup, exchange, column method

Skill

Concrete

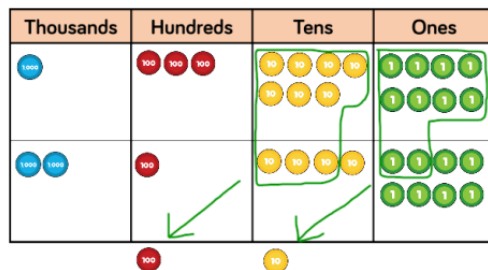
Pictorial

Abstract

Add numbers with up to four digits

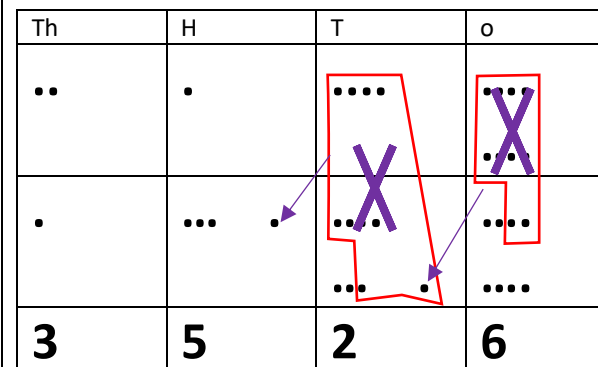
See year 3 for concrete example using base 10
 Place value counters with a place value chart

2148 + 1378 = 35



Base 10 and place value continue to be the most effective manipulatives when adding numbers with up to four digits.

Children to represent the concrete using dots



Formal Column Method

$$\begin{array}{r}
 2148 \\
 + 1378 \\
 \hline
 3526 \\
 \hline
 11
 \end{array}$$

ADDITION: YEAR 5/6 **Key Vocabulary:** add, addition, more, plus, make, sum, total, altogether, count on, equal to, same as, tens, ones, hundreds, thousands, ten thousands, hundred thousands, millions, tenths, hundredths, thousandths, decimal point, decimal place

Skill **Concrete** **Pictorial** **Abstract**

Add numbers with more than four digits
Place value counters are the most effective concrete resource to use when adding numbers with more than 4 digits.

As Year 4 'Add numbers with up to four digits'.
Place value chart to include: HTh, TTh, Th, h, T, O
At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.

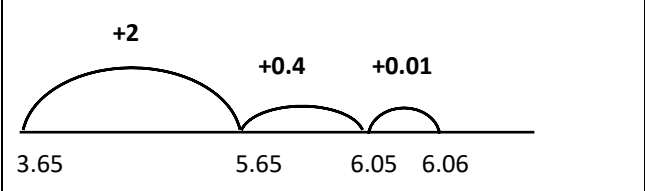
Add with up to 3 decimal places
Place value counters on a place value grid are the most effective manipulatives when adding decimals. However, at this stage, children should be encouraged to work in the abstract.

$3.65 + 2.41 = 6.06$

$27.5 + 6.28 = 33.78$

Place value charts can be drawn in books with circles to represent counters.

Number lines can also be used to support decimal calculation:



Formal column method

$$\begin{array}{r} 3.65 \\ + 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$$

Teach children to use 0 as a place holder where required

$$\begin{array}{r} 27.50 \\ + 6.28 \\ \hline 33.78 \\ \hline 1 \end{array}$$

Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.