

# Heather Primary Calculation Policy

This calculation policy has been created to meet the expectations of the new national curriculum and is linked with the White Rose Scheme of Work and Calculation Policy. Most importantly, it is designed to meet the needs of our children at Heather Primary School.



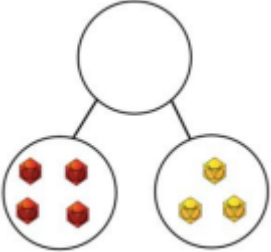

With our focus on 'Mastery in Maths' for all, we believe that the development in skill from concrete to pictorial and then abstract gives our children a deep understanding of the four operations.

## Addition

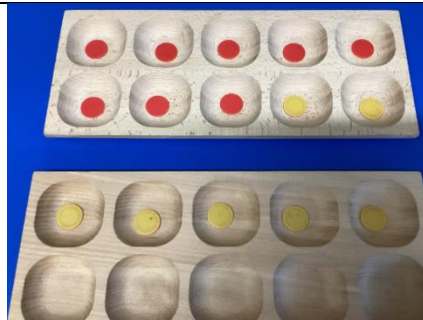
### Progression in Addition Overview

EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Know the composition of 2, 3, 4 and 5	Add 1 digit numbers within ten	Add three 1 digit numbers together	Add numbers with up to 3 digits	Add numbers with up to 4 digits	Add numbers with more than 4 digits	
Know the composition of 6, 7, 8, 9 and 10	Add 1 and 2 digit numbers within 20	Add 1 and 2 digit numbers within 100			Add numbers with up to 3 decimal places	
Know that numbers up to 20 are composed of ten and a part of the next ten.		Add two 2 digit numbers within 100				

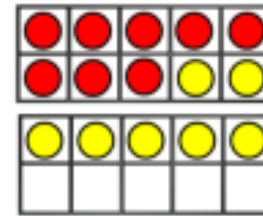
Vocabulary: part, whole, add, plus, sum, more than, increase, combine, total, digit, number, integer, exchange, altogether, equal to, same as, addend, commutative

Objective	Concrete	Pictorial	Abstract
<p>Know the composition of single digit numbers using a part part whole model (aggregation).</p> <p>Add single digit numbers up to ten (augmentation).</p>	 <div data-bbox="797 536 1155 740" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Add together single digit numbers using cubes either in groups or as a bar.</p> </div> 	 <div data-bbox="1234 619 1547 783" style="text-align: center;"> <p>7</p>  </div> <div data-bbox="1211 820 1520 1056" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Build understanding of part part whole model to move into abstract:</p> <p>part + part = whole</p> </div>	$4 + 3 = 7$

Add two one digit numbers to bridge ten (regrouping to make 10)



Start with the bigger number and use the smaller number to make ten.

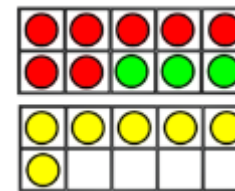
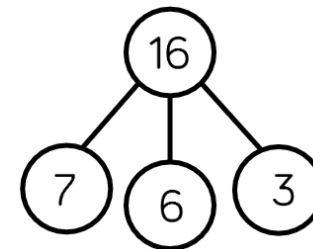


Children to draw the tens frames in their books and group to make ten. Use different colours to show the separate numbers.

$$8 + 7 = 15$$

Children initially show the partitioning of the smaller number until competent partitioning mentally.

Add three single digits (when adding 3 single digits, support children to look for number bonds to ten)

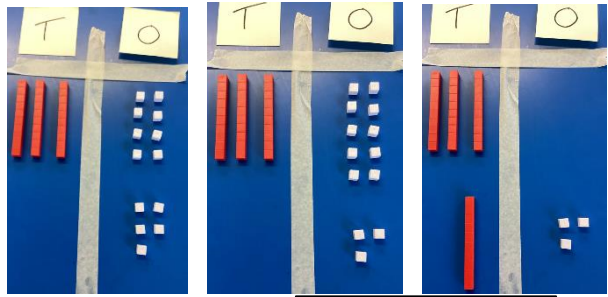


$$7 + 6 + 3 = 16$$

Following on from making ten, children make ten (if possible) with any of the numbers (change the order if needed – commutative law). Then, add on third number.

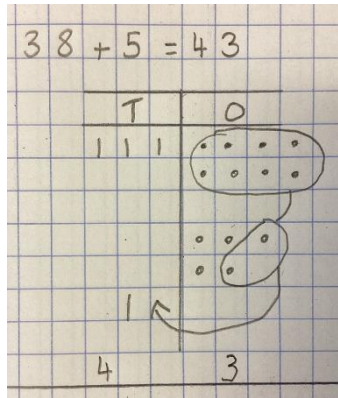
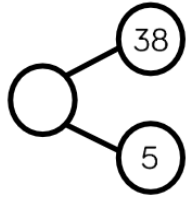
Children draw tens frames in books showing where numbers have been recombined to make ten where possible - different colours for different numbers.

Adding TO and O (using base 10 + regrouping to make ten)

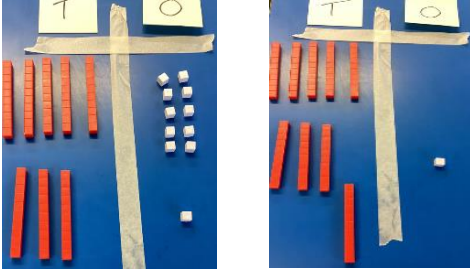
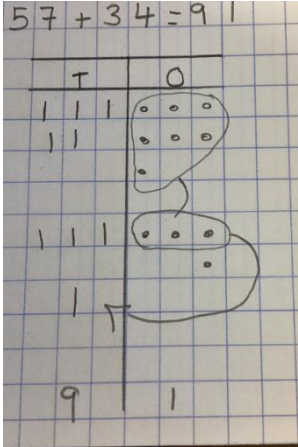


Start in the ones, look for ways to make ten using knowledge of number bonds.

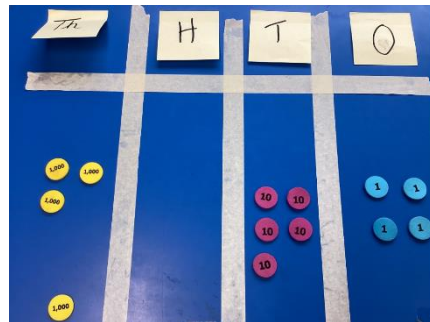
Encourage children to explain why it's important to start in the ones – in case we need to exchange



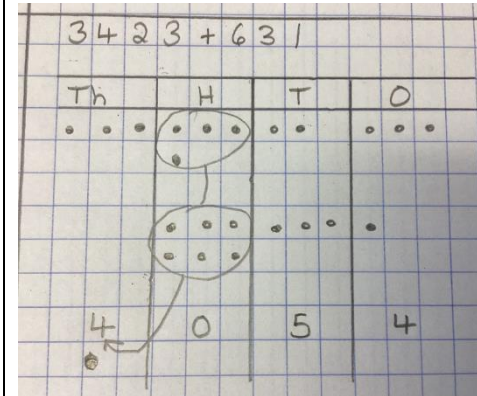
$$\begin{array}{r}
 38 \\
 + 5 \\
 \hline
 43 \\
 1
 \end{array}$$

		<p>Children organise their work carefully in columns using one image per square to prevent miscalculation. Group to make ten.</p>	<p>When children are exchanging, ensure they understand that the column determines the value – they are carrying over ten not one.</p>				
<p>Adding TO and TO (using base 10 - continue to develop understanding of partitioning and place value and use this to support addition. Begin with no exchanging)</p>	<div style="display: flex; justify-content: space-around;">  </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div data-bbox="526 986 808 1289"> <p>Start in the ones, look for ways to make ten using knowledge of number bonds and move up in order of place value size.</p> </div> <div data-bbox="831 986 1113 1289"> <p>Look for ways to make one hundred when in tens column.</p> </div> </div>	<table border="1" style="margin-left: auto; margin-right: auto; text-align: center;"> <tr><td colspan="2">?</td></tr> <tr><td>57</td><td>34</td></tr> </table> 	?		57	34	$  \begin{array}{r}  57 \\  + 34 \\  \hline  91 \\  1  \end{array}  $
?							
57	34						

Column method for addition (moving from base 10 to PV counters when children have a secure understanding of place value. Begin with no exchange)



?	
3423	631



Continue to stress the importance of aligning numbers with the correct place value.

When adding decimals, always start with the smallest place value.

$$\begin{array}{r} 3423 \\ + 631 \\ \hline 4054 \\ 1 \end{array}$$

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