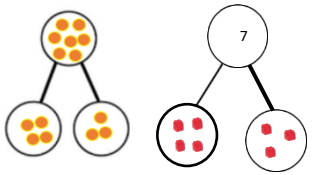
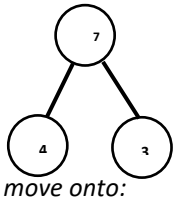
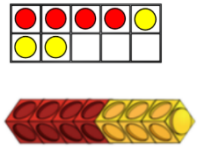
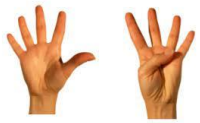
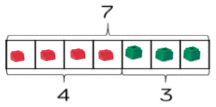
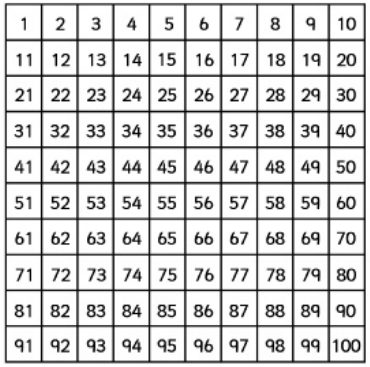
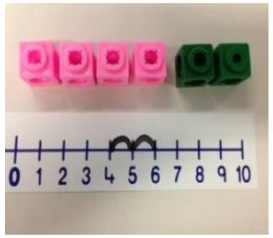
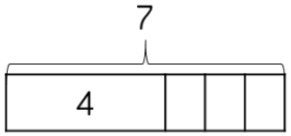
Brentfield Primary School

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<br>*Use the language:*<br>*4 is a part,*<br>*3 is a part*<br>*and*<br>*7 is the whole*<br>   |  <br>*Can move onto:*<br>*4 + 3 = 7* |
| **Adding one more** | <br>*use real life objects in addition to cubes, numicon and bead strings | One more than 3 is 4<br> | 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**<br><br>**Add 1-digit numbers within 10** | Concrete representation of a bar model (make links back to the part-part whole model from EY)<br>   | Discrete bar model<br>Use symbols to represent amounts and add two numbers together (creating a visual discrete bar model) – use two different colours to represent different amounts<br>4 + 3 =<br>• • • •  • • •<br>  <br>Make links to discrete bar model (above) | 4 + 3 = 7<br>7 = 4 + 3<br>7 = 3 + 4 |
| **Adding 1-digit and 2-digit numbers to 20**<br><br>**Counting on from the bigger number** | Start with the larger number and count on in ones to find the answer<br>    | A number line/bar model which encourages children to count on:<br> <br>Combination bar model<br>   | 4 + 3 = 6<br>6 = 4 + 3<br>6 = 3 + 4<br><br>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 | | |
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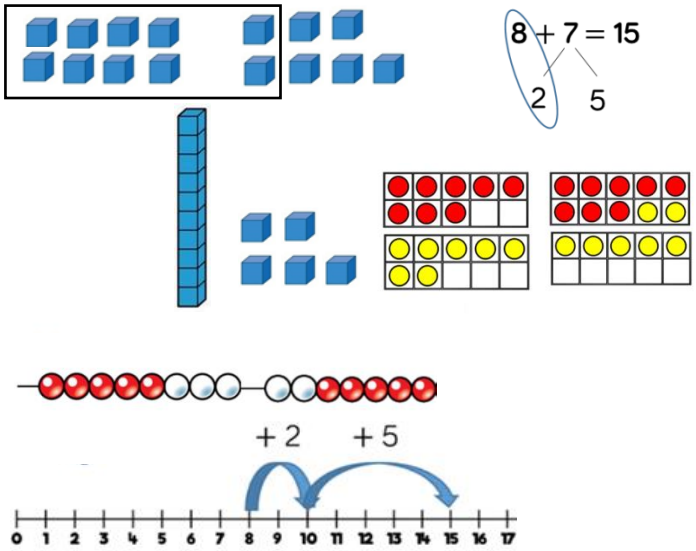
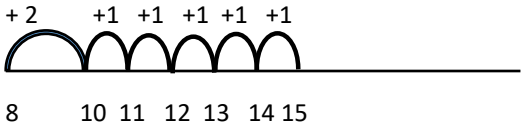
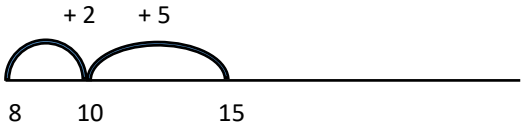
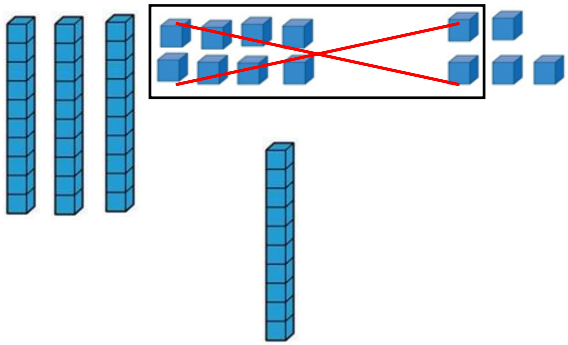
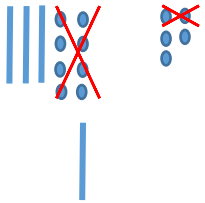
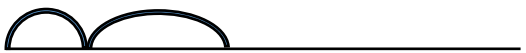
| **Adding 1-digit numbers that cross 10**<br><br>When adding one digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. Different manipulatives can be used to represent this exchange<br><br>Use concrete resources alongside number lines to support children in understanding how to partition their jumps. | Use diens/number line – "stop and swap"<br>8 + 7 = 15<br>  <br><br><br> | Draw a number line to support the calculation<br><br>8 + 7<br>  <br><br>Leading to:<br>  <br> | 8 + 7 = 8 +2 = 10<br>10 + 5 = 15 |
| **Adding 2-digit numbers and ones**<br><br>When adding single digits to a two-digit number, children should be taught to count on from the larger number.<br><br>They should also apply their knowledge of number bonds to add more efficiently. | **38 + 5**<br>  <br>Continue to reinforce the importance of ten ones equalling one ten using manipulatives to represent the exhange. | Children to represent the concrete using symbols e.g. dots for ones and lines for tens.<br><br>38 + 5 = 38<br>  <br>Use the blank number line and bridging 10 method<br><br>+2 +3<br>  <br>38 40 43<br>*for those who require, second jumps can be in ones | 38 + 5 =<br>38 + 2 = 40<br>40 + 3 = 43 |

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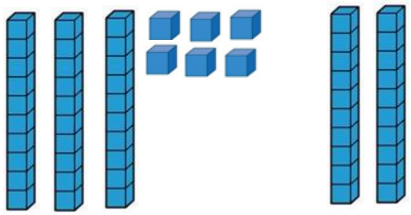
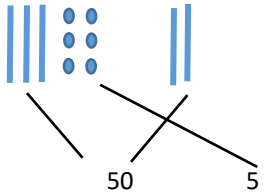
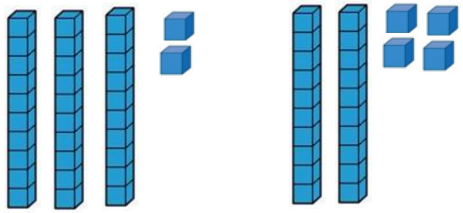
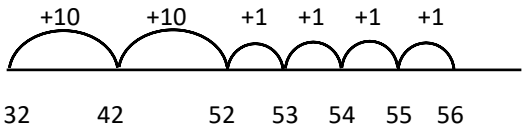
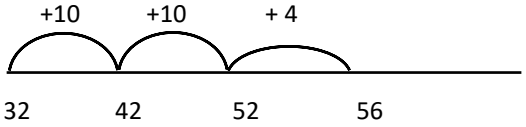
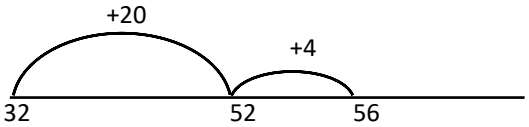
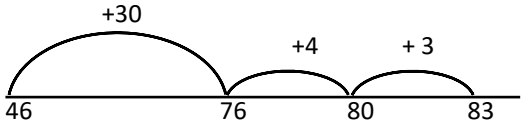
| **Adding 2-digit numbers and tens** | **36 + 20**<br>  <br>Teach children to count the tens and then the ones<br>Make explicit that the ones digit does not change | Children to represent the concrete using symbols e.g. dots for ones and lines for tens.<br>  | 36 + 20<br>30 + 20 = 50<br>50 + 6 = 56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

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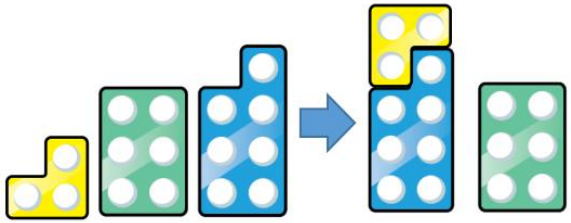
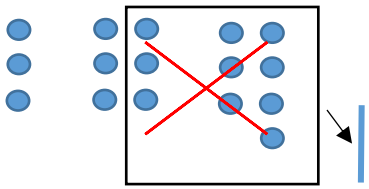
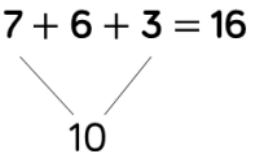
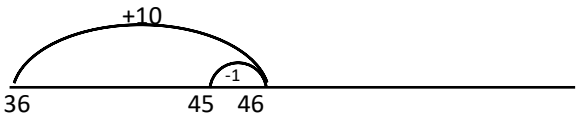
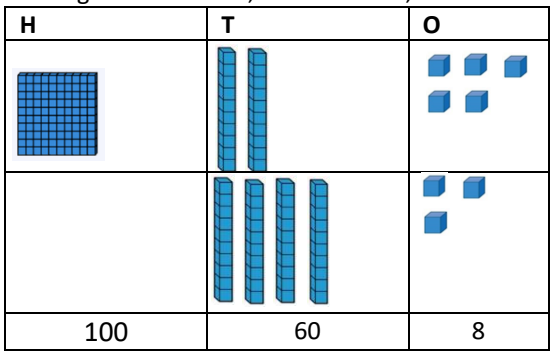
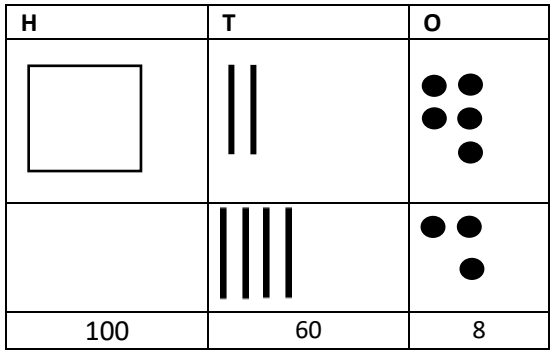
| **Adding three 1-digit numbers**<br><br>When adding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently. | 3 + 6 + 7 = 16<br>  | Children to represent the concrete using symbols e.g. dots for ones and lines for tens.<br>3 + 6 + 7<br>  |  |
| **ADDITION: YEAR 2/3** | | | |
| **Rounding and adjusting (when adding near multiples of 10)** | | 36 + 9<br>  | 36 + 9 =<br>36 + 10 = 46<br>46 – 1 = 45 |
| **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 | | |
| **Skill** | **Concrete** | **Pictorial** | **Abstract** |
| **Add numbers with up to three digits (no regrouping)**<br><br>Base 10 are the most effective manipulatives when adding numbers with up to three digits.<br><br>Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method | **125 + 43**<br><u>Place value grid (no regrouping)</u><br>Add together the ones, then the tens, then hundreds<br>  <br>= 168 | Children to represent the concrete using symbols e.g. square for hundered, lines for tens and dots for ones.<br>  <br>= 16 | <u>Expanded column method</u><br><br>100 + 20 + 5<br>40 + 3<br>100 + 60 + 8 = 168 |

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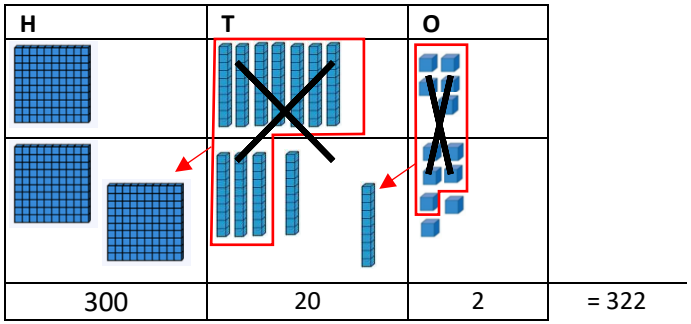
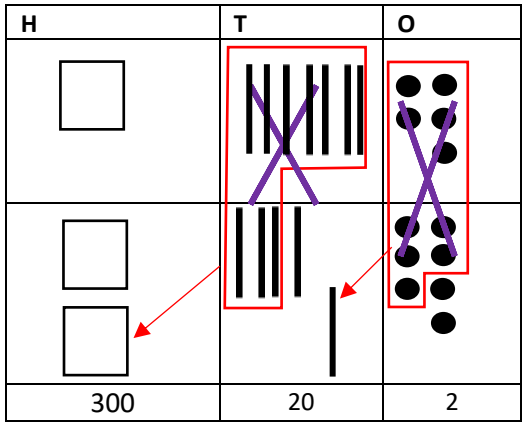
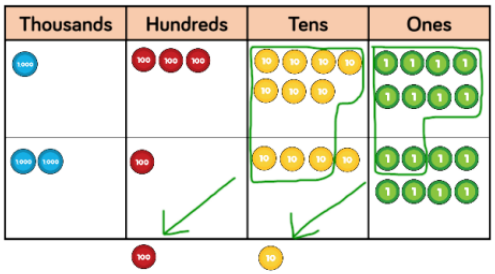
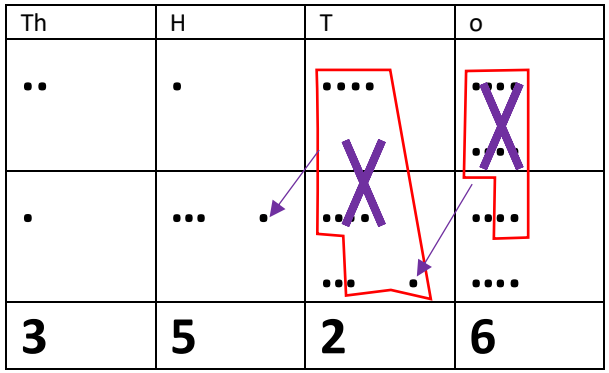
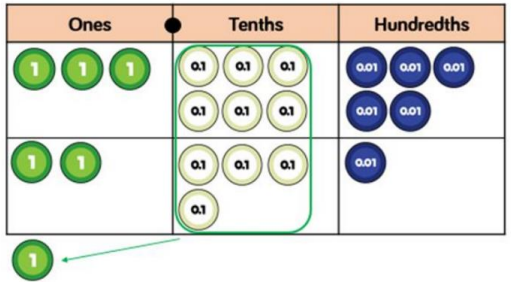
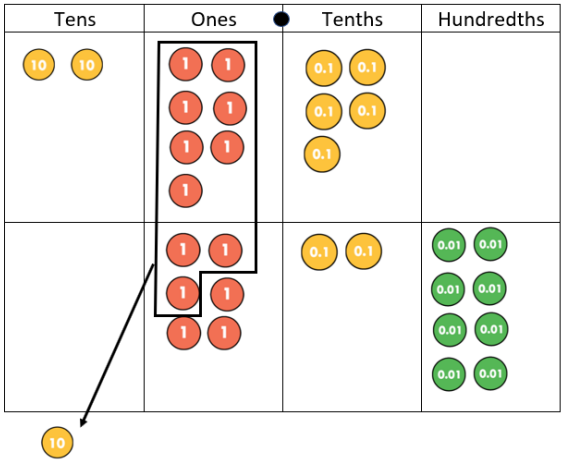
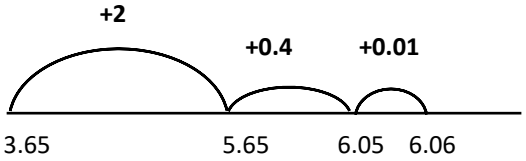
| **Add numbers with up to three digits (regrouping)** | **175 + 147 =**<br><u>Place value grid (regrouping)</u><br>Add together the ones, then the tens, then hundreds<br>  <br> | Children to represent the concrete using symbols e.g. square for hundered, lines for tens and dots for ones.<br>  <br> | <u>Expanded column method</u><br>100 + 70 + 5<br>100 + 40 + 7<br>300 + 20 + 2<br>100 10 |
| *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.* | | | <u>Formal column method</u><br>1 7 5<br>+ 1 4 7<br>3 2 2<br>1 1 |
| **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**<br><br>Base 10 and place value continue to be the most effective manipulatives when adding numbers with up to four digits. | See year 3 for concrete example using base 10<br>Place value counters with a place value chart<br><br>2148 + 1378 = 35<br>  <br> | Children to represent the concrete using dots<br>  <br> | <u>Formal Column Method</u><br>2 1 4 8<br>+ 1 3 7 8<br>3 5 2 6<br>1 1 |

| 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**<br>Place value counters are the most effective concrete resource to use when adding numbers with more than 4 digits. | <u>As Year 4 'Add numbers with up to four digits'.</u><br>Place value chart to include: HTh, TTh, Th, h, T, O<br>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**<br>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.<br><br>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. | **3.65 + 2.41 = 6.06**<br>  <br><br>**27.5 + 6.28 = 33.78**<br>  <br> | Place value charts can be drawn in books with circles to represent counters.<br><br>Number lines can also be used to support decimal calculation:<br>  <br> | Formal column method<br>**3.65**<br>**+ 2.41**<br>6.06<br>1<br><br>Teach children to use 0 as a place holder where required<br><br>**27.50**<br>**+ 6.28**<br>33.78<br>1 |