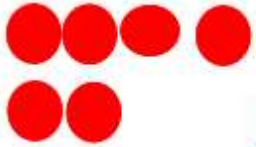
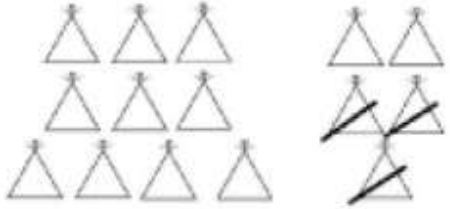
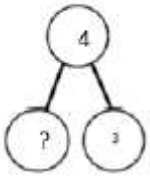
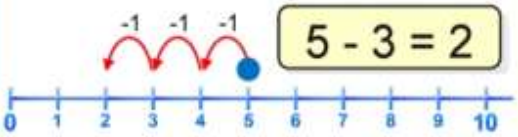
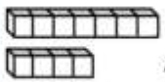
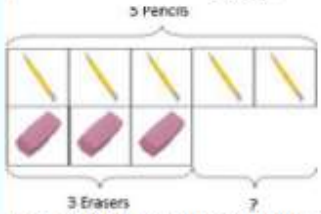
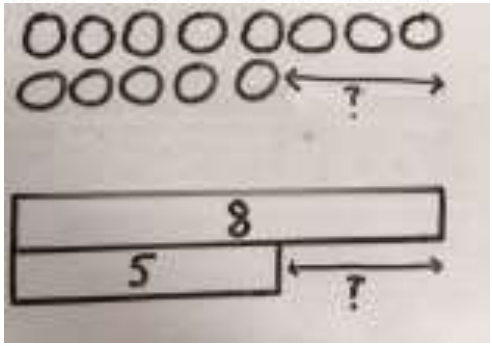
# Uphill Primary School – Mathematics Calculation Policy (CPA approach)

# Subtraction

| Objective & Strategy | Concrete | Pictorial | Abstract |
|---|---|---|---|
| Taking away ones. | Use physical objects, counters , cubes etc to show how objects can be taken away.<br>  <br>6—4 = 2<br>  <br>4—2 = 2 |  <br>15 – 3 = 12<br>Cross out drawn objects to show what has been taken away. | 7—4 = 3<br>  <br>16—9 =  |
| Counting back |  <br>Move objects away from the group, counting backwards.<br>  <br>Move the beads along the bead string as you count backwards. |  <br><br>Count back in ones using a number line. | Put 13 in your head, count back 4. What number are you at? |
| Find the Difference | Compare objects and amounts<br>  <br>'Seven is 3 more than four'<br>'I am 2 years older than my sister'<br>  <br><br>Lay objects to represent bar model. |  <br> | Find the difference between 8 and 5.<br>8 – 5, the difference is ☐<br>Children to explore why 9 - 6 = 8 – 5 = 7 – 4 have the same difference. |

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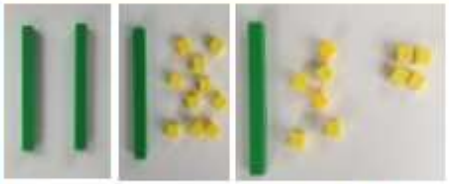
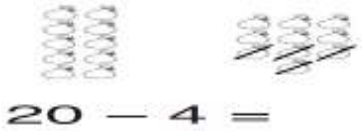
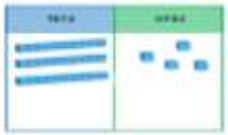
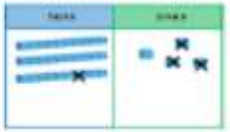
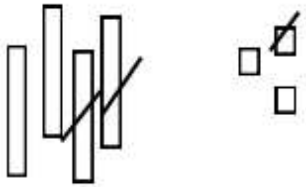
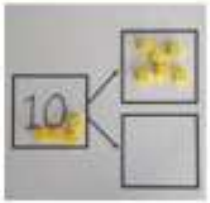
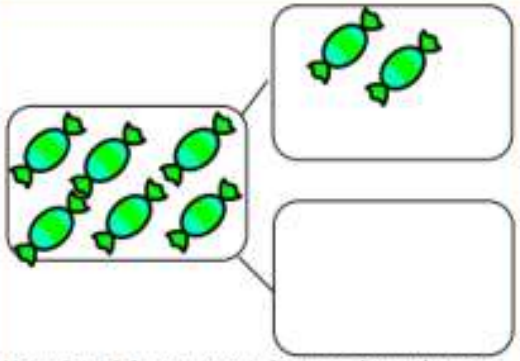
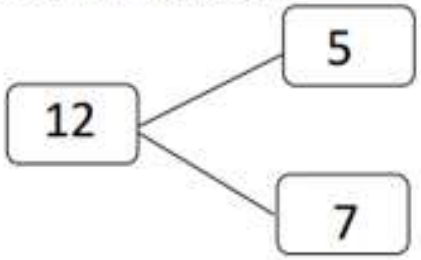
| Regroup a ten into ten ones |  Use a PV chart to show how to change a ten into ten ones, use the term 'take and make' |  20 — 4 = | 20—4 = 16 |
| Partitioning to subtract without regrouping. *'Friendly numbers'* | 34—13 = 21    Use Dienes to show how to partition the number when subtracting without regrouping. | Children draw representations of Dienes and cross off.  43—21 = 22 | 43—21 = 22 |
| **Represent and use number bonds and related subtraction facts within 20** Part Part Whole model |  Link to addition. Use PPW model to model the inverse. If 10 is the whole and 6 is one of the arts, what s the other part? 10—6 = 4 |  Use pictorial representations to show the part. | Move to using numbers within the part whole model.   |

# Uphill Primary School – Mathematics Calculation Policy (CPA approach)

# Subtraction

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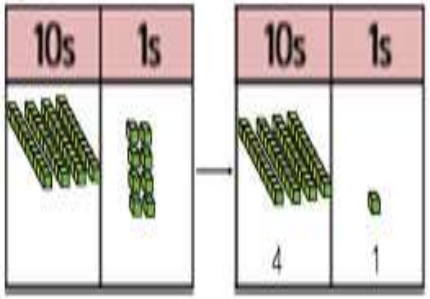
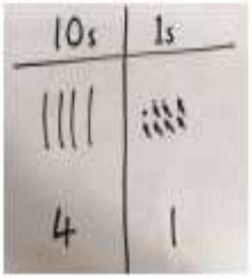
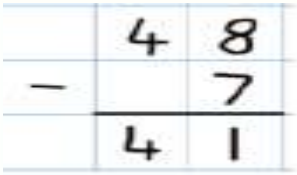
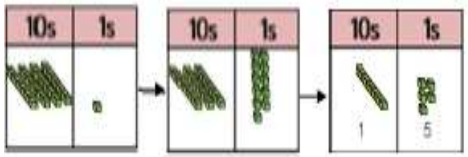
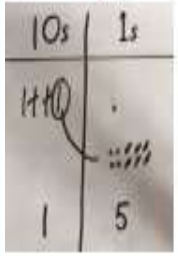
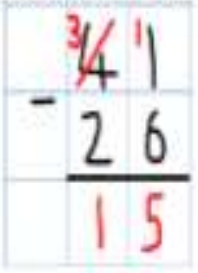
| Column subtraction without regrouping (friendly numbers) | Column method using base 10.<br>48-7<br>  | Children to represent the base 10 pictorially.<br>  |  <br>Intermediate step may be needed to lead to clear subtraction under-standing.<br>  |
| Column subtraction with regrouping | Column method using base 10 and having to exchange.<br>41 - 26<br>  <br>Begin with base 10 or Numicon. Move to pv counters, modelling the exchange of a ten into tten ones. Use the phrase 'take and make' for exchange. | Represent the base 10 pictorially, remembering to show the exchange.<br>  <br>Children may draw base ten or PV counters and cross off. | Formal column method. Children must understand that when they have exchanged the 10 they still have 41 because 41 = 30 + 11.<br>  |

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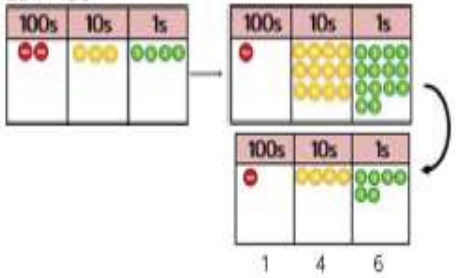
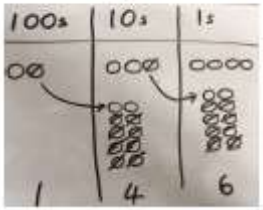
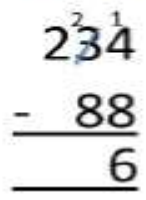
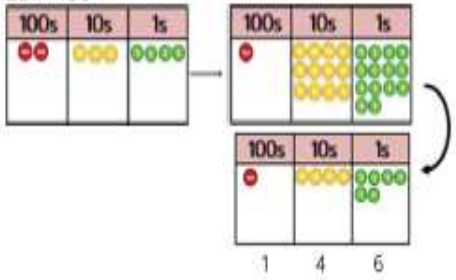
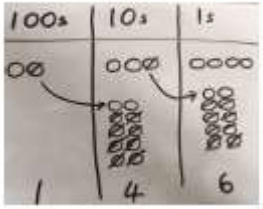
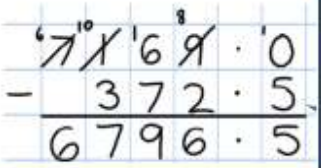
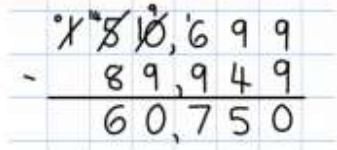
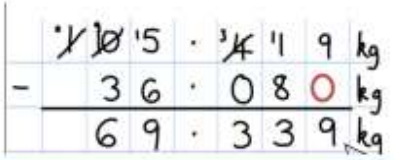
| Subtracting tens and ones<br><br>Year 4 subtract with up to 4 digits.<br><br>*Introduce decimal subtraction through context of money* | Column method using place value counters.<br>234 – 88<br>  <br><br>Model process of exchange using Numicon, base ten and then move to PV counters. | Represent the place value counters pictorially; remembering to show what has been exchanged.<br>  <br> | Formal colum method. Children must understand what has happened when they have crossed out digits.<br>  <br><br>Use the phrase 'take and make' for exchange |
| Year 5- Subtract with at least 4 digits, including money and measures.<br><br>*Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal* | Column method using place value counters.<br>234 – 88<br>  <br> | Represent the place value counters pictorially; remembering to show what has been exchanged.<br>  <br> |  <br><br>Use zeros for placeholders.<br>  <br> |
| Year 6—Subtract with increasingly large and more complex numbers and decimal values. | | |  <br><br>  <br> |