

**Learning to Love, Loving to Learn**

**Written Calculation Policy for Addition and Subtraction– Revised July 2022**

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|  | **Addition +** | **Subtraction -** |
| **1**  **Reception** | * Practical activities for counting objects and combining sets * Counting on using practical apparatus * Seeing a whole number and its parts, partitioning and combining numbers including into more than 2 numbers * Number bonds- which pairs make a given total * Counting on using a number line * Mostly mental calculations with informal jottings. Teacher recording.   Use of models – part-part whole, tens frame, numicon, Rekenreks | * Practical activities to relate subtraction to ‘taking away’ * Counting back using practical apparatus * Seeing a whole number and its parts, partitioning and combining numbers including into more than 2 numbers (inverse of addition) * Counting back using a number line * Mostly mental calculations with informal jottings. Teacher recording.   Use of models – part-part whole, tens frame, numicon, Rekenreks |
| **2**  **Year 1** | **U + U and TU+U (up to 20)**  **Pupils memorise and reason with number bonds to 10 and 20 in several forms.**  Using practical and informal written methods – use part-whole model, tens frame, Numicon and bar model including finding missing parts.    Understanding addition as:   * Combining sets to make a total * Steps along a blank/numbered number line (counting on)      * Can be done in any order e.g. 5+2=2+5     Record calculations in a number sentence (e.g. 5+2=7)  Bridging the 10 through number bonds and tens frame counters.  **Vocabulary**:  Add, more, altogether, total, put together, more than | **U – U and TU-U (up to 20)**  **Pupils memorise and reason with number bonds in several forms.**  Using practical and informal written methods – use part-whole models, tens frame and bar models including finding missing parts    Understanding subtraction as:   * ‘Taking away’ * Steps along a blank/numbered number line (counting back)      * Cannot be done in any order e.g. 5-2 does not = 2–5 * Record calculations in a number sentence (e.g. 5–2=3)   **Vocabulary:**  Take away, subtract, how many are left? Count back, distance between, difference between, less than |

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| **Year 2** | **TU + U and TU +T**  Using practical and informal written methods- eg part-whole models, tens frame, bar model  Understand addition is the inverse of subtraction  • Combining sets to make a total  • Steps along a blank/numbered number line (counting on)  -bridging tens (e.g. 19 + 4 = )    - partitioning bridging through ten  Eg Children should be able to partition the 7 to relate adding the 2 and then the 5.  8 + 7 = 8 + 2 +3 = 13  Or 38 + 5 = 43     * Use blank / numbered hundred squares to count on in 10’s (e.g. 64 + 20)     • Record calculations in a number sentence (e.g.19 + 4 = 23 or 64 + 20 = 84)  **Vocabulary:**  Addition, add, more, more than, is greater than, total, altogether, count on, put together, sum | **TU – U and TU - T**  Using practical and informal written methods eg Part-whole model, tens frame, bar model  Essential skill:   * Understand subtraction is the inverse of addition * Using blank/numbered hundred squares to count back in 1’s   e.g. 27 – 6 =   * Using blank/numbered hundred squares to count back in 10’s   e.g. 64 – 20 =      • Record calculations in a number sentence  (e.g. 27 – 6 = 21 or 64 – 20 = 44)   * Dienes to be used to support this concept. * Use bar models to find missing numbers   Eg 52 – 8 = ?; ? – 20 = 25; 22= ? -21; 6 + ? + 3 = 11.  20 - ? = 13    ? – 20 = 25  **Vocabulary:**  Subtraction, subtract, take away, less than, fewer, left, count back, distance between, difference between, difference |

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| **4**  **Year 2** | **TU + TU using partitioning**  **NCETM 1.15-Use with Dienes as support**  Essential skill:   * Ability to partition TU * Initially without crossing tens (e.g. 43 + 26 = )      * Progress to crossing tens (e.g. 47 + 26 = )      * When confident , skip partitioning step e.g.   Include inverse and missing numbers – addition and subtraction relationship. | **TU – TU using a number-line**  **Do not use NECTM 1.16 TP2 use number line counting on**  Essential skills:   * Understand the term ‘difference’ * Recognise that subtraction cannot be done in any order * Use practical and informal written methods to subtract two-digit numbers e.g. use a bead string to find the difference between 19 and 13      * Use a number-line to count on from the smaller number to find the difference bridging tens      * Correctly record number sentence e.g. 34 – 26 = 8 * Include finding the inverse and missing boxes and links between addition and subtraction using bar models * 65- ? = 28 * ? - 50 =50 * 60 + ? = 89 * ? + 25 =37 |

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| **5**  **Year 3** | 1. **TU + TU using expanded column method**   Use Dienes to support  Essential skills:   * Line up place value * Begin all column methods from the top right * Mental strategies are secure * Initially without crossing tens   (e.g. 43 + 26 = )     1. **TU + TU using standard column method** 2. **Include missing boxes and use of bar models** | * Progress to crossing tens (e.g. 47 + 26 = )      * When crossing tens, refer to carried number as “carry one ten ” **not** “carry one” | **TU – TU using column method Include missing boxes and use of bar models**  **Use expanded method, with Dienes to explain standard method as required.**  **See NCETM 1.20 and then remove scaffold**  Essential skills:  Line up place value   * Begin all column methods from the top right * Mental strategies are secure   **Standard method**   * Initially without exchange   (e.g. 48 – 23 = )    “Start from the right, I have 8 units subtract 3 units, that leaves me with 5 units. Look at the tens; I have 4 tens subtract 2 tens, that leaves me with 2 tens. 48 subtract 23 equals 25.” | * With exchange   (e.g. 44 – 26 = )    “Start from the right, I have 4 units subtract 6 units (look at four fingers and try to subtract 6) I can’t do it, I need to exchange one ten for ten units. Now I have 3 tens and 14 units. 14 units subtract 6 units leaves me 8 units. 3 tens subtract 2 tens leaves 1 ten. So 44 subtract 26 equals 18” |
| **6**  **Year 3**  **7**  **Year 4**  **8**  **Year 5** | **HTU + HTU or TU**  **Use Dienes for support**  **Include missing boxes and use of bar models**  Essential skill:   * Use estimation before attempting column addition, to support the checking process * May involve a list of more than two numbers   (e.g. 234 + 125 +63 =)   * Encourage checking of answer   **THTU + THTU**  **Use Dienes for support**  **Include missing boxes and use of bar models**  4202+3879=  Est: 8000  Th H T U  4 2 0 2  +3 8 7 9  8 0 8 1  ~~1~~  ~~1~~  **5-digits and beyond**  **Involve 2 or 3 whole numbers**  **Involve adding a pair of 2-place decimal numbers including amounts of money**  **Use Dienes to support**  **Include missing boxes and use of bar models**  Essential skill:   * Keep place value lined up; focus on lining up decimal point      * Use rounding to check answers | | **HTU – HTU or TU**  **Use Dienes for support**  **Include missing boxes and use of bar models**  Essential skills:   * Use estimation before attempting column subtraction, to support the checking process * Thorough understanding of place value * Line up place value * Standard column subtraction HTU – TU (e.g. 543 – 76 =)   Showing the zero hundreds helps to line up place value   * Standard column subtraction H – TU (e.g. 500 – 76 = )   Children should recognise that mental / number-line approaches to these types of number sentences will be more reliable than standard column subtraction due to exchange process.  Check understanding of place value – “How many tens?”(**50**) “We shall exchange 1 ten for 10 units, giving us 49 tens and 10 units, which is the same as 4 hundreds, 9 tens and 10 units.”   * Encourage checking of answer   **THTU-THTU**  **Use Dienes for support**  **Include missing boxes and use of bar models**  7574-3278=  Est: 5000  Th H T U  4 16 1  7 ~~5~~ ~~7~~ 4  -3 2 7 8  4 2 9 6  **5-digits and beyond**  **Involve subtracting a pair of 2-place decimal numbers including amounts of money**  **Use Dienes to support**  **Include missing boxes and use of bar models**  Essential skill:   * Keep place value lined up; focus on lining up decimal point * Know when to insert a 0 as a place holder | |

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| **9**  **Year 6** | **Adding several numbers with increasing complexity including money, measure and decimals with different numbers of decimal places**  **Include missing boxes and use of bar models**  Essential skill:   * Keep place value lined up; focus on lining up decimal point   12.3 + 0.897=  Est: 13  T U . t h th  1 2 .3 0 0  + 0 .8 9 7  1 3 .1 9 7  ~~1~~ | **Subtracting whole numbers and decimals with different numbers of decimal places**  **Include missing boxes and use of bar models**  Essential skill:   * Keep place value lined up; focus on lining up decimal point   12.3 - 0.897=  Est: 11  T U . t h th  1 12 9 1  1 ~~2~~ .~~3~~ ~~0~~ 0  - 0 .8 9 7  1 1 .4 0 3 |