

**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 partsUnderstanding 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 modelUnderstand 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 tenEg Children should be able to partition the 7 to relate adding the 2 and then the 5.8 + 7 = 8 + 2 +3 = 13Or 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 modelEssential 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
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* 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 supportEssential 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  |