|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 3**  **A**dd and subtract numbers mentally, including:  a three-digit number and ones  a three-digit number and tens  a three-digit number and hundreds  Two 2-digit numbers across 100 (non-statutory guidance)  Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction  **Partitioning for Subtraction**  When employing this method, the children need to be made aware that this will only work when the digit to be subtracted is not bigger than the digit it is being subtracted from.  A common misconception is where the children “switch” the digits to make it “possible”. E.g. 123-18 is calculated 8-3, 20-10 etc. | Subtraction in KS2 at Great Moor Junior School   * As much as possible, **subtraction should be taught alongside addition as an inverse.** * The fact that subtraction is not commutative (cannot be done in any order) should be emphasised. * **Concrete materials** such as place value discs, base ten resources, place value charts, number lines, number squares, blocks or counters etc. are integral to support children’s understanding of subtraction. * Teaching should move from a more concrete representation to a more abstract. An on-screen or visual model can help to bridge between the two. * Maths terms indicating subtraction (such as *decrease, difference between, How many are left?, How much is left?, minus, take away* etc.) should be used interchangeably to develop a rich and useful mathematical vocabulary. | | | | |
| **Partitioning**  Subtracting ones and tens from a 3-digit number  567 – 60 = 507  745 – 700 = 45  832 – 2 = 830  **364– 8**  364 **–** 4 **–** 4 = 356  **356 – 70**  356 – 50 – 20 = 286  **956 – 600**  956 – 600 = 356 | **TU – TU**  **By counting back in tens and ones**  **91 – 35**  **91 – 30 – 1 – 4**    **Special cases**  93 – 39 as  93 – 40 + 1  **Choosing Appropriate Strategies**  Children need to be aware that there are a range of different strategies to choose from for calculation.  Discussion of efficient methods after a review of the numbers involved should be an integral part of maths lessons.  53 54  93 | **Subtraction up to three digits**  **123 – 86 = 37**  **23**  **4**  **10**  90  123  100  86  **£5.67 – £2.20**  £5.67 – £2.00 = £3.67  £3.67 – 20p = £3.47 | **Column subtraction**  **23147**  **- 1 6 5**  **1 8 2**  **Standard Written Method Subtraction**  Great emphasis needs to be placed on lining up the columns carefully.  Children start with the ones first.  Children need to check that the lower digit is not bigger than the top digit.  If there are “not enough” in a column to complete the subtraction, children should *exchange* (swap/take and make) from the next column (as above.)  Digits should be referred to by their value i.e 6 in the tens column is 6 TENS or 60 not 6. | **Difference**  (see also subtraction up to three digits)  **103 – 87 = 16**  When numbers are close together, count on from the smallest number through the multiple of ten or count back from the largest to the smallest through the multiple of ten.  **10**  **3**  **3**  103  100  **716 – 693= 23**  **16**  **7**  716  700 |
| **Year 4**  Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | **Partitioning**  1678 – 600 = 1078  2689 – 80 = 2609  6839 – 9 = 6830  7484 – 1100 = 6384 | **Using mental calculation when appropriateby counting back**  **5678 – 2342 =**  5678 – 2000 = 3678  3678 – 300 = 3378  3378 – 40 = 3338  3338 – 2 = 3336  **See difference too** | **Subtraction up to four digits**  **£50 – £28.25 = £21.75**  £20  £1  75p  £28.25 £30 £50 | As above but using numbers up to 4 digits. | **Difference**  5003 – 3897= **1106**  **103**  **1003**  4000  5003 |
| **Year 5**  Add and subtract numbers mentally with increasingly large numberseg 5-digit – 4-digit multiple of 10  Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | **Partitioning**  6.76 – 0.06 = 6.7  7.47 – 0.4 = 7.07 | **Using mental calculation by counting back**  **45678 – 3500 = 42178**  45678 – 3000 = 42678  42678 – 500 = 42178  **5.78 – 2.45** =3.33  5.78 – 0.05 = 5.73  5.73 – 0.4 = 5.33  5.33 – 2 = 3.33 | **Difference**  **Use bonds to 100 to support**  **£10 – £7.71 = £2.29**  Use a number line or jottings  **£7.71 £8.00 = 29p**  **£8.00 £10.00 = £2**  **7 – 2.45 = 4.55**  **2.45 3 = 0.55**  **3 7 = 4** | **Column subtraction**  Using numbers up to 5 digits and decimals (e.g. money)  **2318 75615**  **Subtraction of Decimals**  The decimal point should be written on the line in the vertical centre of the numbers (it does not have its own box.)  “Empty” spaces at the end of decimals should be filled with zero as a placeholder.  Numbers after the decimal point should be referred to by their value i.e. 6 tenths or 6 hundredths etc.  **-1 9 2 4 8**  **1 9 5 1 7**  **2318 7∙6 5**  Placeholder  **-1 9 2∙ 4 0**  **1 9 5∙ 2 5** |  |
| **Year 6**  Perform mental calculations, including with mixed operations and large numbers | **Partitioning**  **4.578 – 0.008 = 4.57**  **6.378 – 0.07 = 6.308** | **Difference using larger numbers and number facts**  **£100 – 67.23= £32.77**  £32  77p  £67.23 £68 £100 | **Difference (use mixed decimals)**  **6.45 – 1.7 = 4.75**  **1.7 2 = 0.3**  **2 6.45 = 4.45** | Using numbers up to 6 digits and decimals (e.g. money) |  |