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| Division in KS2 at Great Moor Junior School   * As much as possible, **division should be taught alongside multiplication as an inverse.** * **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 multiplication.   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. | | | | | | | |
| **Year 3**  Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers divided one-digit numbers, using mental and progressing to formal written methods | Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables  Use facts for numbers up to 10 times the divisor  Eg 28 ÷ 3  This is between  27 ÷ 3 = 9 and  30 ÷ 3 = 10  So 9 remainder 1 | **Counting**  Relate division to counting and multiplication facts.  **Y3MaBE-f5**Count in 4s to see that there are 6 4s in 24.  Arrays show 6 groups of 4 so  24 ÷ 4 = 6 | | **Division as grouping**  **13 ÷ 3 = 4 r1**  **4 × 3**  **10 × 3**  **0**  **30**  **42 43**  **10 × 3** | | **Division as grouping**  **43 ÷ 3 = 14 r 1**  **43**  **13**  **30**  ***4 × 3 + 1*** | **Halving by partitioning**  **76**  **Half of 70 Half of 6**  **35 3**  **38** |
| **Year 4**  Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers  Divide two-digit and three-digit numbers by a one-digit number using formal written layout | Division facts for multiplication tables up to 12 × 12  Use facts for numbers up to 10 times the divisor  Eg 75 ÷ 9  This is between  72 ÷ 9 = 8 and  **Consistency in Method**  The multiplier (e.g. 10) is written before the multiplicand (6).  81 ÷ 9 = 9  So 8 remainder  3 | **Division as grouping**  Combine multiples of the divisor to support you.  **87 ÷ 6 = 14 r 3**  **4 × 6**  **10 × 6**  **0**  **84 87**  **60**  **87**  **27**  **60**  **4 × 6 + 3**  **10 × 6** | | **Division by grouping leading to formal division**  **Choosing how to partition**  The numbers in the second example have not been partitioned into tens and units to avoid the difficulty of halving £3.  Children should be encouraged to partition based upon known facts or ease of individual calculation rather than always by tens and units.  **87 ÷ 6**  **1 4 r3**  **6 8 7**  **6 0 10 x 6**  **2 7**  **2 4 4 x 6**  **3** | | | **Halving by partitioning**  **236**  **Half of 200 Half of 36**  **100 18**  **118**  **£13**  **Half of £10 Half of £3**  **£5 £1.50**  **£6.50**  **£13**  **Half of £12 Half of £1**  **£6 50p**  **£6.50** |
| **Year 5**  Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context | multiply and divide numbers mentally drawing upon known facts  Divide numbers by 10 and 100   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **H** | **T** | **U** | **1/10** | **1/100** | |  | **2** | **7** |  |  | |  |  |  | **2** | **7** | | **Division as grouping drawing on known facts**  Use partitioning and known facts  196 ÷ 6 = 32r4 325 ÷ 3= 108r1  180 16 300 24/1  (30 x 6) (2 × 6 + 4) (100 × 3) (8 × 3 + 1) | | | **Division leading to formal division**  0 placeholder  **578 ÷ 7**  **8 2 r 4**  **7 5 7 8**  **5 6 0 80 X 7**  **1 8**  **1 4 2 X 7**  **4** | | **Formal (short) Division**  **Short Written Division: Carrying**  “Carried” numbers should be smaller and written to the top left of the number they are to be carried to.  **638 ÷ 8**  **0 7 9 r 6**  **7**  **8 6 3 8**  0 placeholder  **6725 ÷ 7**  **0 9 6 0 r 5**  **4**  **7 6 7 2 5** |
| **Year 6**  Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context  Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context | **Use known facts**  Know 378 is a multiple of 3 because  300/60 and 18 are all multiples of 3  Know 385 is a multiple of 7 because  0 placeholder  350 and 35 are multiples of 7 | **Short Division**  0 placeholder  **638 ÷ 8**  **0 7 9 r 6**  **7**  **8 6 3 8**  **6725 ÷ 7**  **0 9 6 0 r 5**  **4**  **7 6 7 2 5** | **Long Division drawing on known facts**  **493 ÷ 15 = 32**  **0 3 2 r**  **15 4 9 3**  **4 5 0 -**  **4 3**  **3 0 -**  **1 3**  **Expressing Remainders**  Remainders may be expressed as whole number remainders, fractions, or by rounding, as appropriate for the context. | | **Use tests of divisibility**  Multiple of 3, digits in the number add to 3, 6 or 9  Multiple of 4, tens and ones in the number are a multiple of 4  Multiple of 6, the number is even and digits in the number add to 3, 6 or 9  Multiple of 9, digits in the number add to 9 | | **Use place value and division facts**  **1.32 ÷ 3 = 1/100 of 132 ÷ 3**  **132 ÷ 3 = 44**  **44 ÷ 100 = 0.44**  **So 1.32 ÷ 3 = 0.4** |