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| Year 4  ES | End of year expectations for mental calculation | End of year expectations for written methods and problem solving | Written strategies/ recordings/methods/images | Vocabulary  &  Links |
| * Recall multiplication and division facts for multiplication tables up to 12 × 12 * 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 * Recognise and use factor pairs and commutativity in mental calculations * Practise mental methods and extend this to three‐digit numbers to derive facts   (e.g 600 ÷ 3 = 200 can be  derived from 2 x 3 = 6) | * Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout * Estimate before calculating * Ensure written methods build on/relate to mental methods   (e.g. grid method)   * Introduce alongside each other grid and expanded column method   FRACTIONS   * Recognise and show, using diagrams, families of common equivalent fractions * Understand the relation between non‐unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths. * Make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. * Use factors and multiples to recognise equivalent fractions and simplify where appropriate | Key skills to support:   * know or quickly recall multiplication facts   up to 12 × 12   * understand the effect of multiplying numbers by 10, 100 or 1000 * multiply multiples of 10, for example, 20 × 40; * approximate, e.g. recognise that 72 × 38   is approximately 70 × 40  = 2800 and use this  information to check  whether the answer  appears sensible or not | • Solve problems involving  multiplying and adding,  including using the distributive  law to multiply two digit  numbers by one digit, integer  scaling problems and harder  correspondence problems  such as n objects are  connected to m objects.  • Convert between different  units of measure (e.g. km to  m), use multiplication to  convert from larger to  smaller units  • *Understand the relation between*  *non-unit fractions and*  *multiplication/division of*  *quantities, with particular*  *emphasis on tenths and*  *hundredths*  • *Relate area to arrays and*  *multiplication.*  • Problem solving work can  involve finding all possibilities  and combinations drawing on  knowledge of multiplication  tables facts  • *Pupils understand and use a*  *greater range of scales in their*  *representations* (Statistics) |