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| **MULTIPLICATION & DIVISION FACTS** | | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| *count in multiples of twos, fives and tens*  (copied from Number and Place Value) | *count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward*  (copied from Number and  Place Value) | *count from 0 in multiples of 4, 8, 50*  *and 100*  (copied from Number and Place Value) | *count in multiples of 6, 7, 9, 25 and 1 000*  (copied from Number and Place Value) | *count forwards or backwards in steps of powers of 10 for any given number up to*  *1 000 000*  (copied from Number and  Place Value) |  |
|  | recall and use  multiplication and  division facts for the 2, 5  and 10 multiplication  tables, including  recognising odd and even  numbers | recall and use multiplication and  division facts for the 3, 4 and 8  multiplication tables | recall multiplication  and division facts for  multiplication tables  up to 12 × 12 | recall multiplication and  division facts for  multiplication tables up to  12 × 12  (Consolidation from Year  4) | recall multiplication and  division facts for  multiplication tables up to  12 × 12  (Consolidation from Year  4) |
| **MENTAL CALCULATION** | | | | | |
|  |  | write and calculate mathematical  statements for multiplication and  division using the multiplication  tables that they know, including  for two-digit numbers times one-  digit numbers, using mental and  progressing to formal written  methods (appears also in Written  Methods) | 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 | multiply and divide  numbers mentally  drawing upon known  facts | perform mental  calculations, including with  mixed operations and large  numbers  (Children to be taught  when to use a mental or  written method depending  on the calculation) |
|  | show that multiplication  of two numbers can be  done in any order  (commutative) and  division of one number by | show that multiplication of two  numbers can be done in any  order (commutative) and division  of one number by another cannot  (Consolidation from Year 2) | recognise and use  factor pairs and  commutativity in  mental calculations  (appears also in | multiply and divide  whole numbers and  those involving decimals  by 10, 100 and 1000 | *associate a fraction with division and calculate decimal fraction equivalents (e.g.*  *0.375) for a simple fraction (e.g. 3/8)*  (copied from Fractions) |
| another cannot |  | Properties of Numbers) |  |

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| **WRITTEN CALCULATION** | | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
|  | calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs | write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods  (appears also in Mental Methods) | multiply two-digit and three-digit numbers by a one- digit number using formal written layout | multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers | multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication |
|  |  |  |  | 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 | divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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 |
|  |  |  |  |  | *use written division methods in cases where the answer has up to two decimal places* (copied from Fractions (including decimals)) |

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| **PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS** | | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
|  |  |  | recognise and use factor pairs and commutativity in mental calculations (repeated) | identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. | identify common factors, common multiples and prime numbers |
| know and use the vocabulary of prime numbers, prime factors and composite (non-  prime) numbers | *use common factors to simplify fractions; use common multiples to express fractions in the same denomination*  (copied from Fractions) |
| establish whether a number up to 100 is prime and recall prime  numbers up to 19 |
|  |  |  |  | recognise and use square numbers and cube numbers, and the notation for squared ( 2) and cubed (3 ) | *calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3 ) and cubic metres (m3 ), and extending to other units such as mm3 and km3*  *(copied from Measures)* |

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| **ORDER OF OPERATIONS** | | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
|  |  |  |  |  | use their knowledge of the order of operations to carry out calculations involving the four operations |
| **INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS** | | | | | |
|  |  | *estimate the answer to a calculation and use inverse operations to check answers* (copied from Addition and Subtraction) | *estimate and use inverse operations to check answers to a calculation*  (copied from Addition and Subtraction) | *estimate and use inverse operations to check answers to a calculation*  (copied from Addition and Subtraction)  (Consolidation from Year 4) | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy |

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| **PROBLEM SOLVING** | | | | | |
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| solve one-step problems involving multiplication and division, by calculating the answer first using concrete objects, then pictorial representations and arrays with the support of the teacher | solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts and previous years learning. | solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which objects are connected to m objects and previous years learning. | 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 and previous years learning. | solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and  cubes | solve problems involving addition, subtraction, multiplication and division |
| solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals  sign |  |
| solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple  rates | *solve problems involving similar shapes where the scale factor is known or can be found*  (copied from Ratio and Proportion) |