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| MATHS: Multiplication and Division REC to Y6 | | | | | | | |
|  | EYFS Skills | Key Stage 1 Skills | | Lower Key Stage 2 Skills | | Upper Key Stage 2 Skills | |
|  | End of REC  Expectations | End of Year 1  Expectations | End of Year 2  Expectations | End of Year 3 Expectations | End of Year 4  Expectations | End of Year 5 Expectations | End of Year 6 Expectations |
| ASPECT | Average age 5 years 6 months | Average age 6yrs 6months | Average age 7years 6 months | Average age  8years 6 months | Average age 9 years 6 months | Average age 10 years 6 months | Average age 11 years 6 months |
| **Multiplication and Division Facts** |  | *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)  recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers | *count from 0 in multiples of 4, 8, 50 and 100*  (copied from Number and Place Value)  recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | *count in multiples of 6, 7, 9, 25 and 1 000*  (copied from Number and Place Value)  recall multiplication and division facts for multiplication tables up to 12 × 12 | *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) |  |
| **Mental Calculation** |  |  | show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot | 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  recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers) | multiply and divide numbers mentally drawing upon known facts  multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | perform mental calculations, including with mixed operations and large numbers  *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) |
| **Written Methods** |  |  | 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  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 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 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 |
| **Properties of Numbers: multiples, factors, prime, square and cube numbers** |  |  |  |  | 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.  know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers  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) | identify common factors, common multiples and prime numbers |
| **Order of Operations** |  |  |  |  |  |  | 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) |  | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **Problem Solving** |  | solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, 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 | solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects | 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 | 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 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 addition, subtraction, multiplication and division |