

Curriculum & Knowledge Map: Multiplication and Division



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 long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

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)
Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.



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
Solve problems involving addition, subtraction, multiplication and division
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

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 and divide numbers mentally drawing upon known facts
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 whole numbers and those involving decimals by 10, 100 and 1000



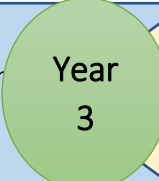
Recall multiplication and division facts for multiplication tables up to 12×12
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
Recognise and use factor pairs and commutativity in mental calculations

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
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



Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
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, 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.



Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs

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.



Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

