

Multiplication and Division

Year 1

- Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- Solve one-step problems involving division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- Recognise and know the value of different denominations of coins and notes.

Year 3

- 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 he/she knows, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- 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

Year 2

- 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.
- 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 concrete materials and mental methods.
- Solve problems involving multiplication and division, using arrays, repeated addition and multiplication and division facts, including problems in contexts e.g. knowing that $2 \times 7 = 14$ and $2 \times 8 = 16$, explains that making pairs of socks from 15 identical socks will give 7 pairs and one sock will be left.
- Use multiplication and division facts for 2, 5 and 10 to make deductions outside known multiplication facts e.g. know that multiples of 5 have one digit of 0 or 5 and use this to reason that 18×5 cannot be 92 as it is not a multiple of 5.
- Solve word problems involving multiplication and division with more than one step e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet.

Year 4

- 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 commutatively in mental calculations
- 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.

Year 6

- Multiply multi-digit whole number using the 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, interpreting remainders according to the context
- Perform mental calculations, including with mixed operations and large numbers
- Identify common factors, common multiples and prime numbers
- Use his/her knowledge of the order of operations to carry out calculations involving the four operations
- Solve additional and subtraction multi step problems in context deciding which operations and methods to use and why
- 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

Year 5

- 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
- Multiply numbers up to 4 digits by 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
 - Recognise and use square numbers and the notation for squared (2)
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- Recognise and use cube numbers and the notation for cubed (3)
- 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