

Mathematics



Prior Learning

These units will build on the knowledge and skills learned in Year 2.

Place Value

Prior learning will be to count in steps of 2, 3, and 5 from 0, and in tens from any number, both forward and backward. Children should recognise the place value of each digit in a two-digit number (tens, ones) and well as identify, represent and estimate numbers using different representations, including the number line. Pupils can read and write numbers to at least 100 in numerals and in words, and will also compare and order numbers from 0 up to 100, using $<$, $>$ and $=$ signs. Children will use place value and number facts to solve problems.

Addition and Subtraction

Applying their increasing knowledge of mental and written methods, children can solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. When working mentally, children can use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Pupils understand that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. They recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Multiplication and Division

Children recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. They calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs. They recognise that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Pupils can solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Key vocabulary for this unit

Hundreds
Tens
Ones
Zero
Place Value

Difference
Subtract
Less
Minus
Take Away

Greater Than Less Than Order More Less Partition Digit Add Total Plus Sum Altogether	Column Addition Column Subtraction Exchange Estimate Inverse Operation Times Tables Multiply By Divide By Array Fact Families Regrouping
Learning Sequence	
Place Value	<ul style="list-style-type: none"> • Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000 • Identify, represent and estimate numbers using different representations • Read and write numbers up to 1000 in numerals and in words • Solve number problems and practical problems involving these ideas
Addition and Subtraction	<ul style="list-style-type: none"> • Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds • Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. • Estimate the answer to a calculation and use inverse operations to check answers
Multiplication and Division	<ul style="list-style-type: none"> • 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

- 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.

Assessment milestones

Mathematical Skills:

- To solve number and practical problems that involve knowledge of place value.
- To identify, represent and estimate numbers using different representations.
- To estimate and use inverse operations to check answers to a calculation.

Mathematical Knowledge:

- To recognise the place value of each digit in a three-digit number
- To order and compare numbers up to 1000.
- To add and subtract numbers with up to three digits using the formal written methods of columnar addition and subtraction where appropriate.
- To recall multiplication and division facts for the 3, 4 and 8 multiplication tables.