



Addition and Subtraction: Overview

Concepts: Number bonds, Understanding additive relationships, Calculation strategies, Solving problems

For further guidance see our [Progressions in Calculations](#)



First there were four passengers.
Then ___ joined the carriage.
Now there are ___ passengers.

First	Then	Now
		?

+ =

"I will partition 36 into 30 and 6. I will partition 23 into 20 and 3. I will use my number bonds to help me."

$36 + 23 =$

$343 - 126 =$

3	4	3	
-	1	2	6
2	2	3	

- Reception**
- Automatically recall number bonds for numbers 0–5 (progressing to some numbers bonds within 10)
 - Adding two single digit numbers within 10 by counting all or counting on.
 - Subtracting two single digit numbers within 10 by taking away and through partitioning
 - Explore additive problems in context using 'first, then now' structure.

- Year 1**
- Represent and use number bonds and related subtraction facts within 20
 - Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs
 - Add and subtract one-digit and two-digit numbers to 20, including zero, using a range of strategies including: *count all, count on, count back, make ten, partitioning and use of known facts.*
 - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems

- Year 2**
- Recall and use number bonds within 20 fluently, and derive and use related facts up to 100
 - Show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot
 - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
 - Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: *a two-digit number and 1s, a two-digit number and 10s, 2 two-digit numbers, adding 3 one-digit numbers.*
 - Solve problems with addition and subtraction including numbers, quantities and measures

- Year 3**
- Estimate the answer to a calculation and use inverse operations to check answers
 - Add and subtract mentally including adding 1s, 10s and 100s to a three-digit number
 - Add and subtract numbers with up to 3 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

3	1	3	5	1	2
-	3	2	2	4	3
9	1	1	9		

$5,380 + 2,950 = ?$

+ 3,000

Thousands	Hundreds	Tens	Ones
6	2	5	6
+	2	9	3

- Year 6**
- Use their knowledge of the order of operations to carry out calculations involving the 4 operations
 - Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
 - Perform mental calculations, including with mixed operations and large numbers
 - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
 - Solve problems involving all four operations

- Year 5**
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
 - Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
 - Add and subtract numbers mentally with increasingly large numbers
 - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

- Year 4**
- Estimate and use inverse operations to check answers to a calculation
 - Apply mental strategies including using known facts to numbers within 10000.
 - Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
 - Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why



Addition and Subtraction: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

	Reception	→ Year 1	→ Year 2	→ Year 3	→ Year 4	→ Year 5	→ Year 6
Number bonds							
Recall number bonds	<p>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</p> <p>Unit 4 (within 5); Unit 9 (within 10)</p>	<p>Represent and use number bonds and related subtraction facts within 20</p> <p>Unit 2 (within 10) Unit 5; Unit 7; Unit 9; Unit 13 (within 20)</p>	<p>Recall and use number bonds within 20 fluently; Derive and use related facts up to 100</p> <p>Unit 2; Unit 9; Unit 15</p>	<p><i>In KS2 Pupils continue to use and apply known facts to adding and subtracting within larger numbers. E.g. If I know $14 + 5 = 19$ Then I know $1400 + 500 = 1900$</i></p> <p>E.g. Y4 Unit 2</p>			
Understanding Additive Relationships							
Additive structures		<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>Unit 2 Unit 5; Unit 7; Unit 9; Unit 13</p>	<p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p> <p>Unit 2; Unit 9; Unit 15</p>				<p>Use their knowledge of the order of operations to carry out calculations involving the four operations</p> <p>Unit 3</p>
<p><i>Throughout all primary years, pupils build their understanding of change structures (augmentation and reduction), part-whole structures (aggregation and partitioning) and comparative structures (difference, comparative addition and comparative subtraction). For further guidance see our Progressions in Calculations</i></p>							
Using the inverse and checking answers			<p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>Unit 3 (Do Nows)</p>	<p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Unit 4</p>	<p>Estimate and use inverse operations to check answers to a calculation</p> <p>Unit 2</p>	<p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Unit 2</p>	<p>Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>Unit 1</p>

	Reception	→ Year 1	→ Year 2	→ Year 3	→ Year 4	→ Year 5	→ Year 6
Calculation Strategies							
Mental strategies	<p>Adding and subtract two single digit numbers within 10 by counting all or counting on (addition) or taking away or partitioning (subtraction). Unit 9</p>	<p>Add and subtract one and two digit numbers (including zero) within 20 using counting on, Make ten strategy, known facts or partitioning. Unit 2 (1 digit within 10) Unit 5; Unit 7; Unit 9; Unit 13</p>	<p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s, a two-digit number and 10s, 2 two-digit numbers, adding 3 one-digit numbers. Unit 2; Unit 9; Unit 15</p>	<p>Add and subtract mentally including adding 1s, 10s and 100s to a three-digit number Unit 1; Unit 4; Unit 13</p>	<p><i>Apply mental strategies including using known facts to numbers within 10000; add 1000 or subtract to a given number</i> Unit 2</p>	<p>Add and subtract numbers mentally with increasingly large numbers Unit 2 Unit 11 (with decimals)</p>	<p>Perform mental calculations, including with mixed operations and large numbers Unit 2</p>
Written Strategies			<p><i>Begin to record addition and subtraction in columns alongside pictorial and concrete representations</i> Unit 15</p>	<p>Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction Unit 4</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Unit 2</p>	<p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Unit 2; Unit 11 (with decimals)</p>	<p><i>Apply written methods to problems within 10,000,000</i> Unit 1</p>
Solving problems							
Solving problems in context	<p><i>Explore additive problems in context using 'first, then now structure'.</i> Unit 9; Unit 14</p>	<p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations Unit 2 Unit 5; Unit 7; Unit 9; Unit 13; Unit 14</p>	<p>Solve problems in context of measures and quantities, including problems involving addition and subtraction of money and giving change. Unit 9; Unit 15</p>	<p>Solve problems in context using number facts, place value, and more complex addition and subtraction Unit 1; (number facts) Unit 4; Unit 11</p>	<p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why Unit 2 Unit 10</p>	<p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Unit 2</p>	<p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why Unit 1</p>
Missing numbers		<p>Solve missing number problems (within 10) Unit 7</p>	<p>Solve missing number problems (within 100) Unit 3 (Dolls); Unit 15</p>	<p>Solve missing number problems (within 1000) Unit 4; Unit 13</p>	<p><i>Pupils should continue to apply additive reasoning to practise missing number problems during their Maths Meetings and/or during their Arithmetic Sessions (Y5/6). See our guidance on Developing Fluency for more information.</i></p>		