Addition and Subtraction: Overview
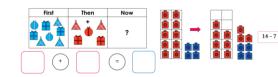
First there were four passengers.
Then ___ joined the carriage.
Now there are ___ passengers.

"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."

$343 - 126 =$

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
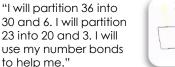
Year 2

- 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

$5,380 + 2,950 = ?$

$+ 3,000$

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

Reception ➡	Year 1 ➡	Year 2 ➡	Year 3 ➡	Year 4 ➡	Year 5 ➡	Year 6
Number bonds						
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. Unit 4 (within 5); Unit 9 (within 10)	**Represent and use number bonds and related subtraction facts within 20** Unit 2 (within 10) Unit 5; Unit 7; Unit 9; Unit 13 (within 20)	**Recall and use number bonds within 20 fluently; Derive and use related facts up to 100** Unit 2; Unit 9; Unit 15	*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* E.g. Y4 Unit 2			
Understanding Additive Relationships						
	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs Unit 2 Unit 5; Unit 7; Unit 9; Unit 13	**Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot** Unit 2; Unit 9; Unit 15				**Use their knowledge of the order of operations to carry out calculations involving the four operations** Unit 3
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						
		Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Unit 3 (Do Nows)	**Estimate the answer to a calculation and use inverse operations to check answers** Unit 4	**Estimate and use inverse operations to check answers to a calculation** Unit 2	**Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy** Unit 2	**Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.** Unit 1

Row labels (leftmost column):
- Recall number bonds
- Additive structures
- Using the inverse and checking answers

	Reception →	Year 1 →	Year 2 →	Year 3 →	Year 4 →	Year 5 →	Year 6
Calculation Strategies							
Mental strategies	**Adding and subtract two single digit numbers within 10** by counting all or counting on (addition) or taking away or partitioning (subtraction). Unit 9	**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	**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	**Add and subtract mentally including adding 1s, 10s and 100s to a three-digit number** Unit 1; Unit 4; Unit 13	*Apply mental strategies including using known facts to numbers within 10000; add 1000 or subtract to a given number* Unit 2	**Add and subtract numbers mentally with increasingly large numbers** Unit 2 Unit 11 (with decimals)	**Perform mental calculations, including with mixed operations and large numbers** Unit 2
Witten Strategies	.		*Begin to record addition and subtraction in columns alongside pictorial and concrete representations* Unit 15	**Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction** Unit 4	**Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** Unit 2	**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)	*Apply written methods to problems within 10,000,000* Unit 1
Solving problems							
Solving problems in context	*Explore additive problems in context using 'first, then now structure'.* Unit 9; Unit 14	**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	**Solve problems in context of measures and quantities, including problems involving addition and subtraction of money and giving change.** Unit 9; Unit 15	**Solve problems in context using number facts, place value, and more complex addition and subtraction** Unit 1; (number facts) Unit 4; Unit 11	**Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why** Unit 2 Unit 10		
Missing numbers		**Solve missing number problems** *(within 10)* Unit 7	**Solve missing number problems** *(within 100)* Unit 3 (Do Nows); Unit 15	**Solve missing number problems** *(Within 1000)* Unit 4; Unit 13	*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.*		