

Year 3	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. Estimate the answer to a calculation and use inverse operations to check answers. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
Year 4	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Estimate and use inverse operations to check answers to a calculation Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Year 5	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. Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Year 6	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Vocabulary

Put together, add, plus, altogether, total, take away, subtract, distance between, difference between, more than and less than, sum, difference, increase, decrease, fewer.

Strategies

Expanded Column Method; Compact Column Method.

Strategies from KS1 may be used where appropriate to support transition to KS2 strategies and to support mental addition and subtraction.

$$353 + 268 = 621$$

$$300 + 50 + 3$$

$$200 + 60 + 8$$

$$\frac{600 + 20 + 1}{100 \quad 10} = 621$$

$$457 - 226 = 231$$

$$400 + 50 + 7$$

$$200 + 20 + 6$$

$$\frac{200 + 30 + 1}{= 231}$$

$$534 - 265 = 269$$

$$400 + 120 + 20 + 14$$

$$500 + 30 + 4$$

$$200 + 60 + 5$$

$$\frac{200 + 60 + 9}{= 269}$$

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \end{array}$$

Answer: 1431

874 - 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 932 \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475

**Mastery**  
Solve calculations using a place value grid and equipment alongside a column method to demonstrate understanding.

Hundreds place	Tens place	Ones place
100	10	1
100	10	1
100	10	1

Sam has completed these calculations, but he is incorrect. Explain the errors he has made.

$$\begin{array}{r} 325 \\ + 247 \\ \hline 581 \end{array}$$

$$\begin{array}{r} 355 \\ - 247 \\ \hline 112 \end{array}$$

Complete these calculations. What do you notice?

3 + 7 =      8 + 2 =      6 + 4 =

30 + 70 =      80 + 20 =      60 + 40 =

33 + 7 =      88 + 2 =      66 + 4 =

333 + 7 =      888 + 2 =      666 + 4 =

300 + 700 =      800 + 200 =      600 + 400 =

**Mastery with Greater Depth**  
There are six 3-digit addition calculations shown below.

a)  $\begin{array}{r} 124 \\ + 233 \\ \hline \end{array}$     b)  $\begin{array}{r} 644 \\ + 172 \\ \hline \end{array}$     c)  $\begin{array}{r} 366 \\ + 277 \\ \hline \end{array}$

d)  $\begin{array}{r} 579 \\ + 221 \\ \hline \end{array}$     e)  $\begin{array}{r} 791 \\ + 163 \\ \hline \end{array}$     f)  $\begin{array}{r} 567 \\ + 233 \\ \hline \end{array}$

Which calculations have no carry digits?  
Which calculations have a carrying digit only once?  
Which calculations have a carrying digit twice?  
Which calculation has the largest answer?  
Which calculation has the smallest answer?

Check that children are looking at the numbers involved, rather than doing the calculations.

$\square \square \square + \square \square \square =$

Throw a 1 to 6 dice and each time record the digit in one of the place holders. The aim is to get the sum as low as possible. Repeat to find different answers. Could you have done it in a different way?  
Compete against a friend and compare your answers.

**Mastery**  
Fill in the missing numbers.

352 +  $\square$  = 480

70 + 99 +  $\square$  = 270

$\square$  - 55 = 84

$\square$  - 3000 = 600

What do you notice about the calculations below?  
Can you find easy ways to calculate?

5000 + 4000 =	5230 + 400 =	5023 + 28 =
4000 + 5000 =	4230 + 500 =	4023 + 28 =
3000 + 6000 =	3230 + 600 =	3023 + 28 =
2000 + 7000 =	2230 + 700 =	2023 + 28 =
1000 + 8000 =	1230 + 800 =	1023 + 48 =

**Mastery with Greater Depth**  
Fill in the missing digits.

1  $\square$  3 + 6  $\square$  = 200

1  $\square$  5  $\square$  + 300 = 1557

5  $\square$  28 - 44  $\square$  = 4788

$\square$   $\square$   $\square$  0 - 2468 = 5092

Find the missing numbers.  
What do you notice?

Make 9999	Make 9998	Make 9990
5000 + $\square$ = 9999	5230 + $\square$ = 9998	5023 + $\square$ = 9990
4000 + $\square$ = 9999	4230 + $\square$ = 9998	4023 + $\square$ = 9990
3000 + $\square$ = 9999	3230 + $\square$ = 9998	3023 + $\square$ = 9990
2000 + $\square$ = 9999	2230 + $\square$ = 9998	2023 + $\square$ = 9990
1000 + $\square$ = 9999	1230 + $\square$ = 9998	1023 + $\square$ = 9990

**Mastery**  
The table shows the cost of train tickets from different cities.

What is the total cost for a return journey to York for one adult and two children?  
How much more does it cost for two adults to make a single journey to Hull than to Leeds?

		York	Hull	Leeds
Adult	Single	£13.50	£16.60	£11.00
	Return	£24.50	£30.00	£20.00
Child	Single	£9.75	£11.00	£8.00
	Return	£15.00	£18.50	£13.50

**Mastery with Greater Depth**  
Sam and Tom have £67.80 between them.  
If Sam has £6.20 more than Tom, how much does Tom have?  
The bar model can help children solve these type of problems, please visit [ncetm.org](http://ncetm.org) for further information on how to build understanding.

Sam  $\square$  + £6.20

Tom  $\square$  } £67.80

£67.80 - £6.20 = £61.60  
£61.60 ÷ 2 = £30.80  
Tom has £30.80