

Learning Objectives

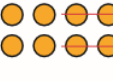
- ❖ To mentally add and subtract a 3-digit number and ones
- ❖ To mentally add and subtract a 3-digit number and tens
- ❖ To mentally add and subtract a 3-digit number and hundreds
- ❖ To add and subtract 3-digit numbers using formal written methods
- ❖ To know how to estimate the answers to calculations
- ❖ To be able to use the inverse to check answers
- ❖ To be able to solve missing number problems
- ❖ To solve problems using number facts and place value
- ❖ To solve more complex addition and subtraction problems
- ❖ To know multiplication facts for the 3, 4 and 8 times tables
- ❖ To be able to write and calculate statements for multiplication and division (2-digit numbers times 1-digit numbers)
- ❖ To know how to use mental calculations
- ❖ To start using formal written methods for multiplication and division
- ❖ To know solve missing number problems

Addition and Subtraction

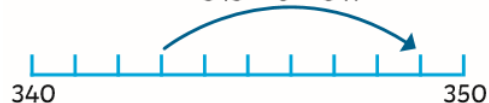
3 digit and 1 digit numbers

Not crossing 10s

$$268 - 4 = 264$$

Hundred	Ten	Ones
		

$$343 + 6 = 349$$



Crossing 10s (Exchanging)

324		
300	20	4
300	10	14

$$316 + 8 = 324$$

316		8
		

$$324 - 8 = 316$$

3-digit and 2-digit numbers

Add and subtract tens

Hundred	Ten	Ones
		

$$451 + 3 \text{ tens} = 481 \quad (5 + 3 = 8)$$

$$451 - 4 \text{ tens} = 411 \quad (5 - 4 = 1)$$

Crossing 10s (Exchanging)

$$258 + 80 = 338$$

- Column method
- Count in 10s mentally
- Add 100, subtract 20

Crossing 10 and 100

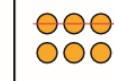
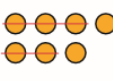
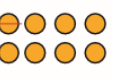
$$\begin{array}{r} 368 \\ +73 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 368 \\ +73 \\ \hline 441 \end{array}$$

3-digit numbers

Not crossing

$$679 - 351 = 328$$

Hundred	Ten	Ones
		

Crossing 10s (Exchanging)

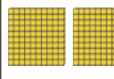
$$\begin{array}{r} 269 \\ +154 \\ \hline 423 \\ 11 \end{array}$$

514	
268	?

$$\begin{array}{r} 4 \text{ } 10 \text{ } 1 \\ 514 \\ -268 \\ \hline 246 \end{array}$$

Add and Subtract 100s

$$264 + 300 = 564$$

Hundred	Ten	Ones
		

Key Vocabulary

add
plus
total
make
sum
more
altogether
increase
combined

subtract
leave
difference
less
minus
reduce
decrease
take away

multiply
product
lots of
times
as much as
groups of

divide
average
evenly
shared
split

place value

Multiplication and Division

Pupils begin by using place value counters to understand written multiplication:

H	T	O
	 	  
	 	  
	 	  

	1	2	4
x			3
	3	7	2

	0	2	1
6	1	2	6

	0	2	
6	1	2	7

Pupils transfer this understanding to a formal written method.

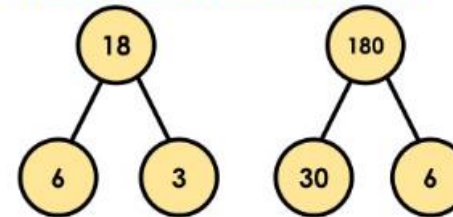
	0		
6	1	2	6

$$126 \div 6$$

Start with the hundreds column. As the 100 counter cannot be split into groups of 6, exchange it for 10 lots of 10 and put these counters into the tens column.

H	T	O
	        	     

Related Facts from Times Tables



$3 \times 6 = 18$	$6 \times 3 = 18$
$18 \div 3 = 6$	$18 \div 6 = 3$
$30 \times 6 = 180$	$60 \times 3 = 180$
$180 \div 30 = 6$	$180 \div 60 = 3$

3 x Tables

$1 \times 3 = 3$
 $2 \times 3 = 6$
 $3 \times 3 = 9$
 $4 \times 3 = 12$
 $5 \times 3 = 15$
 $6 \times 3 = 18$
 $7 \times 3 = 21$
 $8 \times 3 = 24$
 $9 \times 3 = 27$
 $10 \times 3 = 30$
 $11 \times 3 = 33$
 $12 \times 3 = 36$

$3 \div 3 = 1$
 $6 \div 3 = 2$
 $9 \div 3 = 3$
 $12 \div 3 = 4$
 $15 \div 3 = 5$
 $18 \div 3 = 6$
 $21 \div 3 = 7$
 $24 \div 3 = 8$
 $27 \div 3 = 9$
 $30 \div 3 = 10$
 $33 \div 3 = 11$
 $36 \div 3 = 12$

4 x Tables

$1 \times 4 = 4$
 $2 \times 4 = 8$
 $3 \times 4 = 12$
 $4 \times 4 = 16$
 $5 \times 4 = 20$
 $6 \times 4 = 24$
 $7 \times 4 = 28$
 $8 \times 4 = 32$
 $9 \times 4 = 36$
 $10 \times 4 = 40$
 $11 \times 4 = 44$
 $12 \times 4 = 48$

$4 \div 4 = 1$
 $8 \div 4 = 2$
 $12 \div 4 = 3$
 $16 \div 4 = 4$
 $20 \div 4 = 5$
 $24 \div 4 = 6$
 $28 \div 4 = 7$
 $32 \div 4 = 8$
 $36 \div 4 = 9$
 $40 \div 4 = 10$
 $44 \div 4 = 11$
 $48 \div 4 = 12$

8 x Tables

$1 \times 8 = 8$
 $2 \times 8 = 16$
 $3 \times 8 = 24$
 $4 \times 8 = 32$
 $5 \times 8 = 40$
 $6 \times 8 = 48$
 $7 \times 8 = 56$
 $8 \times 8 = 64$
 $9 \times 8 = 72$
 $10 \times 8 = 80$
 $11 \times 8 = 88$
 $12 \times 8 = 96$

$8 \div 8 = 1$
 $16 \div 8 = 2$
 $24 \div 8 = 3$
 $32 \div 8 = 4$
 $40 \div 8 = 5$
 $48 \div 8 = 6$
 $56 \div 8 = 7$
 $64 \div 8 = 8$
 $72 \div 8 = 9$
 $80 \div 8 = 10$
 $88 \div 8 = 11$
 $96 \div 8 = 12$

What I Should Already Know:

- ❖ How to mentally add and subtract a 3-digit number and ones
- ❖ How to mentally add and subtract a 3-digit number and tens
- ❖ How to mentally add and subtract a 3-digit number and hundreds
- ❖ How to add and subtract 3-digit numbers using formal written methods
- ❖ How to estimate the answers to calculations
- ❖ How to use the inverse to check answers
- ❖ How to solve missing number problems
- ❖ How to solve problems using number facts and place value
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- ❖ How to write and calculate statements for multiplication and division (2-digit numbers times 1-digit numbers)
- ❖ How to use mental calculations
- ❖ How to start using formal written methods for multiplication and division
- ❖ How to know solve missing number problems