River View Primary and Nursery School

'Together, We Make Our Community Richer'

YEAR 4

CALCULATION POLICY

Year 4

Place Value

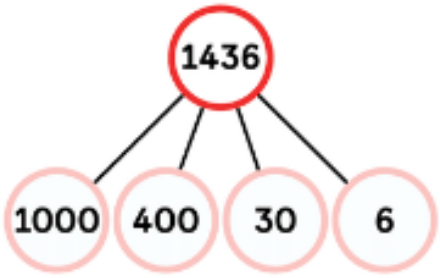
Base 10 or dienes blocks:

Thousands/Hundreds/Tens/Ones

2 thousands + 3 hundreds + 4 tens + 5 ones

Partitioning

1436 = 1000 + 400 + 30 + 6



We can write 1436 as one thousand, four hundred and thirty-six.

Value of Digits:

thousands	hundreds	tens	ones
5	4	0	8

(a) The 5 in 5408 has a value of 5000.

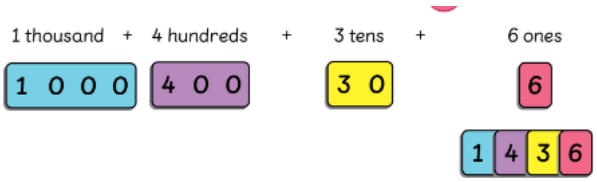
(b) The 4 in 5408 is in the hundreds place.

(c) The 0 in 5408 is in the tens place.

(d) The digit 8 is in the ones place.

(e) 5408 = 5 thousands + 4 hundreds + 0 tens + 8 ones

Place Value Cards:



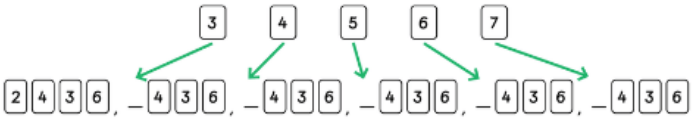
Year 4

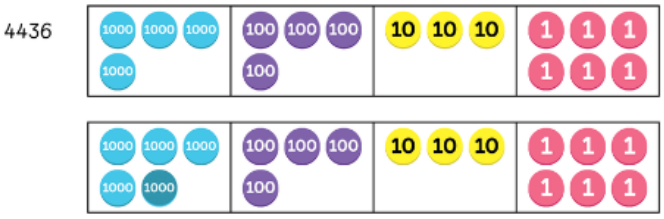
Place Value

Place value counters:

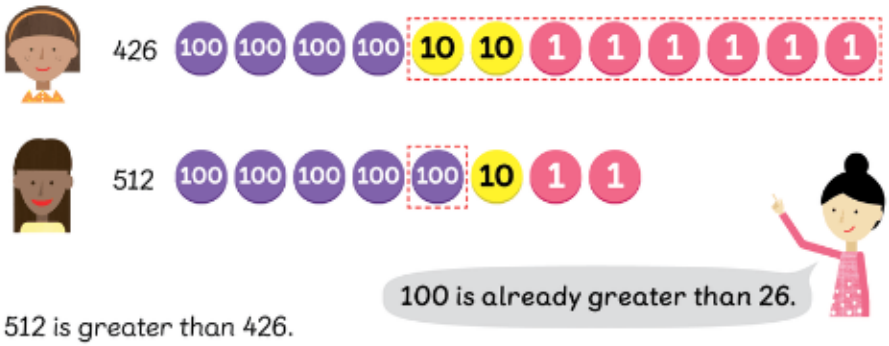
3113 = 3 thousands + 1 hundred + 1 ten + 3 ones

Number patterns:





Comparing numbers:

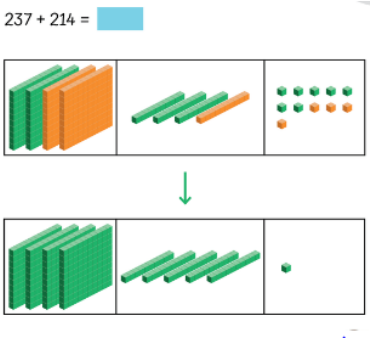


512 is greater than 426.
512 > 426

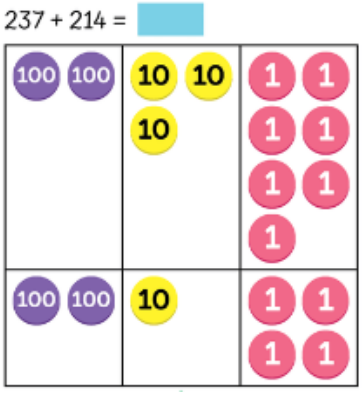
Year 4

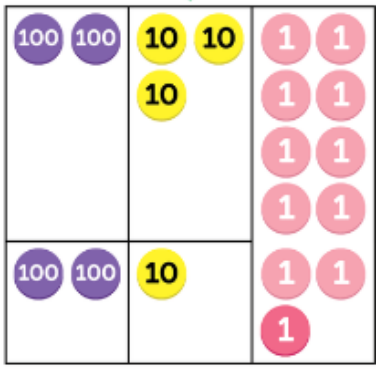
Addition

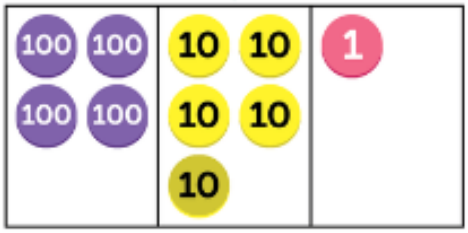
Base 10 method: with and without renaming



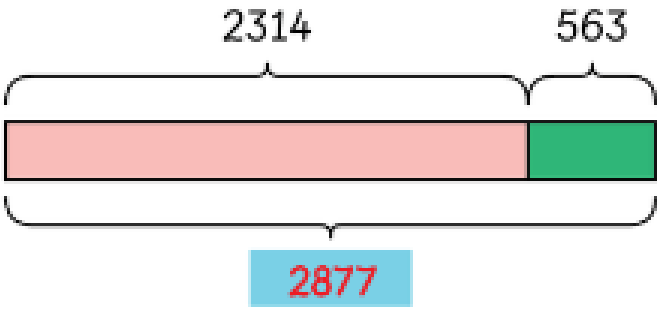
Counters method:







Bar model:



Year 4

Addition

Abstract Calculations:

Commutative	Inverse
1415 + 12 = 1427	1427 - 12 = 1415
12 + 1415 = 1427	1427 - 1415 = 12

Column Addition:

Without renaming:

$$\begin{array}{r} 2\ 6\ 1\ 2 \\ +\ 4\ 2\ 6\ 4 \\ \hline 6\ 8\ 7\ 6 \end{array}$$

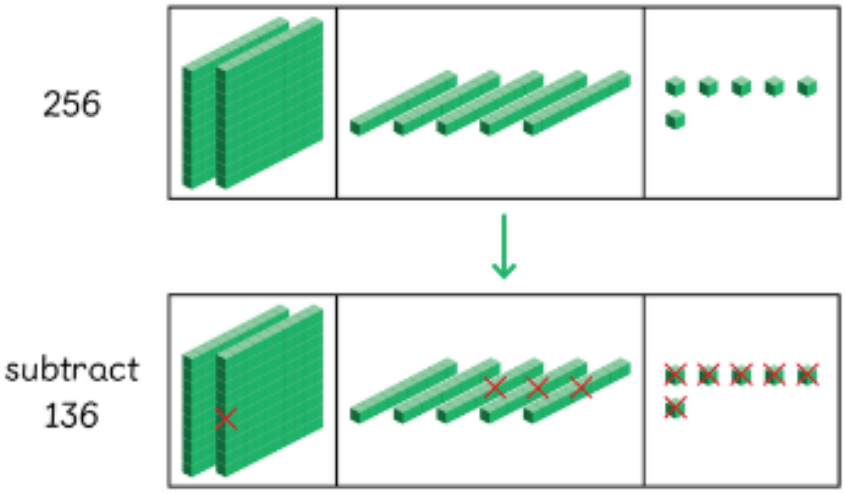
With renaming:

$$\begin{array}{r} {}^{1} \\ 4\ 5\ 0\ 6 \\ +\ 3\ 1\ 2\ 5 \\ \hline 7\ 6\ 3\ 1 \end{array}$$

Year 4

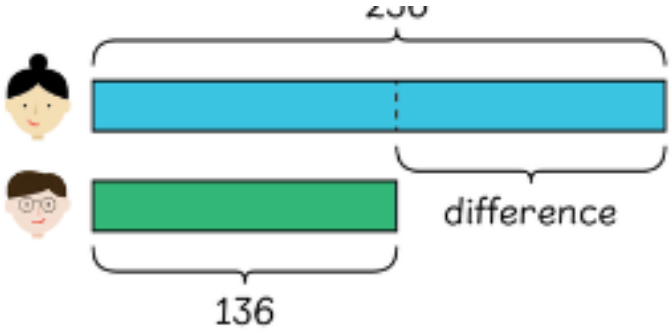
Subtraction

Base 10 method



$$\begin{array}{r} 256 \\ -\ 136 \\ \hline 120 \end{array}$$

Bar Models:



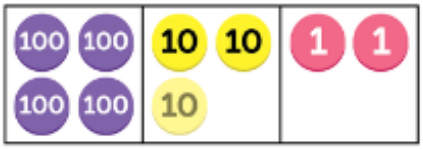
256 − 136 = ☐

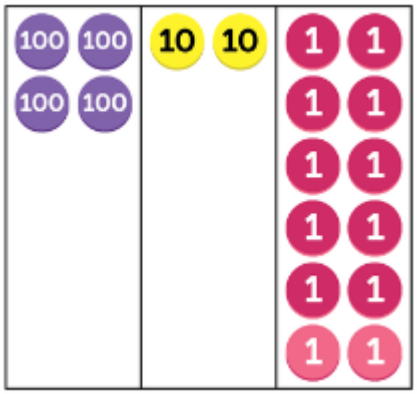
Year 4

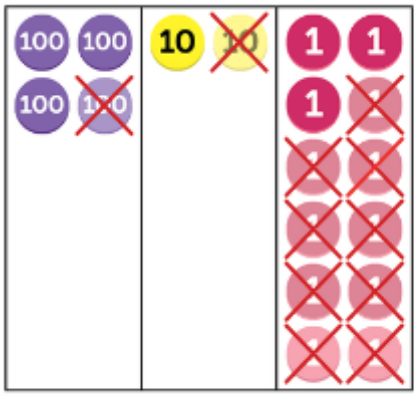
Subtraction

Counters Method:

What is the difference between 432







The difference between 432 and 119 is 313.

Abstract Calculations:

Commutative	Inverse
1728 - 4 = 1724	1724 + 4 = 1728
1728 - 1724 = 4	4 + 1724 = 1728

Column Subtraction:

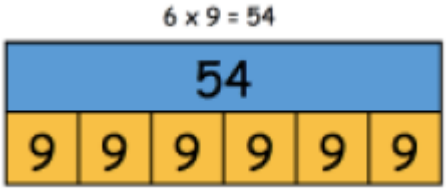
$$\begin{array}{r} 5\ 8\ 9\ 7 \\ -\ 3\ 7\ 2\ 5 \\ \hline 2\ 1\ 7\ 2 \end{array}$$

$$\begin{array}{r} 5\ 3\ {}^{3}\not{4}\ {}^{18}\not{8} \\ -\ 4\ 1\ 3\ 9 \\ \hline 1\ 2\ 0\ 9 \end{array}$$

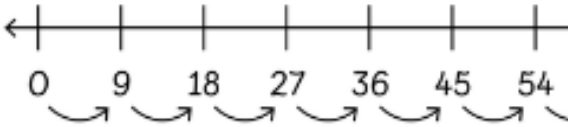
Year 4

Multiplication

Bar model:

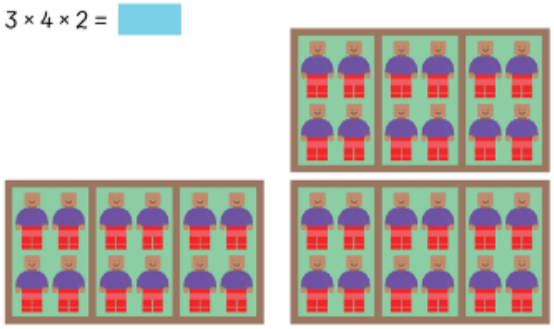


Number line method:



Multiply 3 numbers:

3 × 4 × 2 = ☐



3 × 4 = 12

3 × 4 × 2 = 12 × 2
= 24

Lulu receives 24 mini figures.

Array method:

4 × 6 = ☐

6 × 4 = ☐

Year 4

Multiplication

Multiplying by 10:

Find the product of 30 and 9.

$30 \times 9 =$ ☐

Method 1

$\underbrace{30 + 30 + \ldots + 30}_{\text{9 thirties}} =$ ☐

Method 2

$30 \times 9 = 9 \times 30$
$= 9 \times 3 \text{ tens}$
$= 27 \text{ tens}$
$= 270$

Method 3

$30 \times 9 = 3 \times 10 \times 9$
$= 3 \times 90$
$= 90 + 90 + 90$
$= 270$

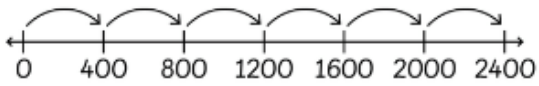
Multiplying by 100:

$6 \times 400 =$ ☐

Method 1

$\underbrace{400 + 400 + \ldots + 400}_{\text{6 four hundreds}} = 2400$

Method 2



Method 3

$6 \times 4 = 24$

$6 \times 4 \text{ hundreds} = 24 \text{ hundreds}$

$6 \times 400 = 2400$

Method 4

$6 \times 400 = 6 \times 4 \times 100$
$= 24 \times 100$
$= 2400$

Bridged and short multiplication:

Year 4

Multiplication

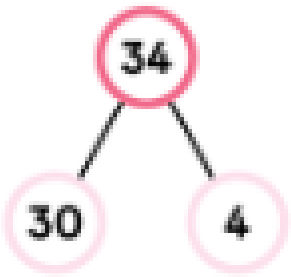
Bridged and short multiplication:, including the use of number bond diagrams:

$7 \times 34 =$ **238**

(a) $30 \times 7 =$ **210**

$4 \times 7 =$ **28**

$34 \times 7 =$ **238**



(b)

		3	4
×			7
		2	8
+	2	1	0
	2	3	8

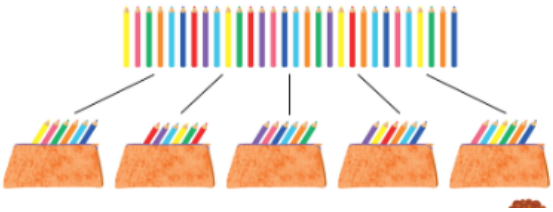
(c)

	2		
	3	4	
×		7	
2	3	8	

Year 4

Division

Division by grouping:



Grouping with remainders:

There are 13 flowers.

13 ÷ 3 = 4 with 1 left over
The quotient is 4.
The remainder is 1.

Dividing using multiplication:

$30 \div 6 = 5$
$5 \times 6 = 30$

Dividing by 1, 10 and 100:

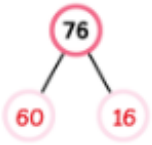
Year 4

Division

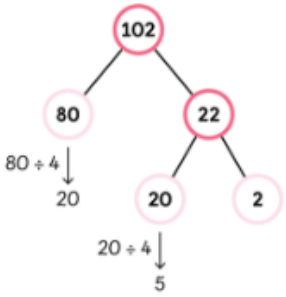
Dividing with remainders:

76 ÷ 3 = 25 r 1

$$\begin{array}{r} 2\,5 \\ 3\overline{)\,7\,6} \\ -\,6\,0 \\ \hline 1\,6 \\ -\,1\,5 \\ \hline 1 \end{array}$$



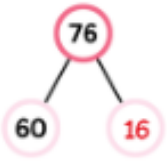
The quotient of 76 ÷ 3 is 25 and the remainder is 1 .



Dividing without remainders:

(a) 76 ÷ 2 = 38

$$\begin{array}{r} 3\,8 \\ 2\overline{)\,7\,6} \\ -\,6\,0 \\ \hline 1\,6 \\ -\,1\,6 \\ \hline 0 \end{array}$$



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Division

Counters Method:

46 ÷ 2 = ☐

Method 1

Step 1 Divide 4 tens by 2.

4 tens ÷ 2 = 2 tens
40 ÷ 2 = 20

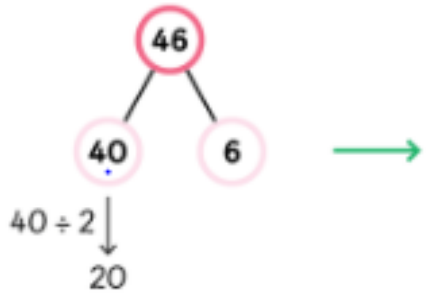
Step 2 Divide 6 ones by 2.

6 ones ÷ 2 = 3 ones
6 ÷ 2 = 3

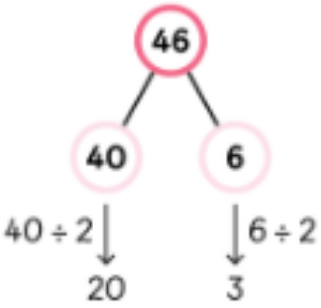
46 ÷ 2 = 23

Number Bond Method:

Step 1 Divide the tens by 2.



Step 2 Divide the ones by 2.



46 ÷ 2 = 20 + 3
= 23