



## Year 4

### Written Calculations Policy

At Blakesley Hall School we want all of our children to enjoy and succeed in Maths. We teach children to calculate mentally wherever possible and this is supported by written methods which are appropriate to the level of understanding of the pupils. We have created this Written Calculations Policy to support pupils, teachers and parents so that all children are taught the correct method for their age and ability.

### Advice for parents

As well as teachers, we know that parents have an important role in our pupil's learning. All parents should be helping children with Maths at home. Therefore, we feel it is crucial to share the calculations policy with you all, so that children are taught the same methods for maths at home as in school.

- Please take some time to look at the methods your child is being taught in school, and practise these together. If you are unsure of your child's level, then please ask their teacher.
- It would be a good idea to display the calculations policy you have been given for your child on the wall close to where they do their homework.
- When children are doing their Numeracy homework, please check that they are using the correct methods appropriate for their level of learning. Please be aware that the strategies are progressive and should be taught/practised in order.
- If you have any questions about any of the methods, please come in and speak to your child's teacher. **We need to work together to help our children to improve.**

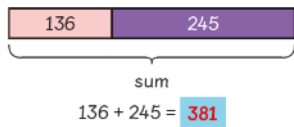
We hope that you find this information helpful.

# Addition

National Curriculum expectations are that children in Year 4: use numbers within 10,000 for addition and subtraction, add and subtract numbers with up to 4 digits using the formal written methods of column addition and subtraction where appropriate and estimate and use inverse operations to check answers to a calculation.

Children will continue to use and develop their mental strategies for addition. They can also use objects to support written methods.

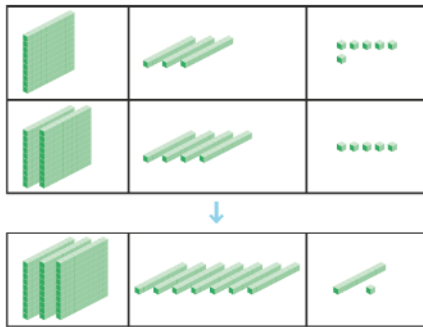
Find the sum of 136 and 245.



When we add numbers, we get their sum, or total.



1 Use base-ten blocks



Add ones.  
Add tens.  
Add hundreds.

$$136 + 245 = 381$$

The sum of 136 and 245 is 381.

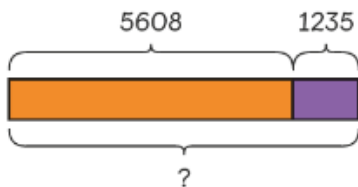
3 Use column addition

$$\begin{array}{r} 136 \\ + 245 \\ \hline 381 \end{array}$$

The sum is 381.

Encourage the children to estimate their answers before answering the question.

5608 tickets for a charity concert were sold before the day of the concert.  
On the day of the concert, another 1235 tickets were sold.



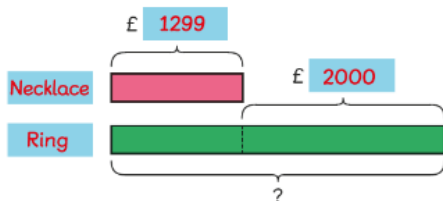
Let's estimate.

$$\begin{array}{r} 5600 \\ + 1200 \\ \hline 6800 \end{array}$$

How can we find the total number of concert tickets sold?

Use word problems to consolidate children's understanding and apply their mathematical skills.

- 1 Ruby's mother bought a necklace and a ring.  
The necklace cost £1299.  
She paid £2000 less for the necklace than she paid for the ring.  
How much did she pay for the necklace and the ring altogether?



Which costs more, the necklace or the ring? Should we add or subtract to find the cost of the ring?

Children to use the bar model to support their understanding of the problem.

$$1299 + 2000 = 3299$$

The ring cost £ 3299 .



# Subtraction

National Curriculum expectations are that children in Year 4: use numbers within 10,000 for addition and subtraction, add and subtract numbers with up to 4 digits using the formal written methods of column addition and subtraction where appropriate and estimate and use inverse operations to check answers to a calculation.

Children will continue to use and develop their mental strategies for subtraction. They can also use objects to support written methods.


**1** Find the difference between 358 and 128.


boys 358  
 girls 128      difference

$358 - 128 = 230$

When we subtract numbers, we get the difference.

Use base-ten blocks

358 

subtract 128       
$$\begin{array}{r} 358 \\ - 128 \\ \hline 230 \end{array}$$

The difference between 358 and 128 is 230.

Use column subtraction, as shown here:

3	4	3	7
-	2	0	1
1	4	2	1

**Step 1** Subtract the ones.  
7 ones - 6 ones = 1 one

**Step 2** Subtract the tens.  
3 tens - 1 ten = 2 tens

**Step 3** Subtract the hundreds.  
4 hundreds - 0 hundreds = 4 hundreds

**Step 4** Subtract the thousands.  
3 thousands - 2 thousands = 1 thousand

Encourage the children to estimate their answers beforehand and use word problems to consolidate children's understanding and apply their mathematical skills.

### In Focus

A baker made 2750 chocolate cookies and 1638 vanilla cookies.  
He sold 3195 cookies altogether.  
How many cookies did he have left?

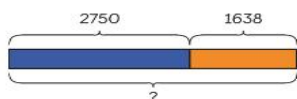


### Let's Learn

**1** Understand the problem

Who?	baker
What?	cookies

Make a plan



Find the total number of cookies he made.



Then, subtract the number of cookies sold.



Children to use the bar model to support their understanding of the problem.

# Multiplication

National Curriculum expectations are that children in Year 4 must recall multiplication and division facts for multiplication tables up to  $12 \times 12$  and multiply two-digit and three-digit numbers by a one-digit number using formal written method. Pupils will need to solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers.

Ensure the children are confident in their understanding of multiplication.

## Multiplying by 6

### In Focus



How many flowers are there altogether?

### Let's Learn

1



1 group of 6  
 $1 \times 6 = 6$



2 groups of 6  
 $2 \times 6 = 12$



3 groups of 6  
 $3 \times 6 = 18$



4 groups of 6  
 $4 \times 6 = 24$

There are 24 flowers altogether.

By the end of Year 4, it is the National Curriculum expectation that ALL children know their times tables up to  $12 \times 12$ . This needs to be taught and consolidated alongside the use of regular practise tests.

Here is an example of the formal written method used, use it alongside models and images to consolidate children's learning.

### In Focus

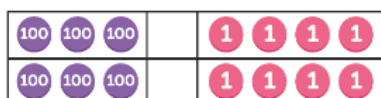
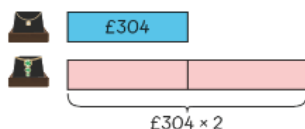


This costs twice as much.

How much does cost?

### Let's Learn

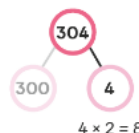
1



$$\begin{array}{r} 300 \times 2 = 600 \\ 4 \times 2 = 8 \\ \hline 304 \times 2 = 608 \end{array}$$

costs £608.

2  $304 \times 2 = 608$



$$\begin{array}{r} 304 \\ \times 2 \\ \hline 8 \end{array}$$



$$\begin{array}{r} 304 \\ \times 2 \\ \hline 8 \\ + 600 \\ \hline 608 \end{array}$$

3  $3 \times 123 = 369$



$$3 \times 100 = 300 \quad 3 \times 20 = 60 \quad 3 \times 3 = 9$$

$$3 \times 123 = 300 + 60 + 9 = 369$$

$$\begin{array}{r} 123 \\ \times 3 \\ \hline 9 \\ 60 \\ + 300 \\ \hline 369 \end{array}$$

multiply the ones  
multiply the tens  
multiply the hundreds

Ensure children are confident in these methods by applying them to word problems with increasingly harder numbers.

# Division

National Curriculum expectations are that children in Year 4 must recall multiplication and division facts for multiplication tables up to  $12 \times 12$  and divide two-digit and three-digit numbers by a one-digit number using formal written method. Pupils will need to solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers.

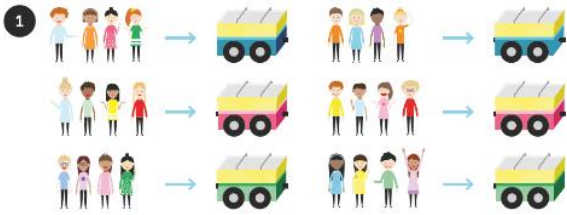
Ensure the children are confident in their understanding of division.

### In Focus



A roller coaster with 6 carriages, all of the same size, can seat 24 people.  
How many people does each carriage seat?

### Let's Learn



$$24 \div 6 = 4$$

$$6 \times 4 = 24$$

$$24 \div 6 = 4$$

Each carriage can seat 4 people.  
When 24 is divided by 6, the quotient is 4.

Place emphasis on the term 'quotient' and encourage pupils to use this when feeding back in the lesson. Identify the problem as 'sharing' as we have shared the number of pupils (dividend) equally into the carriages (divisor).

Here is an example of the formal written method used, use it alongside models and images to consolidate children's learning. Begin with dividing 2 digit numbers then progress onto dividing 3 digit numbers.

### In Focus

made 408 pieces of chocolate to sell.



She put them into boxes of 4.  
How many boxes did she get?

### Let's Learn

1  $4 \div 4 = 1$

$$4 \div 4 = 1$$

How many groups of 4 in 4?



2  $40 \div 4 = 10$

$$40 \div 4 = 10$$

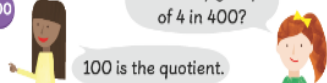
How many groups of 4 in 40?



3  $400 \div 4 = 100$

$$400 \div 4 = 100$$

How many groups of 4 in 400?



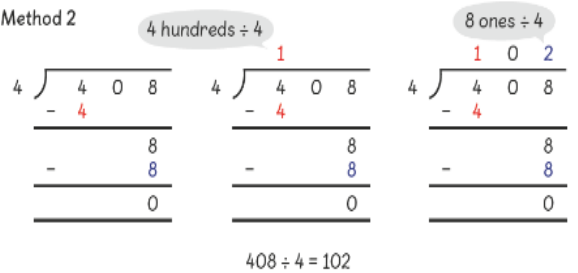
4  $408 \div 4 = 102$



Method 1



Method 2



She got 102 boxes.

Ensure children are confident in these methods by applying them to word problems with increasingly harder numbers.