CHALKWELL HALL JUNIOR SCHOOL

Mathematics and Calculation Policy

Reviewed and Approved by:	**Governing Body**
Date Reviewed:	**January 2026**
Next Review Date:	**January 2029**

Tenacitas Trust

CHALKWELL HALL JUNIOR SCHOOL
MATHEMATICS POLICY

Intention

It is the intention of our mathematics curriculum to provide pupils with a secure understanding of number, geometry and data. We wish to develop pupils who are fluent in arithmetic, and can make reasoned responses to problems using logic and understanding. It is our intention to develop pupils' skills through discussion and the use of the concrete/pictorial/abstract approach so that everyone can access a mathematics curriculum that offers support and challenge to all abilities. We wish to develop pupils who are confident and resilient, and can develop a love of mathematics in order to succeed.

Implementation

At Chalkwell Hall Junior School, we follow the Maths – No Problem scheme of work, which is based on the Singapore approach to teaching maths. This system provides high quality teaching resources and lesson plans for all year groups, and provides pupils with the level of challenge appropriate to their year group. Class teachers will then differentiate to meet the needs of individual learners. The Maths – No Problem scheme provides long-term, medium-term and short-term planning. Teachers differentiate the Maths – No Problem approach to meet the needs of their class/set.

In years 3 and 4, mathematics is taught within registration classes. In years 5 and 6, mathematics is taught in sets. The hierarchy of these sets is considered every year in order to best meet the needs of the cohort. In general, there will be challenge sets and support sets. The organisation of these sets is initially determined by:

- their previous year's experiences and results (formative and summative)
- information gathered from their teachers regarding attitude and motivation
- baseline assessments

All pupils must have regular access to mathematics, appropriate to their stage of development. Work must be differentiated to aid all pupils' learning. Support will be given in a variety of ways including resources and adult support. Challenge will be provided for our more-able pupils through a variety of mastery tasks. Where a pupil has been identified as having specific needs, these are addressed as part of their ISP.

Alongside mathematics classes and sets, pupils may be taken out for further small group intervention work with qualified teachers and/or support staff to secure their understanding or to allow opportunities for pre-learning to prepare them for upcoming challenges.

To promote pupils' rapid recall of key number facts, the school runs two whole-school progressive challenges that alternate weekly. Pupils who achieve the challenge that week receive either a certificate (bonds) or a star (tables) and their achievements are celebrated in assembly. Each class teacher also gives a weekly Maths Champ award during Friday's celebration assembly.

In order to support pupils in their learning, both at home and at school, they are provided with access to Times Tables Rockstars/Numbots and MyMaths. Regular homework and competitions are set on these programs.

Mathematics is complemented by worthwhile and challenging cross-curricular tasks that provide opportunities for pupils to use and apply their subject knowledge to deepen understanding.

Impact

Pupils mark their work on a daily basis and teachers identify pupils who require support and/or further challenge. Pupils self-assess against the learning objective using the whole-school three-tick system. Feedback marking is provided on a weekly basis in order to re-inforce and extend pupils' knowledge and understanding.

Pupils' progress and attainment is recorded using the online Learning Ladder program. This provides teachers with data to measure progress and identify gaps in order to inform planning. Regular meetings are held in order to analyse the data and create intervention groups according to the cohort's needs.

Key objectives are used by the teachers in order to assess whether pupils are working towards the expected standard, within the expected standard or at greater depth. In years 3 to 5, Maths – No Problem Insights is used to provide a summative assessment twice a year. In year 6, SATs papers are used to provide a summative assessment on a half-termly basis. The data provided by these tests is used to inform future teaching.

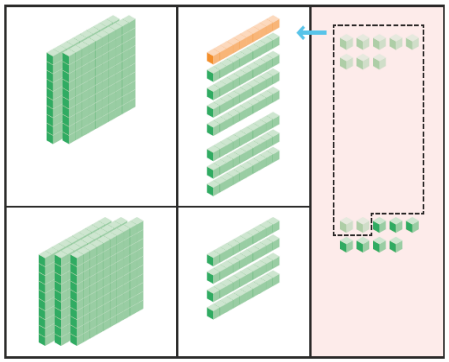
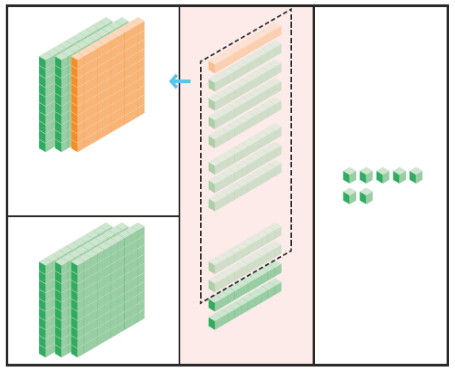
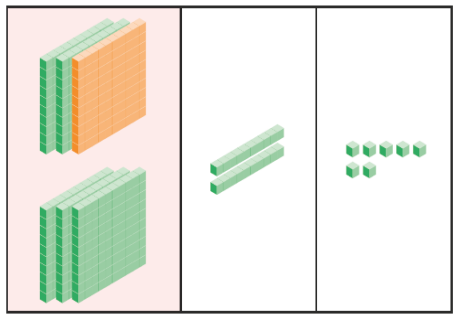
Year 6 take part in the national SATs in May, and the Multiplication Tables Check is undertaken by year 4 pupils in June.

Regular monitoring is undertaken by the Area of Learning Team to ensure quality of teaching and learning.

Calculation Policy

Below are the examples of how key written strategies are delivered through the school in line with the Maths No Problem approach to teaching.

Addition

Year	Learning Ladder Target	Calculation Strategies
Three	I can add 2 digit numbers and 3 digit numbers using column addition.	**Let's Learn** Add 278 and 349. Step 1 Add the ones. 8 ones + 9 ones = 17 ones Regroup the ones. 17 ones = 1 ten + 7 ones The sum is the the total of 278 and 349.  h t o 2 1 7 8 + 3 4 9 7 Step 2 Add the tens. 1 ten + 7 tens + 4 tens = 12 tens Regroup the tens. 12 tens = 1 hundred + 2 tens  h t o 1 1 2 7 8 + 3 4 9 2 7 Step 3 Add the hundreds. 1 hundred + 2 hundreds + 3 hundreds = 6 hundreds  h t o 1 1 2 7 8 + 3 4 9 6 2 7 278 + 349 = 627 Pupils will begin by working with 2 and 3 digit numbers which do not require renaming, in order to master the layout and process of column addition. Then they will use a variety of resources, including dienes as modelled here, to understand the process of renaming before applying it to column methods. Finally, to achieve mastery, their understanding of the process will be applied to problem solving tasks.

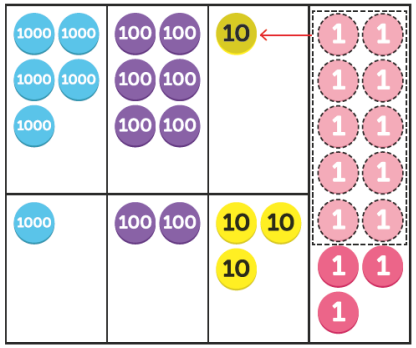
Four Five	I can add 4 digit numbers using formal column addition. I can add numbers with more than 4 digits using column addition.	

Let's Learn

1 Find the sum of 5608 and 1235.

Step 1 Add the ones. 8 ones + 5 ones = 13 ones

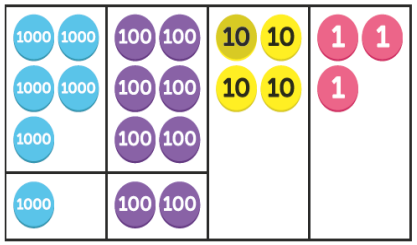
Rename the ones. 13 ones = 1 ten and 3 ones



$$\begin{array}{r} {\scriptstyle 1} \\ 5\,6\,0\,8 \\ +\,1\,2\,3\,5 \\ \hline 3 \end{array}$$

Step 2 Add the tens.

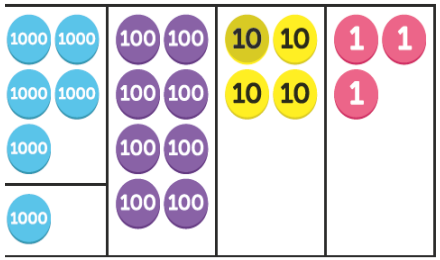
0 tens + 3 tens + 1 ten = 4 tens



$$\begin{array}{r} {\scriptstyle 1} \\ 5\,6\,0\,8 \\ +\,1\,2\,3\,5 \\ \hline 4\,3 \end{array}$$

Step 3 Add the hundreds.

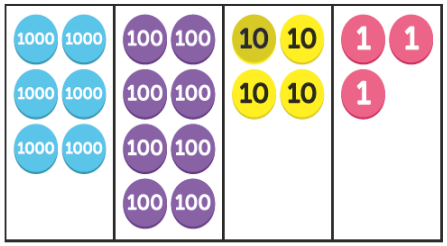
6 hundreds + 2 hundreds = 8 hundreds



$$\begin{array}{r} {\scriptstyle 1} \\ 5\,6\,0\,8 \\ +\,1\,2\,3\,5 \\ \hline 8\,4\,3 \end{array}$$

Step 4 Add the thousands.

5 thousands + 1 thousand = 6 thousands

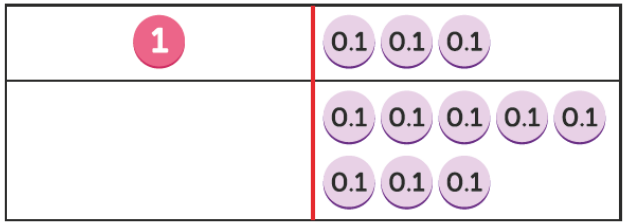
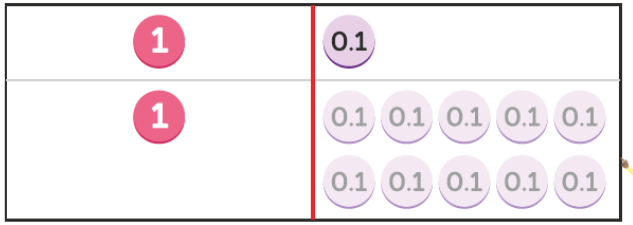


$$\begin{array}{r} {\scriptstyle 1} \\ 5\,6\,0\,8 \\ +\,1\,2\,3\,5 \\ \hline 6\,8\,4\,3 \end{array}$$

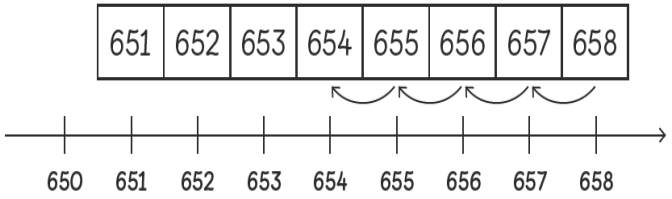
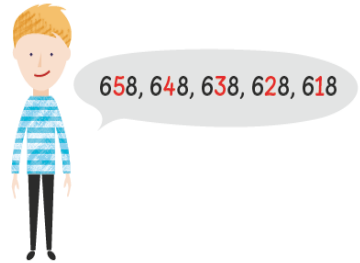
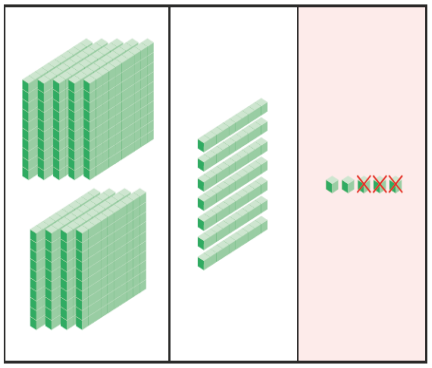
5608 + 1235 = 6843

6843 tickets were sold.

Pupils will begin by using concrete resources, such as place value counters shown above, to understand the process of renaming for larger numbers.
Once confident, their mastery of the process will be challenged through word problems. This builds into work using decimals through the context of money.
For more information on column addition using decimals, see below.

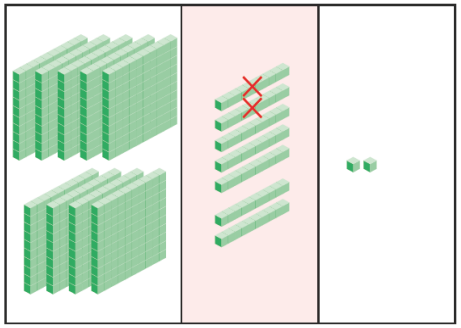
Four/Five	I can add 4 digit decimals in context using formal column addition.	**Let's Learn** 1 What is the total cost of the  and  ? £1.30 + £0.80 = ☐   £ 1 . 3 0 + £ 0 . 8 0 _____ 1 £ 1 . 3 0 + £ 0 . 8 0 _____ £ 2 . 1 0  11 tenths = 1 one and 1 tenth Pupils will continue to use concrete resources as required, such as pace value counters, to develop their understanding of the process and relative place value of each digit. Decimal calculations will include tenths and hundredths, and include real world contexts through application to money. Once confident with the method, the mastery of the process will be challenged through problem solving activities.
Five and beyond	These skills will be developed in depth through increasingly challenging word problems and using larger numbers up to millions or to up to three decimal places	

Subtraction

Year	Learning Ladder Target	Calculation Strategies
Three	I can mentally subtract ones, tens and hundreds from a 3 digit number.	Subtract 4 from 658. Method 1 Count back from 658.  658 − 4 = 654 Subtract 40 from 658. Method 1 Count back in tens from 658. 658 − 40 = 618  Building on knowledge from KS1, we explore their written methods and how they can be used to solve problems using mental calculations
Three	I can partition a number and subtract using column subtraction without decomposing (2 and 3 digit numbers)	Subtract 723 from 975. Step 1 Subtract the ones. 5 ones − 3 ones = 2 ones  h t o 9 7 5 − 7 2 3 2 Pupils will begin by working with 2 and 3 digit numbers which do not require renaming/decomposing, in order to master the layout and process of column subtraction. Then they will use a variety of resources, including dienes as modelled here, to develop and show their understanding. Finally, to achieve mastery, their understanding of the process will be applied to problem solving tasks.

Step 2 Subtract the tens.

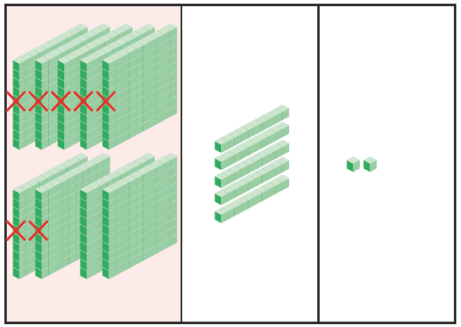
7 tens − 2 tens = 5 tens



	h	t	o
	9	7	5
−	7	2	3
		5	2

Step 3 Subtract the hundreds.

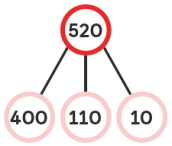
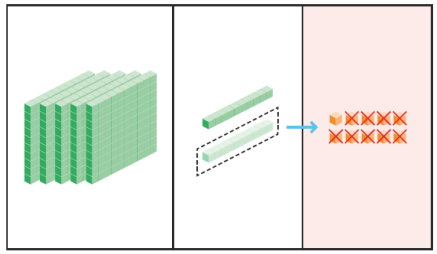
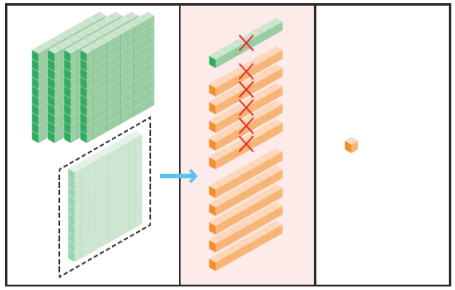
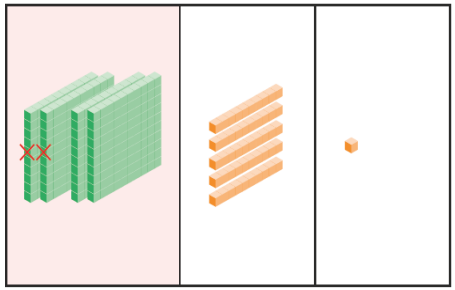
9 hundreds − 7 hundreds = 2 hundreds



	h	t	o
	9	7	5
−	7	2	3
	2	5	2

975 − 723 = 252

There were 252 beads left in the jar.

Three	I can subtract 2 and 3 digit numbers using column subtraction with decomposing.	Subtract 269 from 520.  Step 1 Regroup 1 ten into 10 ones. Subtract the ones. 10 ones − 9 ones = 1 one  h t o 5 1 2 10 0 − 2 6 9 1 They will use a variety of resources, including dienes as modelled here, to understand the process of renaming/decomposition. This begins by looking at calculation involving just one decomposition (e.g. 342 – 216) before moving up to decomposition across multiple columns. Step 2 Regroup 1 hundred into 10 tens. Subtract the tens. 11 tens − 6 tens = 5 tens  h t o 4 5 1 11 2 10 0 − 2 6 9 5 1 Step 3 Subtract the hundreds. 4 hundreds − 2 hundreds = 2 hundreds  h t o 4 5 1 11 2 10 0 − 2 6 9 2 5 1 520 − 269 = 251

<table>
<tr>
<td></td>
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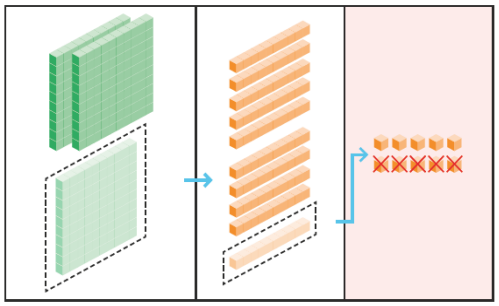
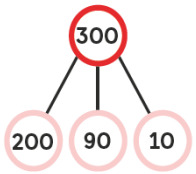
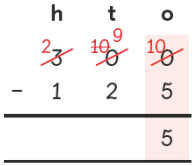
<td>
Subtract 125 from 300.
Step 1 Regroup 1 hundred into 10 tens.
Regroup 1 ten into 10 ones.
Subtract the ones.
10 ones − 5 ones = 5 ones





The final step in column subtraction in Year Three is how to decompose hundreds to ones, as shown in the example here.
Once confident with the method in isolation, their mastery of the topic will be challenged through problem solving activities.
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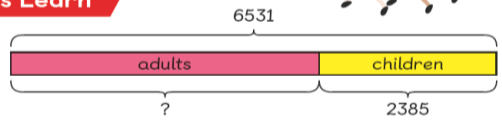
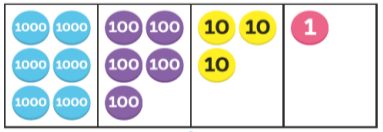
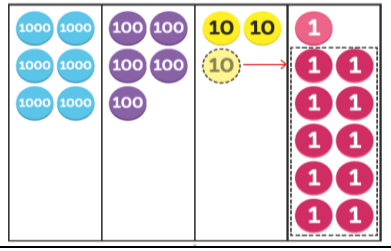
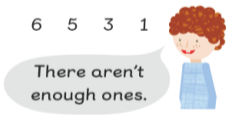
<tr>
<td>Four

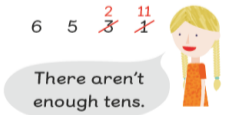
Five</td>
<td>I can subtract 4 digit numbers by decomposing using column subtraction.

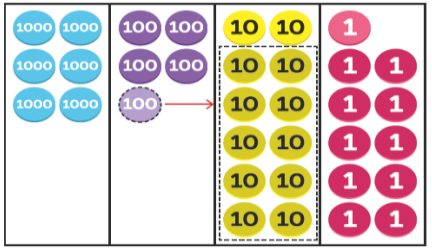
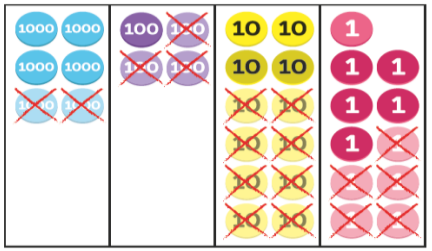
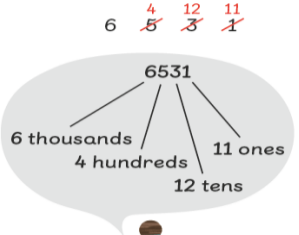
I can subtract numbers with more than 4 digits using column subtraction.

Building on their understanding of column method from Year Three, pupils will now extend their knowledge using larger numbers.
Resources such as place value counters may be used.</td>
<td>
6531 people signed up for a run.
2385 of them are children.
How many adults signed up?

Let's Learn
1


Subtract 2385 from 6531.








6531 − 2385 = 4146
4146 adults signed up.
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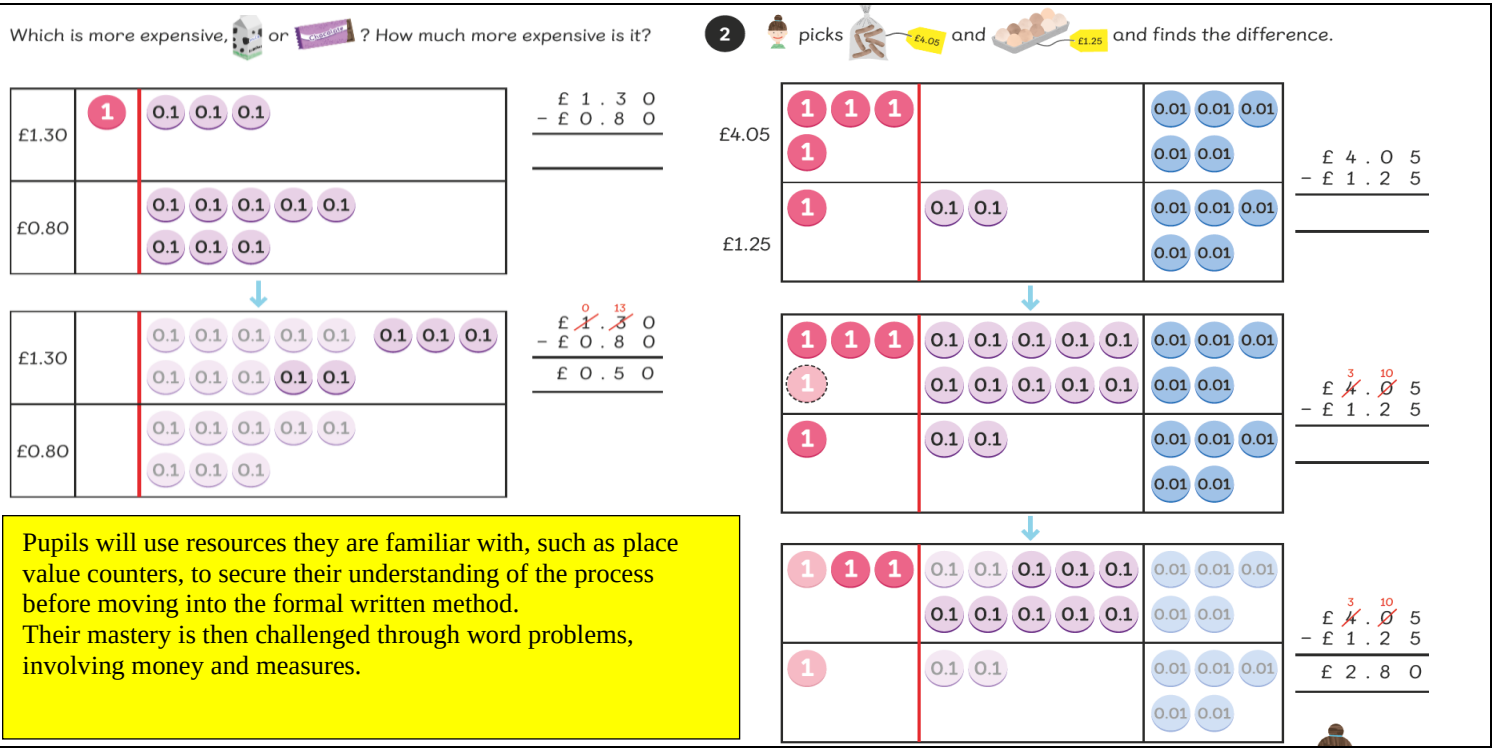
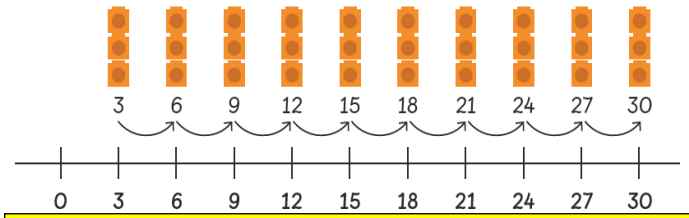
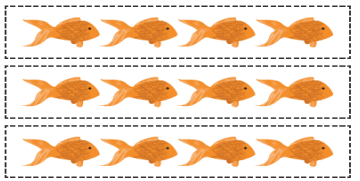
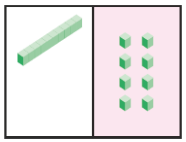
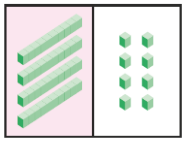
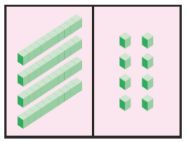
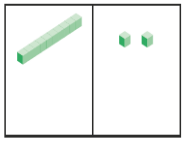
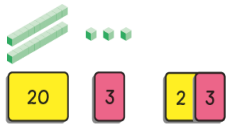
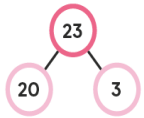
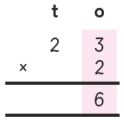
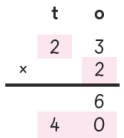
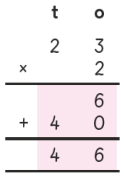
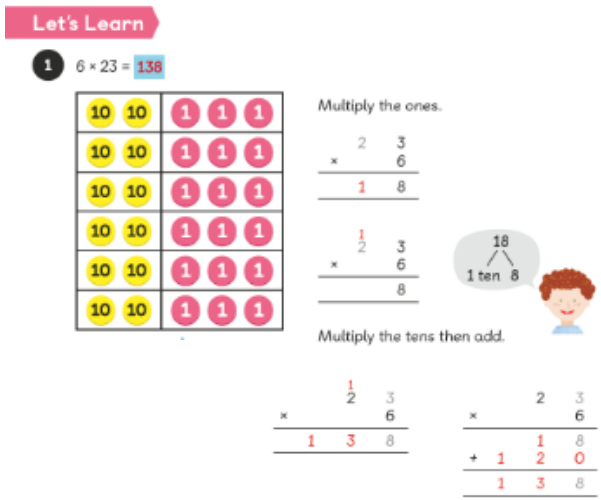
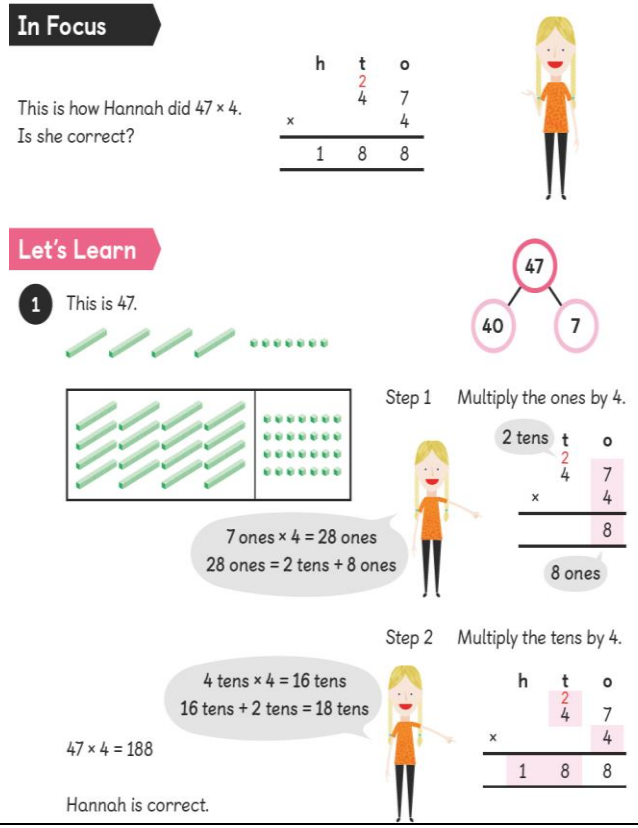
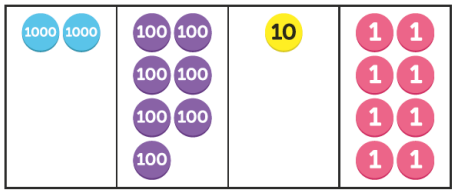
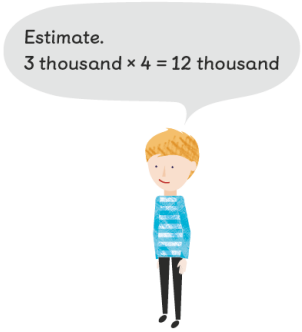
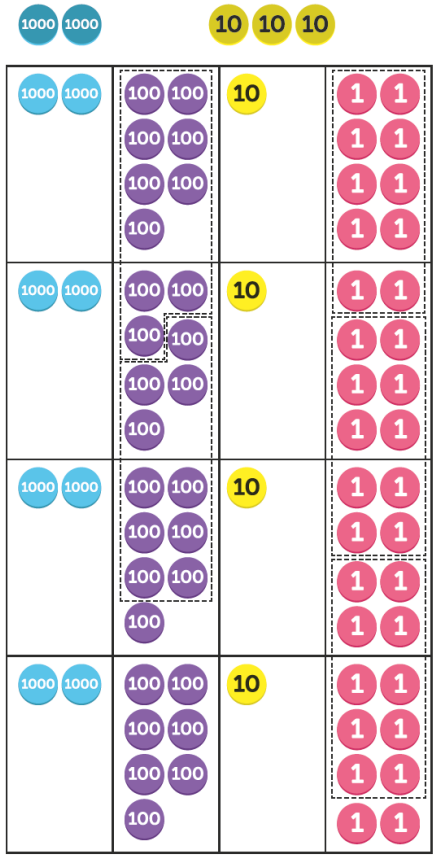
</table>

Four/Five	I can subtract 4 digit number decimals in context using formal column subtraction.	 Pupils will use resources they are familiar with, such as place value counters, to secure their understanding of the process before moving into the formal written method. Their mastery is then challenged through word problems, involving money and measures.

Multiplication

Year	Learning Ladder Target	Calculation Strategies
KS1	I can multiply using concrete objects, pictorial representations, arrays and repeated addition.	Count in threes.  In introducing multiplication, the focus is on ensuring a concrete understanding of multiplication as 'groups of.'  How many fish are there in all?  There are 12 fish in all. 3 groups of 4 3 × 4 = 12
Three	I can partition a number into 10's and 1's to multiply (distributive law). **Leading to:** I can multiply 2 and 3 digit numbers by a 1 digit number using the expanded column method. Building on their concrete understanding of multiplication, and growing confidence with mental recall of times table facts, the focus now moves to more formal written methods. Resources such as dienes may be used to help secure or show their understanding. Those confident with the method will have their mastery challenged through word problems.	Method 2 12 × 4 = ☐ Multiply 12 by 4.     Step 1 Multiply the ones by 4. 2 ones × 4 = 8 ones Step 2 Multiply the tens by 4. 1 ten × 4 = 4 tens Step 3 2 ones × 4 = 8 1 ten × 4 = 40 12 × 4 = 8 + 40 = 48 There are 48  in four boxes.   **In Focus** There are 23 children in a class. How many children are there in 2 classes?  **Let's Learn**  Step 1 Multiply the ones by 2. 3 ones × 2 = 6 ones Step 2 Multiply the tens by 2. 2 tens × 2 = 4 tens Step 3 Add the products. 6 + 40 = 46 23 × 2 = 46 There are 46 children in the 2 classes.   

Three/ Four	I can multiply 2 and 3 digit numbers by a 1 digit number using the formal column method.	 Through use of concrete resources, such as place value counters or dienes, children will extend their knowledge of formal methods by moving to 'short' column methods. When confident, their depth of understanding will be challenged through larger numbers and problem solving.	

Four/ Five	I can multiply 4 digit numbers by 1 digit numbers using the formal column method. With the numbers involved in calculations increasing in size, pupils will be encouraged to experiment with both long and short methods for multiplication. They will also be challenged to explain how and why they used the methods, using verbal explanation and resources to support their processing. When confident, their mastery may be challenged through missing number problems, error finding, problem solving and investigations.	**1** 2718 × 4 = ☐ 2000 × 4 = 8 000 700 × 4 = 2 800 10 × 4 = 40 8 × 4 = 32 2718 × 4 = 10 872  2 thousands 7 hundreds 1 ten 8 ones 8 thousands 28 hundreds 4 tens 32 ones **2** 2718 × 4 = ☐ 2 7 1 8 × 4 3 2 4 0 2 8 0 0 + 8 0 0 0 1 0 8 7 2 2718 × 4 = 10 872  **3** 2718 × 4 = ☐ 3 2 7 1 8 × 4 2 3 2 7 1 8 × 4 7 2 2 3 2 7 1 8 × 4 8 7 2 2 3 2 7 1 8 × 4 1 0 8 7 2 

Five	I can multiply TO x TO using formal long multiplication.	

1 14 × 12 = ☐

14 × 10
= 14 × 1 ten
= 14 tens

14 × 2 = 28

14 × 10 = 140
14 × 2 = 28
14 × 12 = 168

14 × 12 = 168

28 × 26 = ☐

$$\begin{array}{r} {\scriptstyle 4} \\ 28 \\ \times\ 26 \\ \hline 8 \end{array} \rightarrow \begin{array}{r} {\scriptstyle 4} \\ 28 \\ \times\ 26 \\ \hline 168 \end{array}$$

2 14 × 22 = ☐

14 × 20
= 14 × 2 tens
= 28 tens

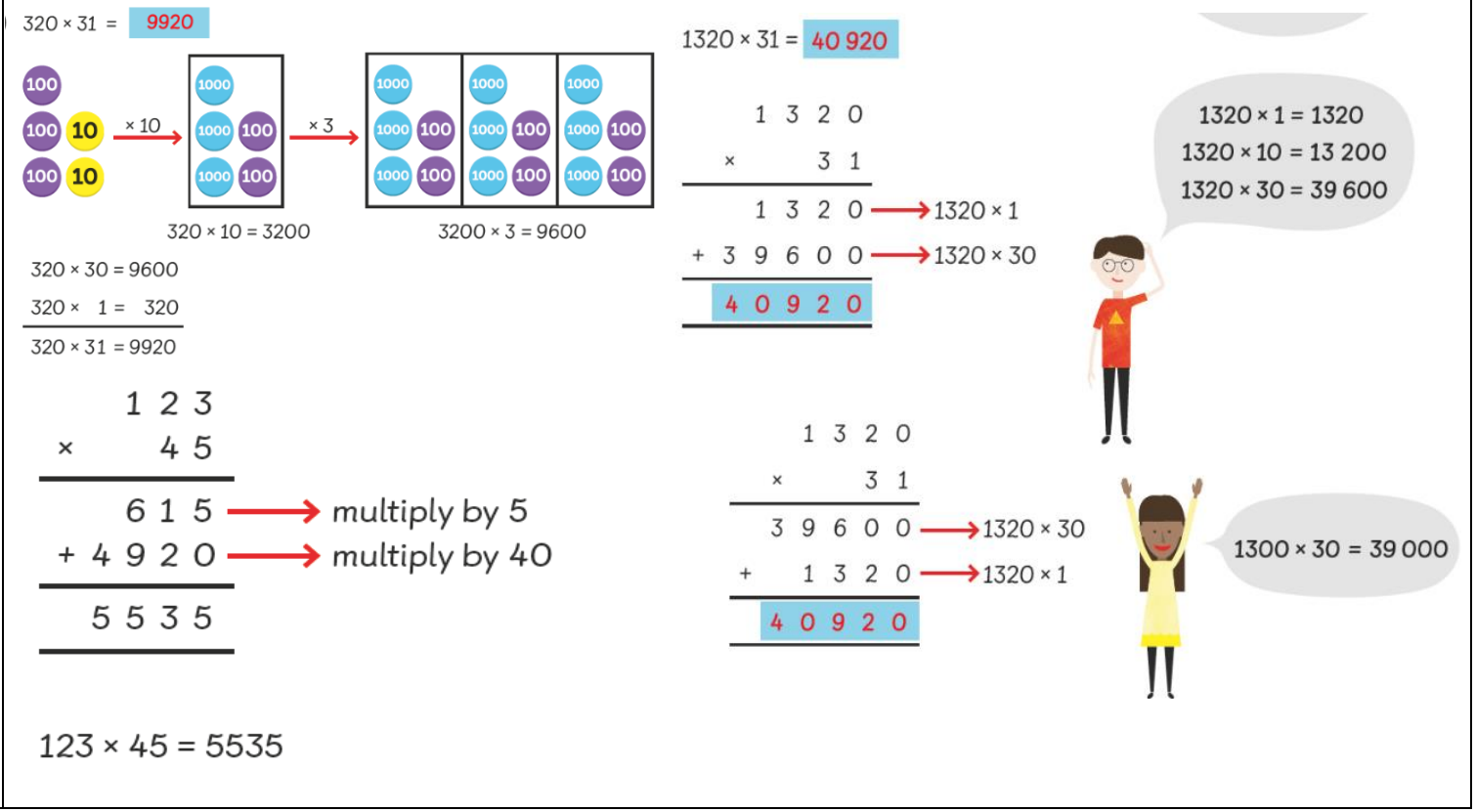
14 × 2 = 28

14 × 20 = 280
14 × 2 = 28
14 × 22 = 308

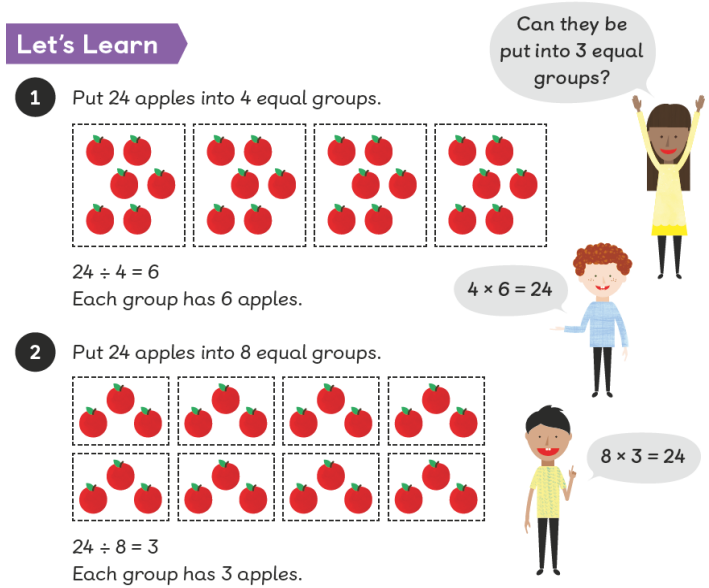
14 × 22 = 308

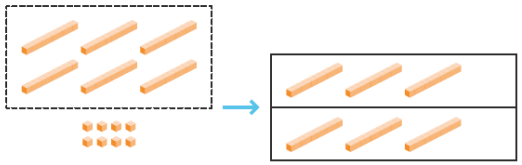
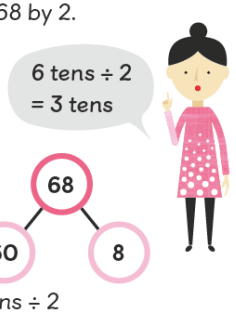
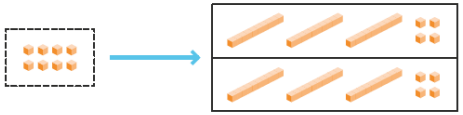
$$\begin{array}{r} {\scriptstyle 1} \\ 28 \\ \times\ 26 \\ \hline 168 \\ 6 \end{array} \rightarrow \begin{array}{r} {\scriptstyle 1} \\ 28 \\ \times\ 26 \\ \hline 168 \\ 56 \end{array}$$

$$\begin{array}{r} {\scriptstyle 1} \\ {\scriptstyle 4} \\ 28 \\ \times\ 26 \\ \hline 168 \\ +\ 56 \\ \hline 728 \end{array} \begin{array}{l} \\ \\ \\ \\ \rightarrow 28 \times 6 \\ \rightarrow 28 \times 20 \\ \\ \end{array}$$

Six	I can use long multiplication to multiply THTO x TO.	

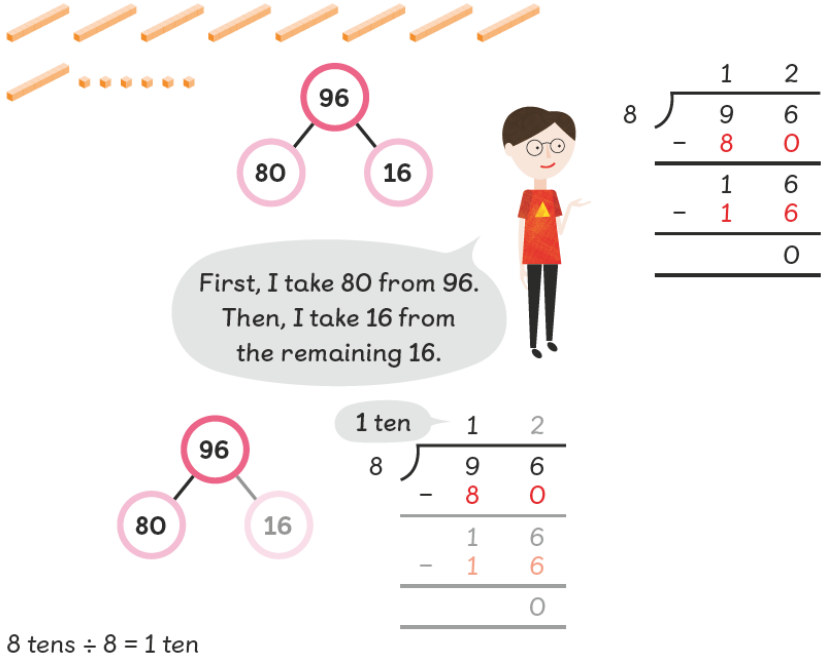
Division

Year	Learning Ladder Target	Calculation Strategies
KS1	I can divide using concrete objects, pictorial representations and arrays and repeated subtraction.	 In introducing division, the focus is on ensuring a concrete understanding of division as requiring an amount to be divided into equal groups. In the early stages, all pupils will be asked to show their using resources and pictures rather than through a written method. The questions will involve simple numbers from times tables they are comfortable with.

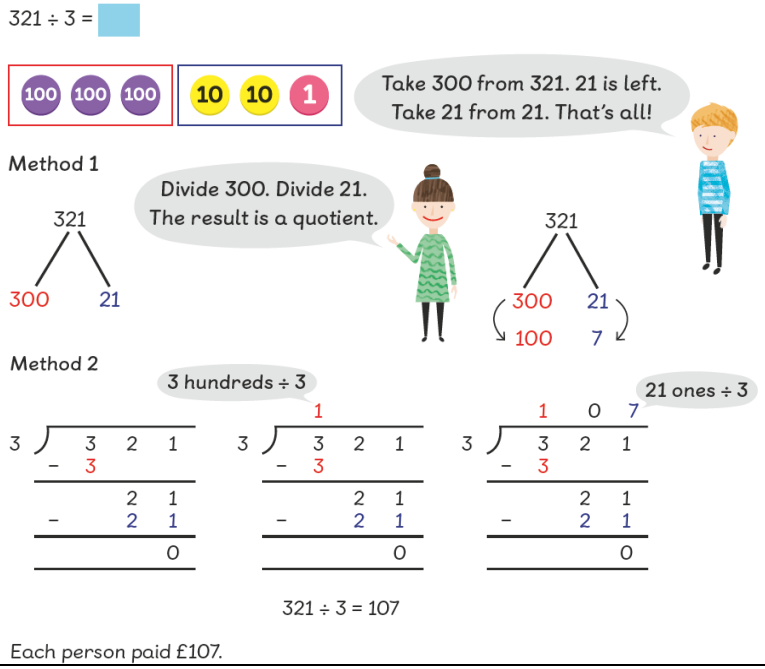
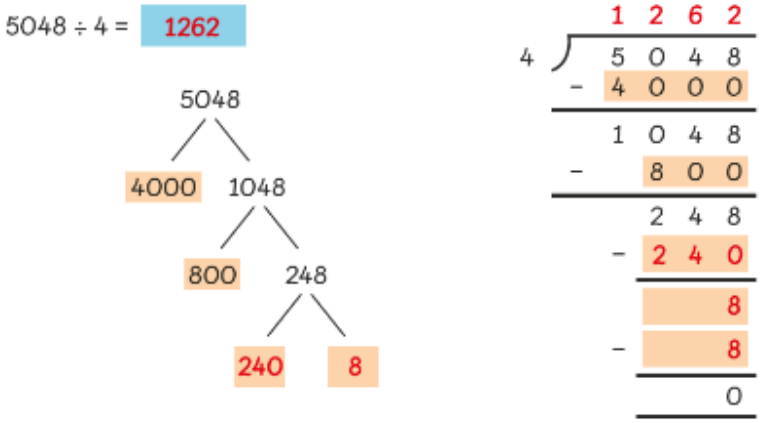
Three	I can divide 2 digit numbers by another number using the tables I know.	To find the number of sweets each person gets, divide 68 by 2. 68 ÷ 2 = ☐ Step 1 Divide 6 tens by 2.   6 tens ÷ 2 Step 2 Divide 8 ones by 2.   6 tens ÷ 2 8 ones ÷ 2 Step 3 Add the results. 68 ÷ 2 = 30 + 4 = 34 Each person gets 34 sweets.

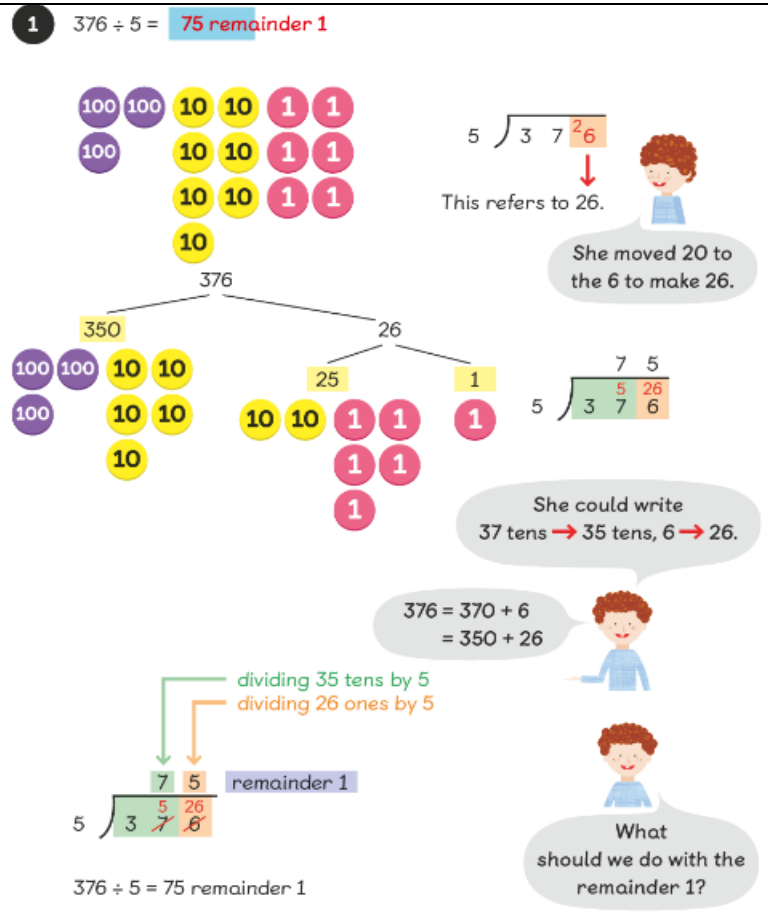
Building on their concrete understanding of division, and growing confidence with mental recall of times table facts, the focus now moves to recoding their working out using a simple, partition-based written method.

Resources such as dienes may be used to help secure or show their understanding.
Those confident with the method will have their mastery challenged through word problems.

Three/ Four	I can divide 2 digit numbers using efficient written methods and related multiplication facts.	

Once confident in using partition based methods to divide numbers from familiar times tables, pupils are introduced to the formal process of long division.
This will still involve known times tables, but may also include related facts (e.g. 80 ÷4).
Pupils working towards an understanding of the method may be supported by dienes equipment or simplified number problems.

Four	I can divide 3 digit numbers using formal written methods.	 Building on their confidence in the methods established in Year Three, pupils' mastery of the method is developed and challenged through increasingly larger numbers. For those working at greater depth, they may be challenged through the introduction of remainders, and through problem solving activities.
Five	I can divide 3 digit and 4 digit numbers by 1 digit using formal written methods.	 Building on their confidence in the methods established in Year Four, pupils' mastery of the method is developed and challenged through increasingly larger numbers. For those working at greater depth, they may be challenged through the introduction of remainders, and through problem solving activities.

Five/ SIx	I can divide numbers up to 4 digits by a 1 digit whole number using short division		Short division will be introduced in Year Five and Six, once pupils have mastered the long division method. They may be supported through the use of place value counters to show the process. It is crucial to their understanding that they can explain the process at every stage of the calculation, rather than simply being able to carry out a process to achieve an answer.

SIx	I can divide numbers up to 4 digits by a 2 digit whole number using long division.	**1**  found the value of 858 ÷ 78 in three different ways. 858 780 78 780 ÷ 78 = 10 78 ÷ 78 = 1 858 ÷ 78 = 11 78) 858 − 780 = 78 − 78 = 0 (1 1) 78) ~~858~~ ~~78~~ ~~78~~ (1 1) As pupils reach the end of Year Six, pupils will be required to demonstrate a range of methods for division as part of the arithmetic test, as well as through problem solving. This may also involve division by two digits numbers using the methods shown above.