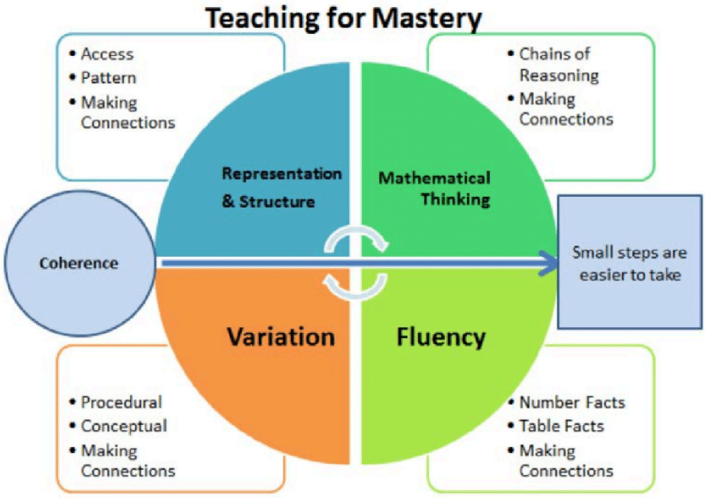
Catton Grove Primary School Calculation Policy

The overall aim is that by the end of Year 6 all children will:

- have a secure knowledge of number facts and a good understanding of the four operations;
- be able to use this knowledge and understanding to carry out calculations mentally and to apply general strategies when using one-digit and two-digit numbers and particular strategies to special cases involving bigger numbers;
- make use of diagrams and informal notes to help record steps and part answers when using mental methods that generate more information than can be kept in their heads;
- have an efficient, reliable, compact written method of calculation for each operation that children can apply with confidence when undertaking calculations that they cannot carry out mentally.

Representation and Structure



'**Representation and structure**' is a key Teaching for Mastery component to consider in order to support children's understanding of calculation. Carefully selecting the most appropriate concrete and pictorial representations is vital to helping children deeply understand a concept.

Over time within a particular learning sequence, these concrete and pictorial representations should slowly be removed so children aren't using them as a means of calculating. Instead, they are present just to expose the underlying structure of the concept. E.g. we do not want children to continue using Base 10 to solve a column multiplication method. We use the Base 10 to help the children understand the process behind each step of the method but over time they become **fluent** in solving this in an abstract form.

This policy is designed carefully with **conceptual and procedural variation** in mind. For example, using a 1:1 correspondence of seeing lots of five (five fingers on one hand) before unitising it into a 5 pence coin. It allows children to **coherently** build their understanding through a logical sequence of steps.

The CPA approach

One of the key learning principles in effective mathematics teaching is the concrete-pictorial-abstract approach, often referred to as the CPA approach. This is integral throughout a child's learning journey, from EYFS to Year 6. The concrete-pictorial-abstract approach, based on research by psychologist Jerome Bruner, suggests that there are three steps (or representations) necessary for pupils to develop understanding of a concept. Reinforcement is achieved by going back and forth between these representations. Within the mastery approach to teaching mathematics, it is commonly known that presenting them together has the most positive impact on a child's learning.

Concrete representation

The active stage - a student is first introduced to an idea or a skill by acting it out with real objects. In division, for example, this might be done by separating apples into groups of red ones and green ones or by sharing 12 biscuits amongst 6 children. This is a 'hands on' component using real objects and it is the foundation for conceptual understanding.

Pictorial representation

The iconic stage - a student has sufficiently understood the hands-on experiences performed and can now relate them to representations, such as a diagram or picture of the problem. In the case of a division exercise, this could be the action of circling objects.

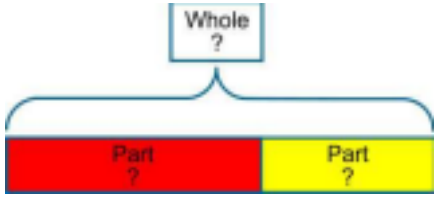
Abstract representation

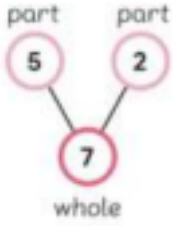
The symbolic stage - a student is now capable of representing problems by using mathematical notation, for example: 12 ÷ 2 = 6 this is the ultimate mode, for it is clearly the most mysterious of the three.

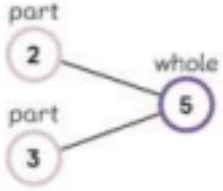
Number Bonds

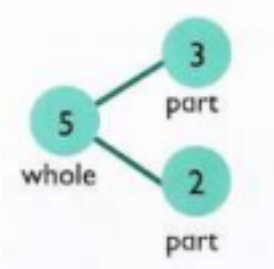
Number bonds refer to how numbers can be combined or added up. It is the 'part-part-whole' relationship of numbers. When talking about number bonds in maths mastery we are referring to how numbers join together and how they can be split up. A lot of emphasis is put into number bonds from EYFS so that children can build up their number sense prior to learning addition and subtraction. In the early stages students would be introduced to number bonds with concrete experiences, for example children could be given 6 linking cubes and guided to understand that 2 and 4 make 6, but that 1 and 5 also make 6.

The part-part-whole model can be shown in the following ways:



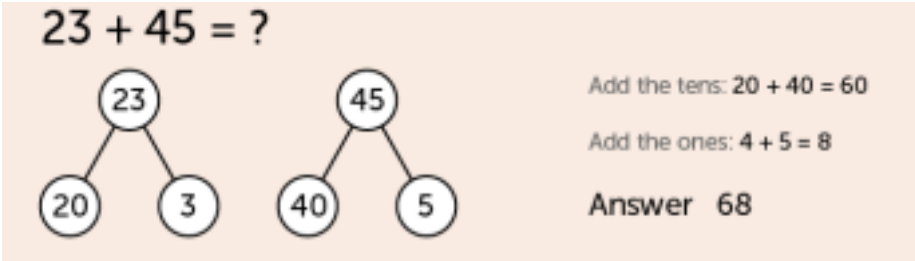








The mastery of number bonds is an important foundation that must be continually revisited throughout the child's school journey. It is required in subsequent mathematical learning and as a basis in the development of mental strategies. For example, children need to know that 7 + 3 = 10 to know that 7/10 + 3/10 = 10/10= 1 whole. A strong number sense allows students to decide what action to take when trying to solve problems in their head.



Year group number bond areas of focus:

Year Group	Teaching focus	Consolidation focus
EYFS	Finding one more and one less with numbers to 10	
Year 1	Number bonds to 10	Finding one more and one less with numbers to 10
Year 2	Number bonds to 20	Number bonds to 10
Year 3	Number bonds to 100 and 1000 Number bonds to 12 and 60 (to help with reading time) Number bonds to 1 (e.g. 1 tenth + 9 tenths makes one whole)	Number bonds to multiples of 10
Year 4	Number bonds to 100, 1000 and 10,000 Number bonds with decimals and fractions to whole numbers (any given whole number) Number bonds to 12 and 60 (to help with reading time)	Number bonds to 100 and 1000 Number bonds to 1 (e.g. 1 tenth + 9 tenths makes one whole)
Year 5	Number bonds with percentages (e.g. 30% + 70% = 100%)	Number bonds to 100, 1000 and 10,000 Number bonds with fractions to whole numbers (any given whole number)

Year 6	All number bonds (e.g. multiples of 10, 100 and 1000) Number bonds to a whole (¼ + ¾ = 1) Number bonds within 1,000,000	All of the Year 3, 4 and 5 teaching focus objectives

Times Tables

It is essential for all pupils to have a firm grasp of all times tables by the time the reach the end of Year 4. Not only is this important for their multiplication work, but is crucial when exploring other topics later in their school time, such as ratio and proportion, fractions, algebra, scale factor and much more!

Following our whole-school focus, teachers ensure that pupils have daily opportunities to practice their times tables. These are the following year group times table expectations:

Year group	Teaching Focus	Consolidation
EYFS	Counting forwards and backwards in ones (including zero)	Being able to place numbers in order and count objects with one to one correspondence accurately
Year 1	Counting in 2s, 5s and 10s	Counting forwards and backwards in 1s (to include some negative numbers)
Year 2	Counting in 2s, 5s and 10s Counting in 50s and 100s	Counting forwards and backwards in 1s (to include some negative numbers)
Year 3	Counting in 4s, 8s and 11s Counting in multiples of 25 and any multiple of 10 (e.g. 30, 60, 90...)	Counting in 1s, 2s, 5s and 10s Counting in 50s and 100s

Year 4	Counting in 3s, 6s, 7s, 9s and 12s	Counting in 1s, 2s, 3s, 4s, 5s and 10s Counting in multiples of 25 and any multiple of 10 (e.g. 30, 60, 90…)
Years 5 and 6	Counting in any given multiples	Recall of taught times table facts

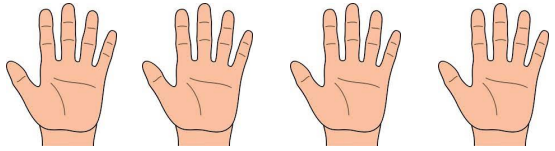
Multiplication and Division

Year 1

Children are expected to:

Count in multiples of twos, fives and tens.

The first steps to multiplication will be through counting in steps of either 2, 5 or 10. Use of concrete objects will enable them to grasp this concept more quickly.



5 10 15 20

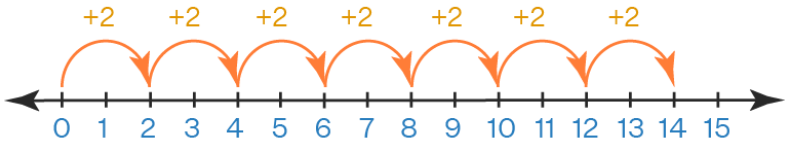


2 4 6 8 10





Children could use a counter, a finger or a pencil to help them 'hop' along the number line.



They should begin to look at counting backwards in these steps as well.

Solve one step multiplication or division problems using concrete objects, pictorial representations or number arrays.
By grouping or sharing small quantities, children should begin to gain some understanding of multiplication and division.

At this stage, they will solve simple problems using **repeated addition**, although the language of **multiplication** will also be introduced.

10

4 x

10



+ 10 + 10 + 10 = 40 cakes

There are **4** groups of **10**

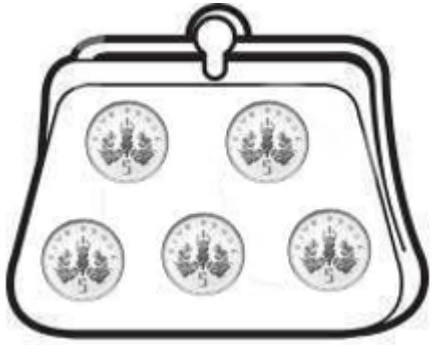
10 = 40

multiplied by **4** is **40**

5 + 5 + 5 + 5 + 5 = 25p

The are **5** lots of **5p**

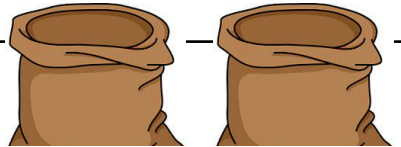
5 x 5 = 25



Children will become familiar with the concept of **division** through **sharing** and **grouping** concrete objects **equally.**

Sharing:





Can you share the apples
equally between the two bags?

6 ÷ 2 = ?



6 ÷ 2 = 3

Grouping:



Can you organise these socks into groups of 2?

12 ÷ 2 = 6

Arrays can also be used to help children visualise and understand multiplication and division.

3 x



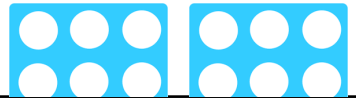
2 is the same as **2 x 3**

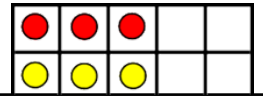
3 x 4 is the same as **4 x 3**



These images support children to develop the understanding of the commutative property of multiplication, that multiplication can be done in any order.

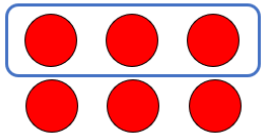
Find and name a half of a quantity as two equal parts, or a quarter of a quantity as four equal parts.
Children should begin to explore finding simple fractions of quantities, such as 1/2 and 1/4. In particular, they will be expected to have some understanding of doubling and halving.

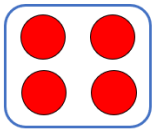


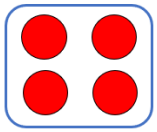


6 + 6 = 6 x 2 = 12 **3 + 3 = 3 x 2 = 6**

Children should be shown that **halving** and **dividing by 2** are the same.

Half of  **6** is **3**
6 ÷ 2 = 3





Half of **8** is **4**
8 ÷ 2 = 4

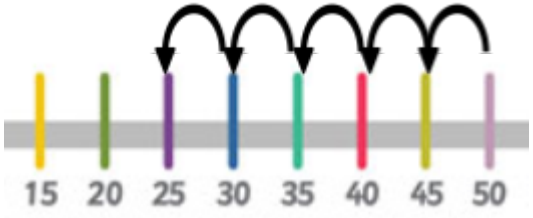
Vocabulary

Ones, groups, lots of, doubling repeated addition, groups of, lots of, times, columns, rows, longer, bigger, higher, times as (big, long, wide .etc), share, share equally, one each, two each, group, groups of, lots of, array.

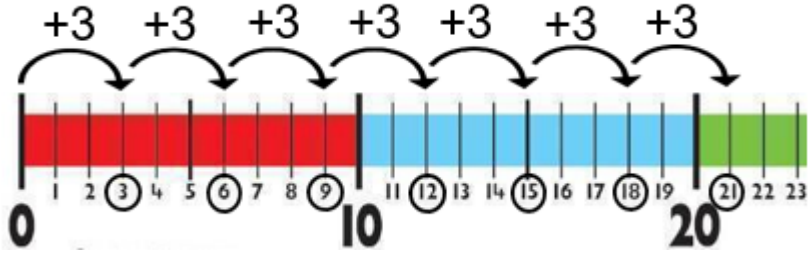
Year 2

Children are expected to:

Count in multiples of two, three, five and ten, both forwards and backwards.
Children will continue to practise counting in steps of 2, 5 and 10, so that they become increasingly fluent at doing so.
They will also be expected to count backwards from a given number in these steps.



Children now learn to be able to count up from **0** in threes.



Recall and use multiplication and division facts for the 2, 5 and 10 times tables.

The children should now be able to recall, from memory, multiplication facts for the 2, 5 and 10 times tables. They could use this Knowledge to solve a variety of missing number problems:

$7 \times 2 = \square$ $\square \times 2 = 14$

$7 \times \square = 14$ $\square \times \bigcirc = 14$

Children should be encouraged to recognise patterns in the multiplication tables.

5 times table
1 x 5 = 5
2 x 5 = 10
3 x 5 = 15
4 x 5 = 20
5 x 5 = 25
6 x 5 = 30
7 x 5 = 35
8 x 5 = 40
9 x 5 = 45
10 x 5 = 50
11 x 5 = 55
12 x 5 = 60

10 times table
1 x 10 = 10
2 x 10 = 20
3 x 10 = 30
4 x 10 = 40
5 x 10 = 50
6 x 10 = 60
7 x 10 = 70
8 x 10 = 80
9 x 10 = 90
10 x 10 = 100
11 x 10 = 110
12 x 10 = 120

The 5 times table is half the 10 times table. So to find 6 x 5, I could work out 6 x 10 and then halve it!

Calculate multiplication and division statements within the multiplication tables and write them using multiplication (x), division (÷) and equals (=) signs.

Multiplication:

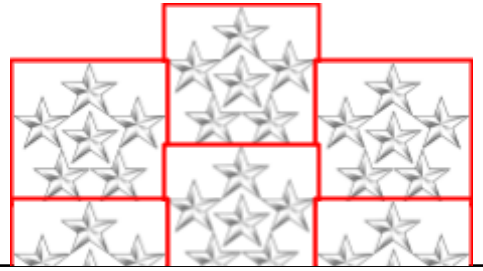
Children should continue to use grouping or number lines to calculate other unknown multiplications, developing their understanding of multiplication as repeated addition.

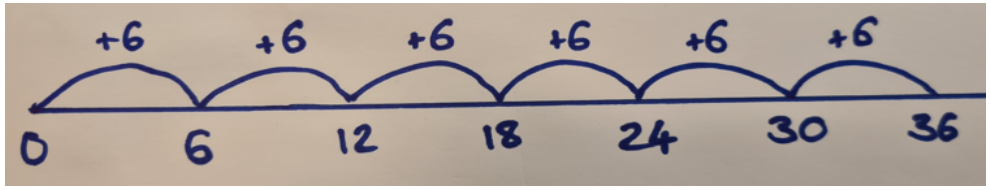
6 x 6 = ?

6 groups of 6

6 + 6 + 6 + 6 + 6 + 6 = 36

6 x 6 = 36

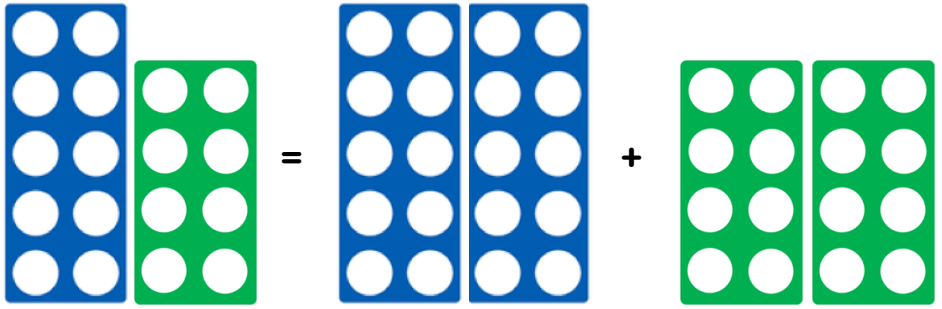


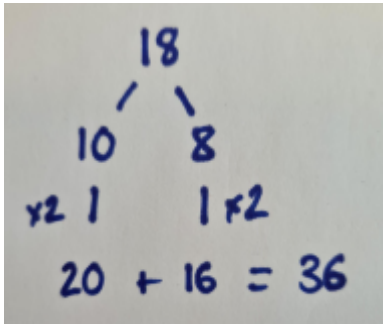


As well as knowing doubles up to 10 + 10, children should use these known facts to double bigger, 2-digit numbers.

For example:

Double 18 = Double 10 + Double 8





= 20 + 16

= 20 + 10 + 6

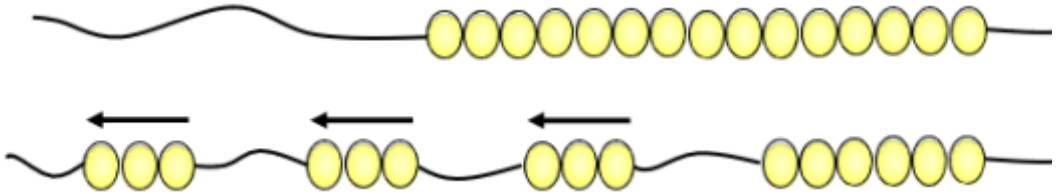
= 30 + 6

Informal jottings can support moving towards independence with this strategy but shouldn't replace manipulatives.

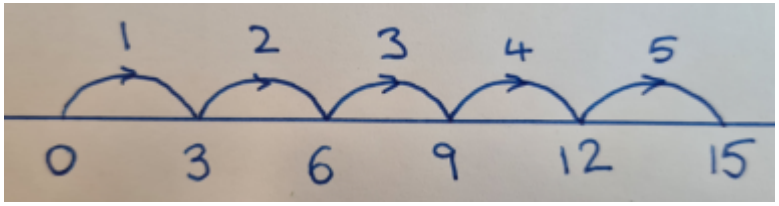
Division:

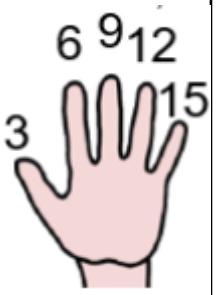
The principles of division should continue to be taught through **grouping** and **sharing**.
Grouping: When grouping, you count the number of groups you have made.

For instance, **15 ÷ 3 = 5** can be viewed as 'How many groups of **3** are there in **15**?'



Again, blank number lines and counting on fingers can support development of children's understanding.

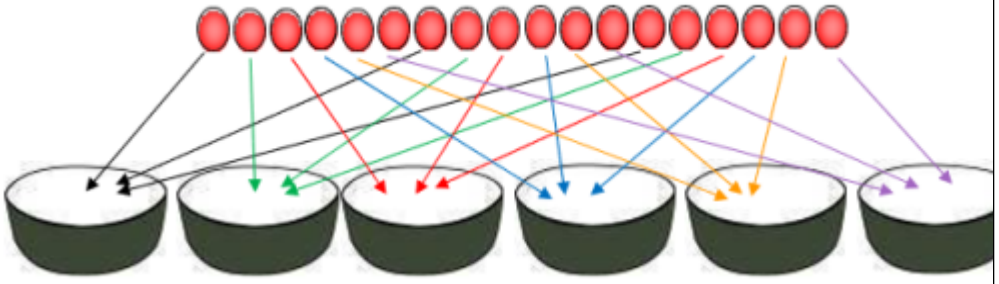




Sharing: When sharing, we count the number of objects in each group.

18 ÷ 6 = ?

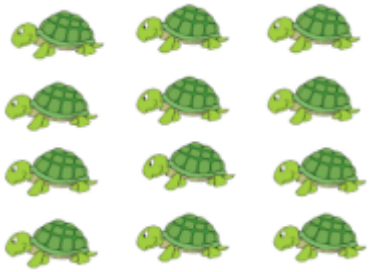
18 shared between **6** makes **3** in each group.



Show that multiplication of two numbers can be done in any order (commutative) but that division of one number by another cannot.

By creating, and looking at, arrays, children will begin to recognise the inverse relationship between multiplication and division.

3 groups of **4 = 3 x 4 = 12**
4 groups of **3 = 4 x 3 = 12**
12 divided into **4** groups **= 12 ÷ 4 = 3**
12 divided into **3** groups **= 12 ÷ 3 = 4**



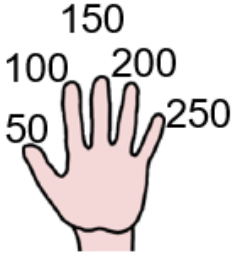
Eventually, children should be able to answer questions like:

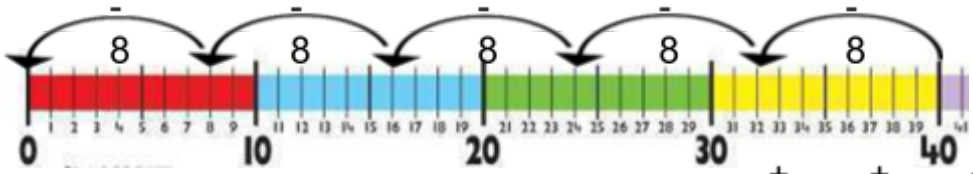
"If 12 x 2 = 24, what is 24 ÷ 2?"

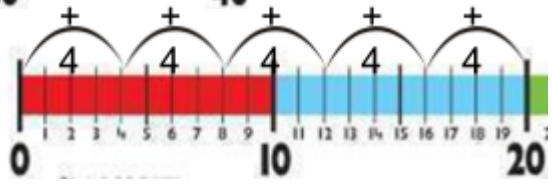
Vocabulary
multiple, multiplication array, multiplication tables/facts, groups of, lots of, times, columns, rows, group in pairs, 3s . 10s etc, equal groups of, divide, ÷, divided by, divided into, shared into, remainder.

Year 3

Children are expected to:
Count from 0 in multiples of 4, 8, 50 and 100, and in tenths (1/10 or 0.1)
There are a variety of resources that children can use to practise counting in these steps, both forwards and backwards







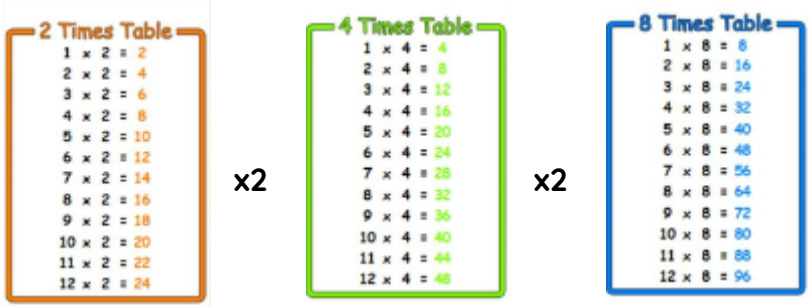


This process of counting in multiples will help reinforce the children's knowledge of times tables facts.

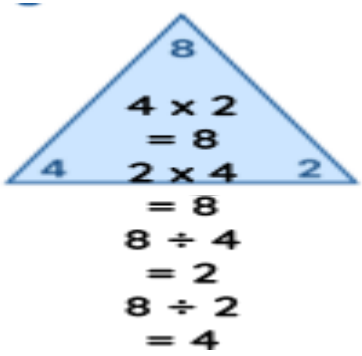
For instance, *"I have counted up 5 lots of 4 to make 20. Therefore, 5 x 4 = 20."*

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

As children become more familiar with their multiplication and division facts, they should start to see the links between the different tables.



This will strengthen the children's awareness of the commutativity of multiplication (that is, when we switch the calculation around, we still get the same answer: 7 x 3 = 3 x 7).

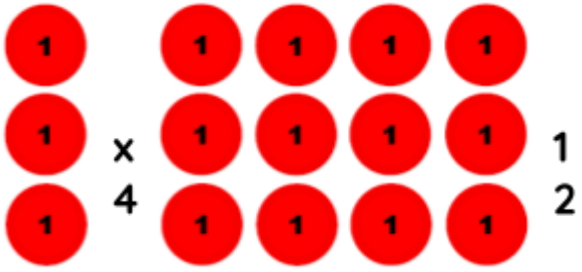


It will also help them grasp that multiplication and division are inverse operations.

Children should also start to use facts that they know to make links with other facts, for instance with numbers that are 10 times bigger (multiples of 10).

Use place value counters to demonstrate and explore this idea.

The same principle can be applied to division problems.



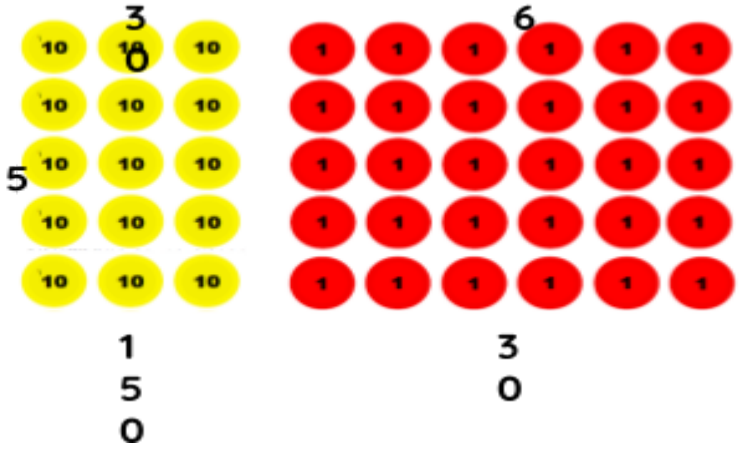


If **6 ÷ 3 = 2**, then **60 ÷ 3 =20**

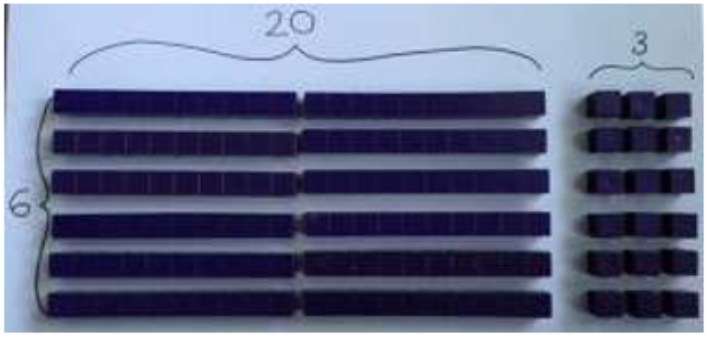
Write and calculate multiplication and division statements using the multiplication tables that they know, including two-digit numbers multiplied by one-digit numbers, using mental methods before progressing to formal written methods.

Multiplication:
Once the children are ready to multiply bigger numbers, they are taught to partition them first. By breaking the number up into smaller parts, the calculation becomes much easier to deal with.

36 x 5 ↗ **30 x 5 = 150** ↘ **= 180**
↘ **6 x 5 = 30** ↗

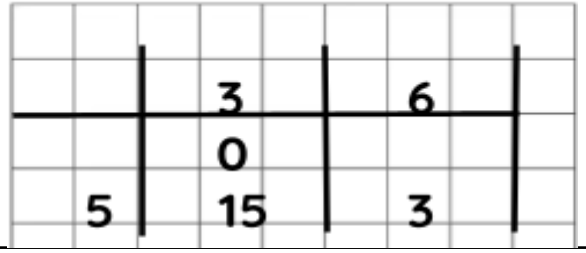


Initially, **base 10 resources** or **place value counters** should be used to teach this procedure to ensure children gain a deep understanding of its principles.



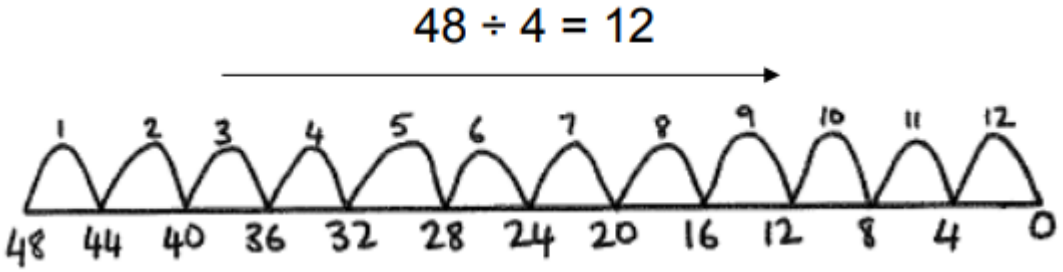
23 x 6 = 138

As children become more confident, they can move on to recording the same idea using pencil and paper on the grid method.

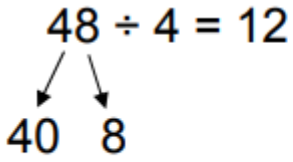


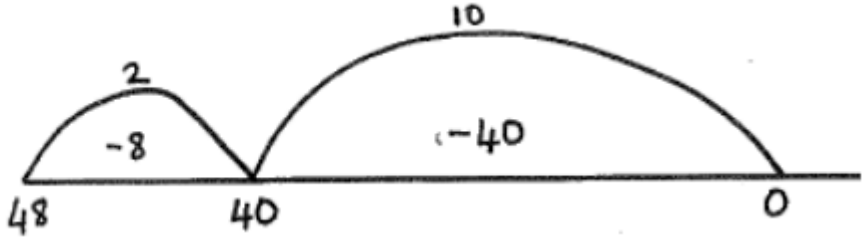
Division

Children should use a number line to support repeated subtraction. Jumping back along a number line in small intervals can expose the structure of the times tables.

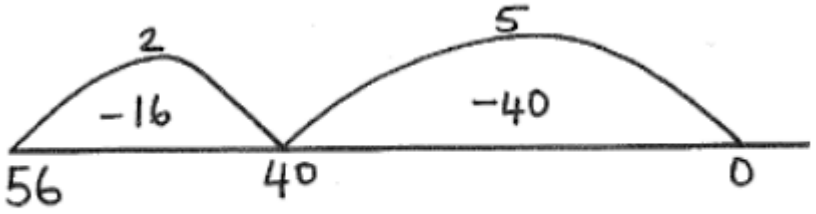


Children should move to partitioning the dividend into larger, simpler chunks.





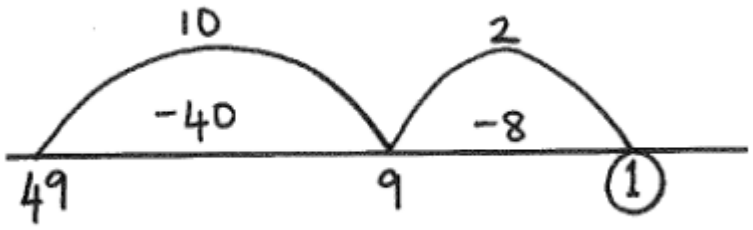
It is possible to partition into other ways than tens and ones. For example **56 ÷ 8 = ?** could be divided in to **40** and **16.**



56 ÷ 8 = 7

Children should also be introduced to the concept of remainders. A remainder is any number left over, once an amount has been divided up equally.

$49 \div 4 = ?$



$49 \div 4 = 12\ r1$

Solve problems involving multiplication and division, including missing number problems, positive integer (whole number) scaling problems and correspondence problems (where n objects are linked to m objects).
Missing number problems can be a great way to ensure children know the expected multiplication tables.



Children should be given practical problems where they will need to scale up.

“Harry’s sunflower is 9cm tall. Alex’s is 4 times taller. How tall is Alex’s sunflower?”

Problems where there is a remainder but the answer needs to be given as a whole, should also be provided.

“Pencils are sold in packs of 10. How many packs will I need to buy for 24 children?”

Vocabulary
multiple, multiplication array, multiplication tables/facts, groups of, lots of, times, columns, rows, group in pairs, 3s . 10s etc, equal groups of, divide, ÷, divided by, divided into, shared into, remainder, partition, grid method, inverse

Year 4

Children are expected to:

Count in steps of 6, 7, 9, 25 and 1000, and in hundredths (1/100 or 0.01).
Children should be able to count in multiples of 6, 7, 9, 25 and 1000, and in hundredths mentally. Counting resources (see Year 3) may be used to support children if necessary. It is equally import that children can count backwards in these intervals as well.

Recall multiplication and division facts for multiplication tables up to 12 x 12.
Missing number problems can help assess children's knowledge of multiplication and division facts



Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; and multiplying together three numbers.
Using known multiplication and division facts, children should be able to derive other associated facts for multiples of 10 and 100.

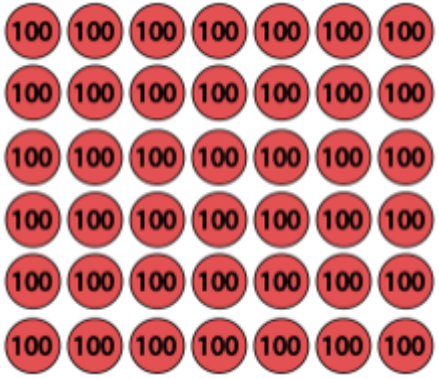
6 x 7 = 42

6 x 70 = 420

6 x 700 = 4200

60 x 7 = 420

600 x 7 = 4200



4200 ÷ 7 = 600

4200 ÷ 70 = 60

4200 ÷ 700 = 6

420 ÷ 70 = 6

420 ÷ 7 = 60

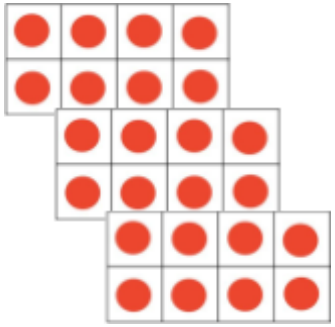
For some calculations, children may be able to mentally partition the numbers and work the answer out by jotting bits down.

6 x 17
= 6 x 10 + 6 x 7
= 60 + 42
= 102

Children must also be able to tell you what happens when you multiply a number by 0, or when you multiply or divide a number

by 1.

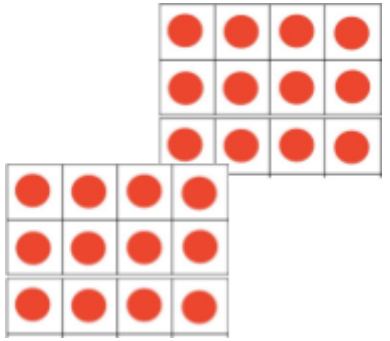
They should master how to multiply three numbers together too. Through practice, they will notice that, no matter how they group the numbers, they will always get the same answer.



2 x 4 x 3 =

(2 x 4) x 3
8 x 3 = 24

2 x (4 x 3)
2 x 12 = 24

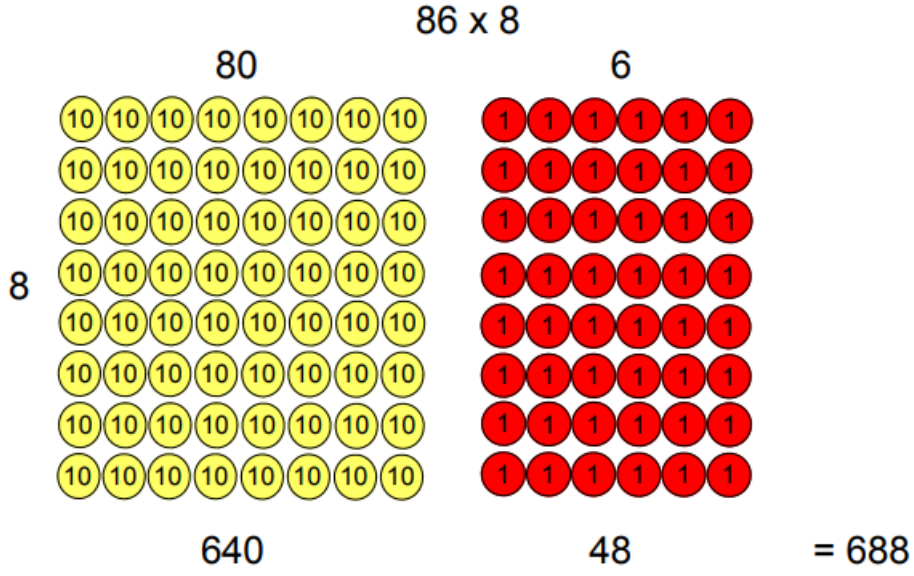


Children will then be able to decide which order to approach a problem that requires multiplying three numbers.

7 x 3 x 2 = (7 x 3) x 2 = 21 x 2 = 42

Multiply two-digit and three-digit numbers by a one-digit number using a formal, written layout.
Children should focus on deepening their understanding of the grid method to multiply a two-digit number by a one-digit number. Place value apparatus can be used to embed this

using



Children should then be able to record this method the grid method.

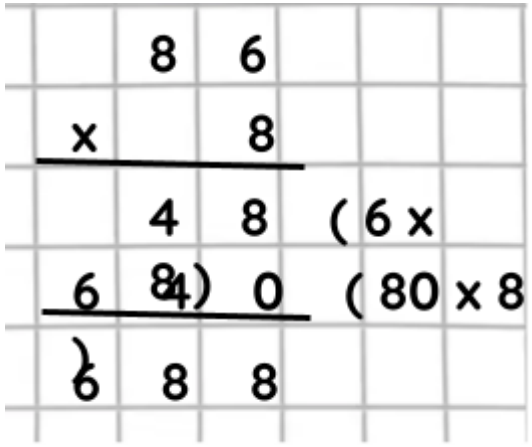
	80	6	
8	640	48	= 688

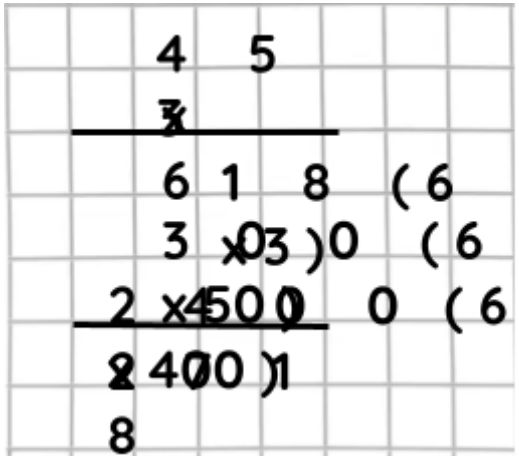
This grid method can also be used to multiply a three-digit number as well.

453 x 6 = 2718

	40	50	3	
6	240 0	30 0	18	= 2718

Children should then progress to the expanded column method:

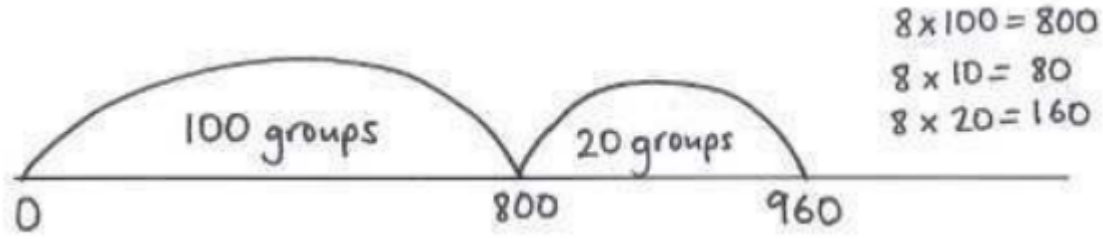




When ready, children can use the compact column method to solve problems.

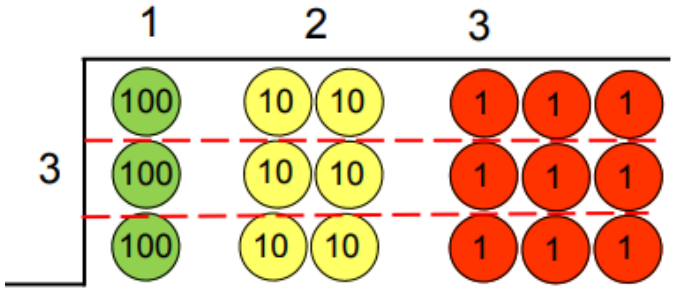


Until they have a secure understanding of division as sharing and grouping, children should continue to explore the concept of division using a number line. A division problem 960 ÷ 8 = ? can be seen as 'How many 8s are there in 960?'. Children can chunk into groups of 8.



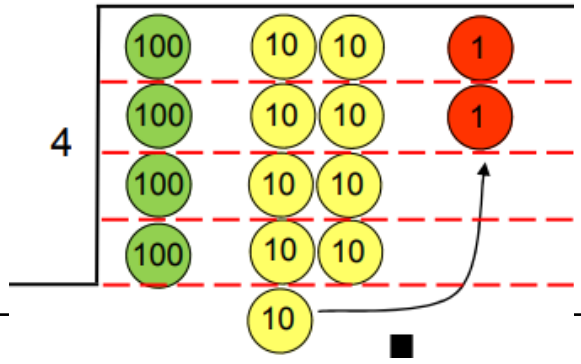
Once children are secure with division on a number line, they can be introduced to the formal short division method. Manipulatives should be used to support children to see the structure of this method.

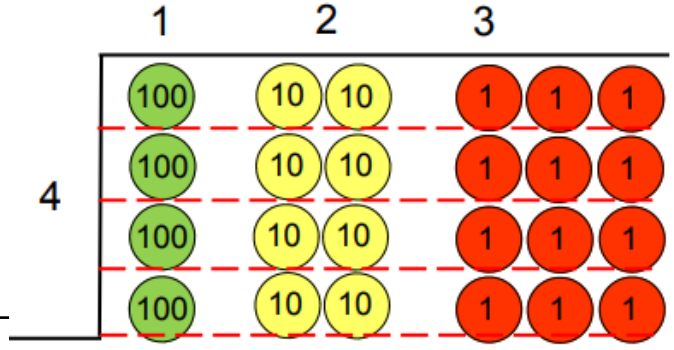
369 ÷ 3 = 123



$$\begin{array}{r} 123 \\ 3\overline{)369} \end{array}$$

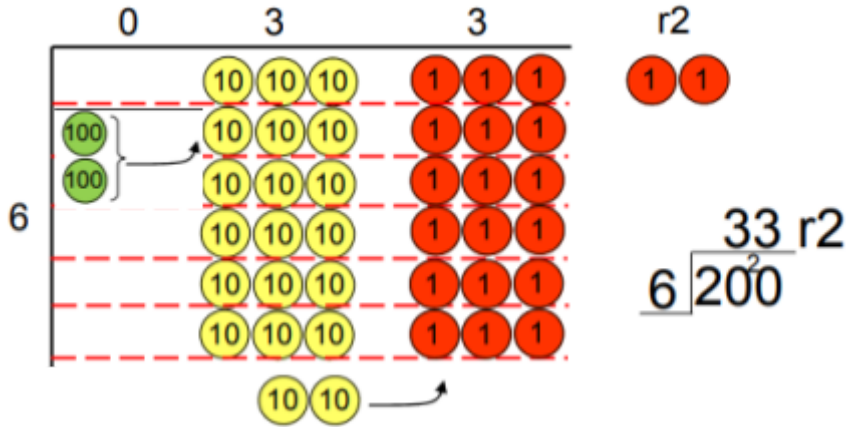
Children should also be given examples where exchange is required





$$\begin{array}{r} 123 \\ 4\overline{)49^{1}2} \end{array}$$

By the end of the year, children should have also encountered examples where there is a remainder

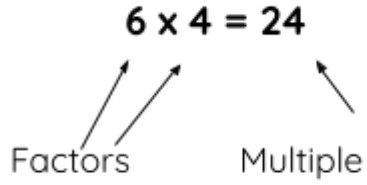


Vocabulary
divide, divided by, divisible by, divided into, share between, groups of, factor, factor pair, multiple, times as (big, long, wide 6etc), equals, remainder, quotient, divisor, inverse, factor

Year 5

Children are expected to:
Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. Children should be able to use the vocabulary **multiple** and **factor** correctly and consistently.

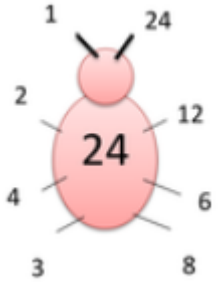
Factors are numbers you can multiply together to make another number. A **multiple** is the product of two factors.



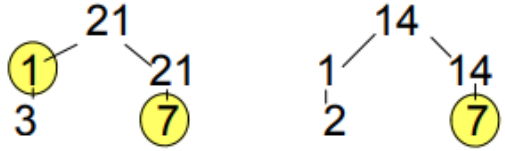
6 and **4** are both factors of **24**, they multiply together.

A number can have several factors.

24 has the factors:
1, 2, 3, 4, 6, 8, 12, 24



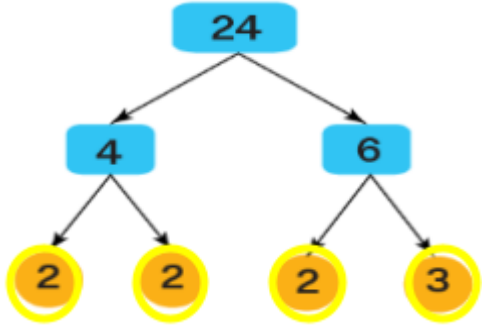
A number can have some of the same factors as another number, these are common factors.
1 and **7** are common factors of **21** and **14**



Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers; establish whether a number up to 100 is a prime number and recall prime numbers up to 19.
Children must be able to explain, and find examples of, **prime numbers**. These are whole numbers that can only be divided evenly by 1 or itself. In other words, they only have two factors. Any number that is NOT a prime number, is a **composite number**, which is a number that can be divided evenly by numbers other than 1 or itself. The number 1 is the only exception; it is considered neither a prime number, nor a composite one.

Prime factors are factors of a number that are prime numbers.

2 and **3** are prime factors



Multiply and divide numbers mentally, and recognise and use square and cube numbers (and their notations).
Children should be taught a range of mental calculation strategies and to identify the most efficient method for the problem they are trying to solve.

Children can partition numbers using their times tables knowledge and multiply each part mentally. Jottings can be used to support working memory.

48 x 6 = 40 x 6 + 8 x 6 = 240 + 48 = 288

Other strategies include:

To multiply by 4: *Double* and then *double* again.

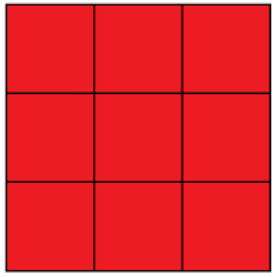
To multiply by 5: *Multiply by 10* and then *halve*.

To multiply by 20: *Multiply by 10* and then *double*.

They should also recognise square and cube numbers, and use the appropriate notation.

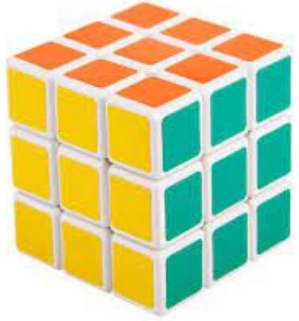
3^2

$3 \times 3 = 9$



3^3

$3 \times 3 \times 3 = 27$



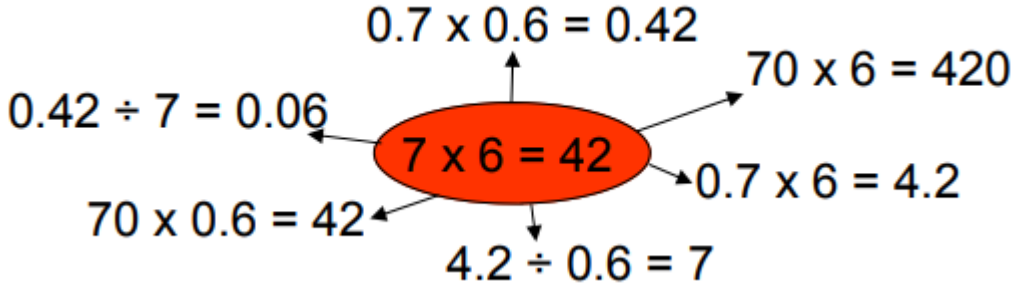
Multiply and divide whole numbers, and those involving decimals, by 10, 100 or 1000
It is essential that children are able to identify and apply rules for multiplying and dividing by 10, 100 and 1000

A place value chart can support the understanding that the digits move along when multiplying by 10, 100 or 1,000.

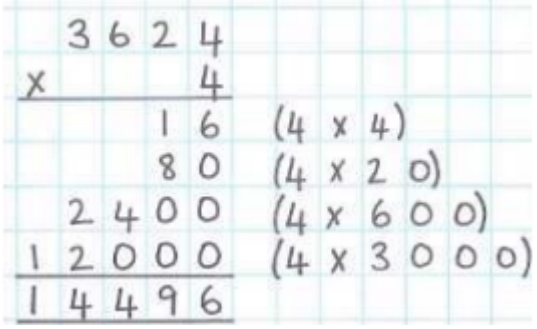
Th	H	T	O
7	8	0	0

$78 \times 100 = 7{,}800$

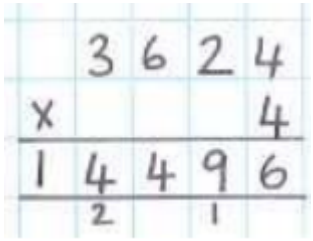
Multiply and divide numbers mentally drawing upon known facts.
Children should be able to derive multiplication and division facts for both whole numbers, and those with decimals.

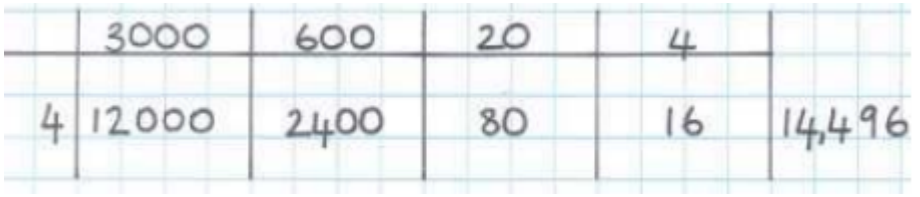


Multiply numbers up to four digits by a one or a two-digit number using a formal written method, including long multiplication for two-digit numbers.
When children first start multiplying four-digit numbers, they may prefer to revert to the expanded column method until they feel more confident.



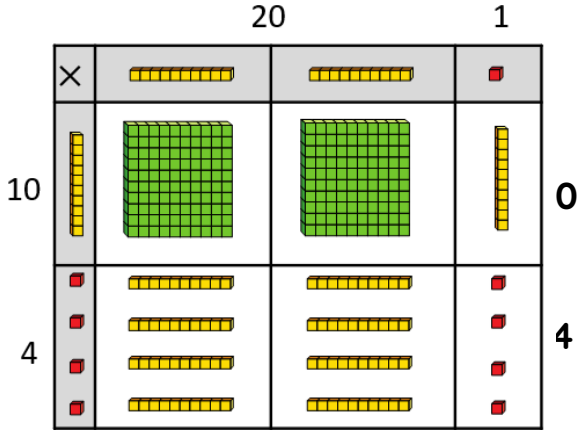
Children should move on to using **short multiplication**. But if they are struggling, they can return to using **grid method**.

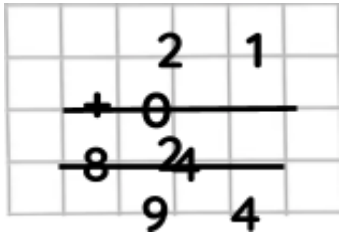




The grid method is also a good point to support learning of how to multiplying a number by a two digit number.

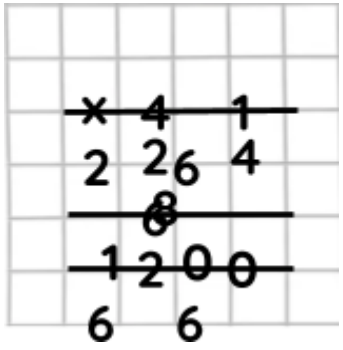
14 x 21





Long multiplication should be introduced as the next step.

41 x 6 can be solved using short multiplication.



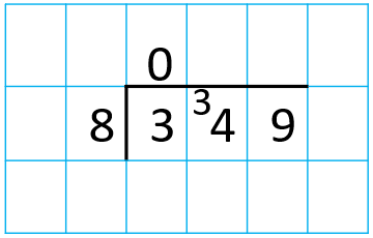
The **2** in **26** represents **20.** We first multiply by **10** and then multiply by **2**. To multiply by **10**, we move the digits one place to the left and placing a place holder **0** in the ones column. The **41** can be multiplied by **2** using short multiplication.

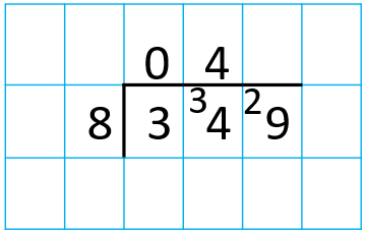
The totals of the two multiplications can be added together to find the sum.

Divide numbers up to four digits by a one-digit number using the formal written method of short division, and interpret remainders appropriately for the context.

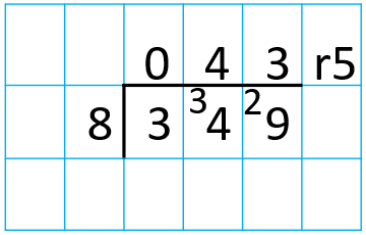
With regards to division, children should continue to develop the short division method.

The first step is to identify how many **8**s there are in **3**. There are **0**, so **0** is placed on the line above and the **3** is carried over to the next column.





There are **4** lots of **8** in **34** with **2** remaining, these **2** are carried over to the next column.



There are **3** lots of **8** in **29** with a remainder of **5**.

349 ÷ 8 = 43 r5

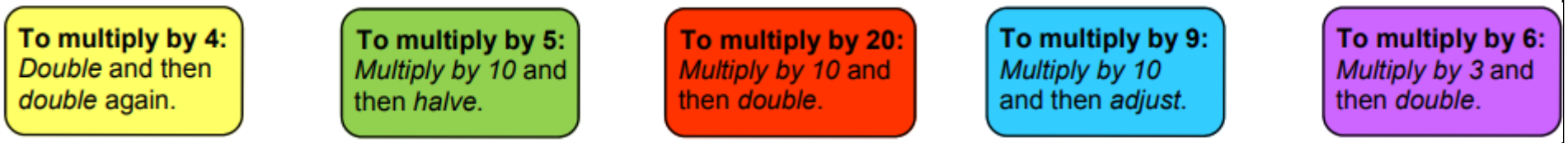
As a fraction, this example could be represented as **349 ÷ 8 = 43 ⅝**

Vocabulary:
multiple, multiplication array, multiplication tables/facts, groups of, lots of, times, columns, rows, group in pairs, 3s . 10s etc, equal groups of, divide, ÷, divided by, divided into, shared into, remainder, partition, grid method, inverse, cube numbers, prime numbers, square numbers, common factors, prime factors, composite numbers, common factors, short division, inverse, power of.

Year 6

Children are expected to:
Perform mental calculations, including those with mixed operations and large numbers.

Children should be able to draw upon a number of different mental strategies to help them solve some calculations in their head.



As well as knowing the square numbers up to 12 x 12, children are also expected to derive the corresponding squares of multiples of 10: **7 x 7 = 49** so **70 x 70 = 4900**

Identify common factors, common multiples and prime numbers.
Covered in Year 4 and 5 policy

Multiply and divide numbers by 10, 100 and 1000 where the answers are up to 3 decimal places.
Covered in Year 5 policy

Use their knowledge of the order of operations to carry out calculations involving the four operations.
When children are presented with a calculation that includes more than one operation, they need to know which is the correct order to complete it, as doing so in the wrong order will result in an incorrect answer.

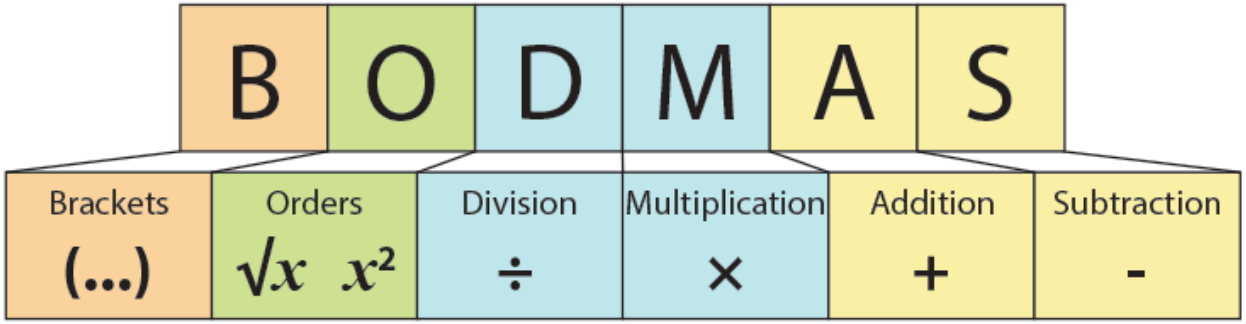
A calculation will generate two different answers, depending on how it is completed

2 x 15 + 25 = ?

Either … **30 + 25 = 55**

or … **2 x 40 = 80**

Children can use the acronym BODMAS to help to remember the order to approach operations.

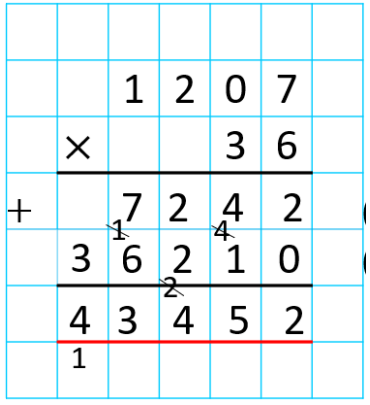


The correct order to have completed the example calculation above is **2 x 15 + 25 = ?**

30 + 25 = 55

Multiply multi-digit numbers up to four digits by a two digit whole number using the formal written method of long multiplication.

As covered in the Year 5 policy



Multiply one-digit numbers with up to two decimal places by whole numbers.
When multiplying a decimal number, it is important to place the decimal point on the answer line before doing anything else. Short multiplication should then be used to complete the rest.

	2	.	8	3
×				3
	8	.	4	9
	2			

Divide numbers with up to four digits by a two-digit whole number using the formal written method of long division.
When dividing by a two-digit number, children should use a method called long division. The steps required to do this are outlined below

1) How many **32s** are there in **43**? We can work out that there is **1** lot of **32** in **43**. We write this number above the **3**.

		1		
32	4	3	2	0

2) We

		1		
32	4	3	2	0
—	3	2		
	1	1		

then need to write down the exact amount that **1 x 32** comes to underneath the **43**, so that we can see how many are left. **43 - 32 = 11**

3) Bringing down the next digit, we now need to find out how many **32s** there are in **112**. Separate jottings on the side may be helpful. The answer of **3** is written above the **2**.

		1	3	
32	4	3	2	0
—	3	2	↓	
	1	1	2	

		1	3	
32	4	3	2	0
—	3	2		

4) Having established that there are **2** lots of **32** in **112**, we need to work out how many we have left over. **3 x 32 = 96**, leaving a remainder of **16**.

5) Again, we bring down the next digit in the question **0**. Now we have to calculate how many **32s** there are in **160**. The answer of **5** is written above the **0**.

		1	3	5
32	4	3	2	0
–	3	2	↓	
	1	1	2	
–		9	6	
		1	6	0

6) 32 x

		1	3	5
32	4	3	2	0
–	3	2	↓	
	1	1	2	
–		9	6	
		1	6	0
–		1	6	0
				0

5 = 160 which leaves us with no remainders. So, **4320 ÷ 32 = 135**

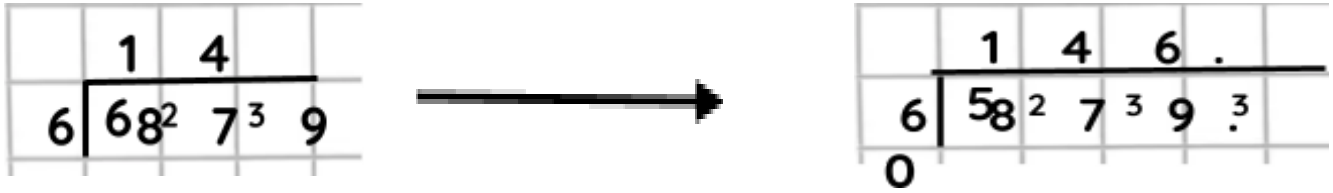
Interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.
Children should have an understanding of how to turn a remainder into a fraction or decimal.

19 ÷ 6 = 3 r1

the remainder can be turned into a fraction by continuing to divide it by 6

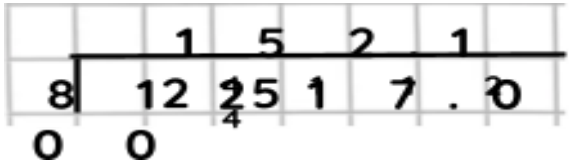
19 ÷ 6 = 3 ⅙

Children can also express a remainder as a decimal. When using either short or long multiplication, by adding a decimal point and a zero to the number being divided, we are able to carry on the calculation.



They must also remember to add a decimal point to the answer line, in the same position as the one in the question.

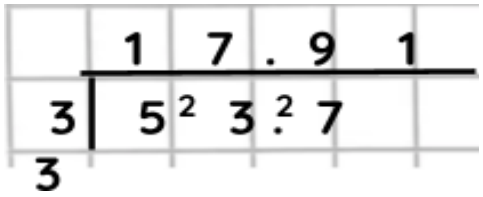
It might be that the children will be presented with an example where they need to add more than one zero on to the number being divided.



Examples where the numbers after the decimal point carry on indefinitely should <u>not</u> be given to the children at this stage.

Short and long division can be used to divide decimal numbers as well; children simply need to remember to put the decimal point in exactly the same position on the answer line as it is in the question.

53.73 ÷ 3 = 17.91



Vocabulary:
multiple, multiplication array, multiplication tables/facts, groups of, lots of, times, columns, rows, group in pairs, 3s . 10s etc, equal groups of, divide, ÷, divided by, divided into, shared into, remainder, partition, grid method, inverse, cube numbers, prime numbers, square numbers, common factors, prime factors, composite numbers, common factors, short division, inverse, power of.