

Welcome to the  
Upper Key Stage 2  
Parent/ Carer Maths Workshop  
For  
Four Operations of Number

Altogether

Add

Plus

Addition

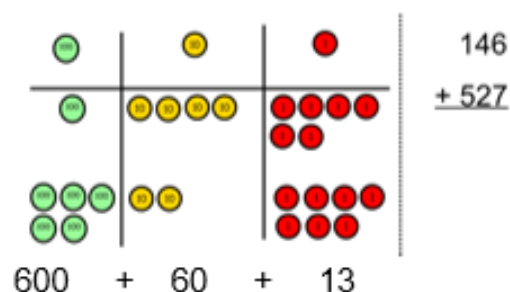
Sum

Total

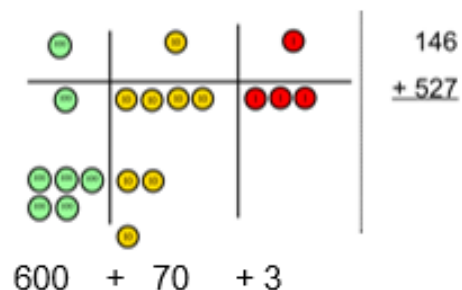
+

## Column method with regrouping

Represent both numbers on a calculation mat, using place value counters or base 10.



Add the units and exchange ten 1s for one 10. Record a total below the 1s column.

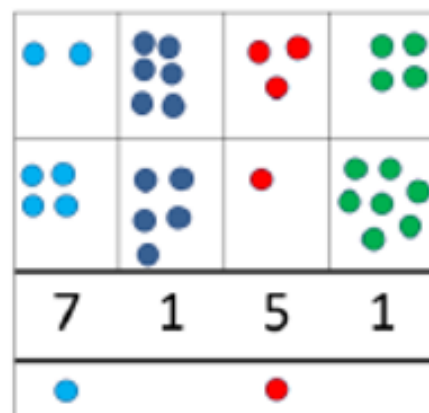


Add the rest of the columns, exchanging counters, where necessary and totalling each column. Add the totals together.

As children move on to decimals, money and decimal place value counters can be used to support learning.

Children can draw a pictorial representation of the columns and place value counters to further support their learning and understanding.

$$2634 + 4517 = 7151$$



It may help children to begin with an expanded method, before moving on to exploring a compact method using equipment. The compact method can be used for calculations involving decimals and money.

$$146 + 527$$

$$100 + 40 + 6$$

$$500 + 20 + 7$$

$$600 + 60 + 13 = 673$$

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \end{array}$$

$$\begin{array}{r} 1431 \\ \hline 11 \end{array}$$

Answer: 1431

$$\begin{array}{r} 23.361 \\ 9.080 \\ + 1.300 \\ \hline 93.511 \\ \hline 212 \end{array}$$

Difference

Take away

Minus

Subtraction

—

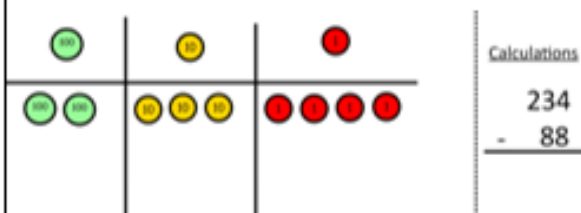
Subtract

How many more than?

## Column method with regrouping

Use Base 10 to start with, before moving on to place value counters. Start with one exchange before moving onto subtractions with two exchanges. Compact or expanded method can be shown alongside equipment.

Make the larger number with the place value counters



Start with the ones, can I take away 8 from 4 easily? I need to exchange one of my tens for ten ones.

Children can progress to drawing Base 10 or place value counters on a calculation grid. They can draw counters to show the exchanges they make and cross out as they subtract.



Children need to record calculations using an expanded method, showing exchange, before moving on to a compact method.

The whiteboard shows the following calculation:

$$836 - 254 = 582$$

Below the equation, the expanded method is shown with place value labels:

	H	T	U
	800	130	6
-	200	50	4
<hr/>			
	500	80	2

\_\_\_ groups of \_\_\_

times

X

Multiplication

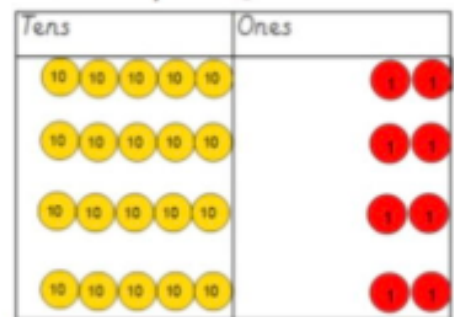
What is the product of ..

## Column multiplication – short multiplication

Children can continue to be supported by place value counters at the stage of multiplication.

It is important at this stage that they always multiply the ones first and note down their answer followed by the tens which they note below.

$$52 \times 4$$



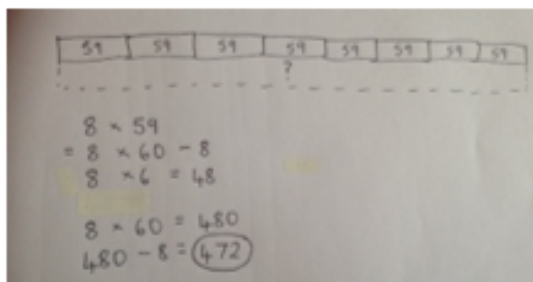
Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.



$$113 \times 3$$



A lemon costs 45p. Tom buys 4. What is the total cost?



Using bar model, effective mental strategies and related number facts.

Short multiplication

$$\begin{array}{r} 1245 \\ \times \quad 3 \\ \hline 3735 \\ \hline \end{array}$$

Column  
multiplication –  
long  
multiplication

Start with long multiplication, reminding the children about lining up their numbers clearly in columns.

If it helps, children can write out what they are solving next to their answer.

$$\begin{array}{r} 32 \\ \times 24 \\ \hline 8 \quad (4 \times 2) \\ 120 \quad (4 \times 30) \\ 40 \quad (20 \times 2) \\ 600 \quad (20 \times 30) \\ \hline 768 \end{array}$$

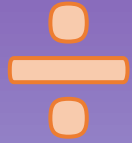
$$\begin{array}{r} \phantom{+} \phantom{4} \phantom{2} \phantom{0} \phantom{0} \\ \phantom{+} \phantom{4} \phantom{2} \phantom{0} \phantom{0} \\ \phantom{+} \phantom{4} \phantom{2} \phantom{0} \phantom{0} \\ \phantom{+} \phantom{4} \phantom{2} \phantom{0} \phantom{0} \\ \phantom{+} \phantom{4} \phantom{2} \phantom{0} \phantom{0} \\ + \phantom{4} \phantom{2} \phantom{0} \phantom{0} \\ \hline 4 \phantom{6} \phantom{6} \phantom{2} \end{array}$$

This moves to the more compact method.

$$\begin{array}{r} 327 \\ \times 53 \\ \hline 981 \leftarrow 327 \times 3 \\ 16350 \leftarrow 327 \times 50 \\ \hline 17331 \end{array}$$



Shared by



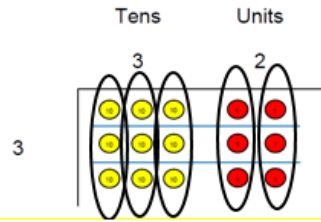
Division

Divide

How many \_\_\_\_\_ are in \_\_\_\_\_?

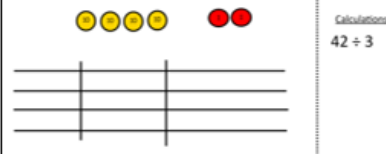
## Short division

$$96 \div 3$$



How many groups of 3 tens are there?  
How many groups of 3 ones are there?

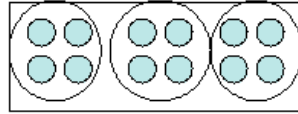
Use place value counters to divide using the bus stop method alongside



$$42 \div 3 =$$

Start with the biggest place value, we are sharing 40 into three groups. We

Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.



Encourage them to move towards counting in multiples to divide more efficiently.

6 pencils cost £1.68 or 168p. How much does one cost?



Begin with divisions that divide equally with no remainder.

$$186 \div 6 =$$

$$\begin{array}{r} 031 \\ 6 \overline{) 186} \\ \underline{6} \phantom{0} \\ 18 \phantom{0} \\ \underline{18} \phantom{0} \\ 0 \end{array}$$

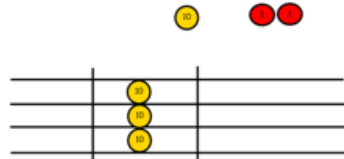
*no groups of 6 can be made*      *1 × 6 = 6*  
*3 × 6 = 18*

$$\begin{array}{r} 218 \\ 4 \overline{) 872} \\ \underline{8} \phantom{0} \\ 07 \phantom{0} \\ \underline{8} \phantom{0} \\ 02 \phantom{0} \\ \underline{0} \phantom{0} \\ 2 \end{array}$$

Move onto divisions with a remainder. Then expressing the remainder as a part of the divisor

$$\begin{array}{r} 86 \text{ r } 2 \\ 3 \overline{) 258} \\ \underline{6} \phantom{0} \\ 19 \phantom{0} \\ \underline{15} \phantom{0} \\ 48 \phantom{0} \\ \underline{45} \phantom{0} \\ 32 \phantom{0} \\ \underline{30} \phantom{0} \\ 2 \end{array}$$

can put 1 ten in each group and we have 1 ten left over.

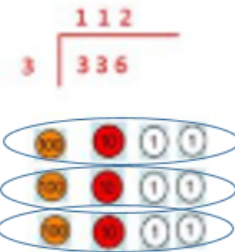
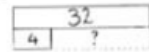


We exchange this ten for ten ones and then share the ones equally among the groups.



We look how much in 1 group so the answer is 14.

There are 32 children in a class. 4 children can fit around a table. How many tables are needed?



$$1441\frac{2}{3}$$

$$3 \overline{) 4325}$$

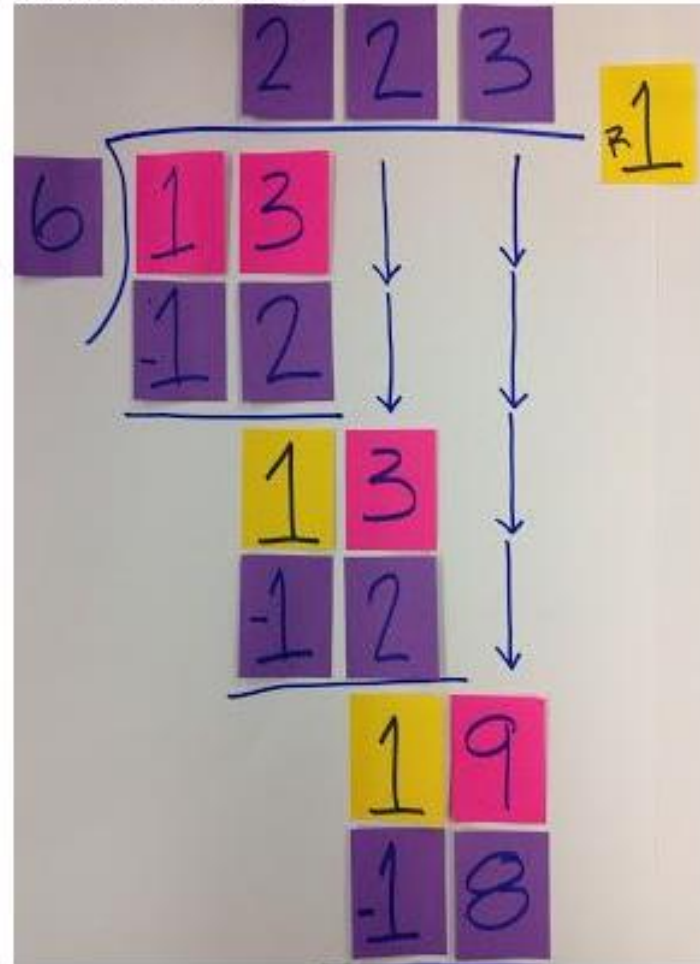
Finally move into decimal places to divide the total accurately.

$$15.8$$

$$5 \overline{) 79.40}$$

## Long Division

Use of post it notes and large paper to physically bring down the numbers



$$4862 \div 34$$

$$\begin{array}{r} 143 \\ 34 \overline{) 4862} \\ \underline{34} \phantom{00} \\ 146 \phantom{0} \\ \underline{136} \phantom{0} \\ 102 \\ \underline{102} \\ 0 \end{array}$$

Answer: 143