A guide to ‘Helping your child with written methods in Maths’ at home

Years 5 & 6

Children will be following the CPA approach.

C – concrete – can we MAKE it?

Children will use manipulatives (resources) to help make the calculations. This might be using cubes, counters, or any other objects that can represent numbers.

Once the children can make it, we move to

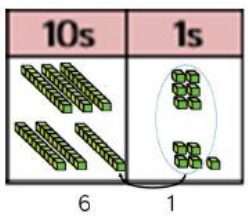
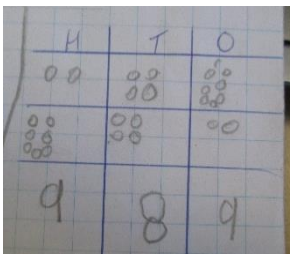
P – pictorial – can we DRAW it?

Children will need to draw their representations. Perhaps copying the objects used first, then moving to use lines and circles (sticks and stones) towards the end of year 1 and in year 2.

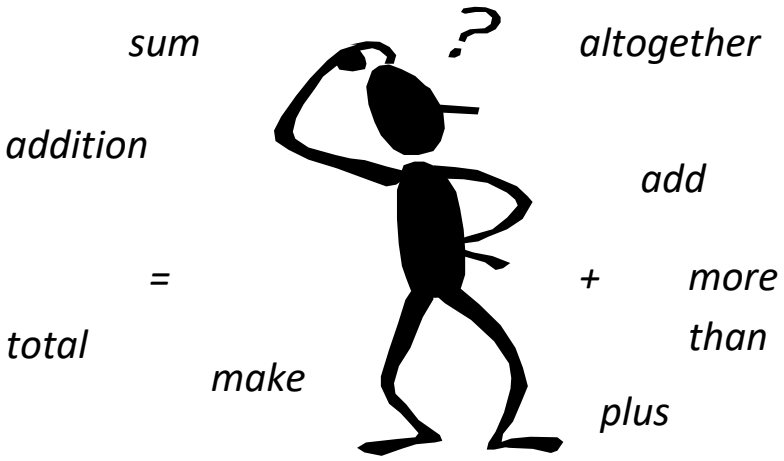
Once the children can use the concrete and pictorial approach, they will be able to write the abstract alongside.

A – abstract – can we WRITE the calculation.

For example…

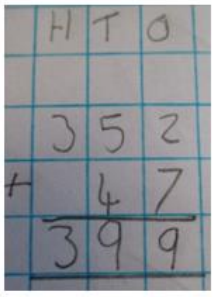
Concrete (can we MAKE it?)	**Pictorial (can we draw it?)**	**Abstract (can we write the calculation?)**
TO + O using base 10. Continue to develop understanding of partitioning and place value. 36 + 25  36 +25	Children to represent the base 10 or place value counters, in a place value chart  	Looking for ways to make 10. 36 + 25 = 30 + 20 = 50 5 + 5 = 10 50 + 10 + 1 = 61 1 5 Formal method: 36 +25 61 1

Addition

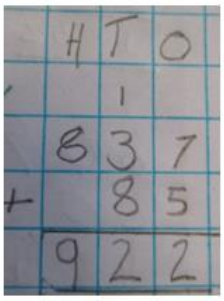


In year 5 and 6, children will be using the compact method of column addition.

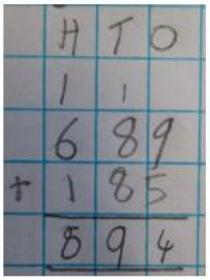
No exchange



exchange



double exchange



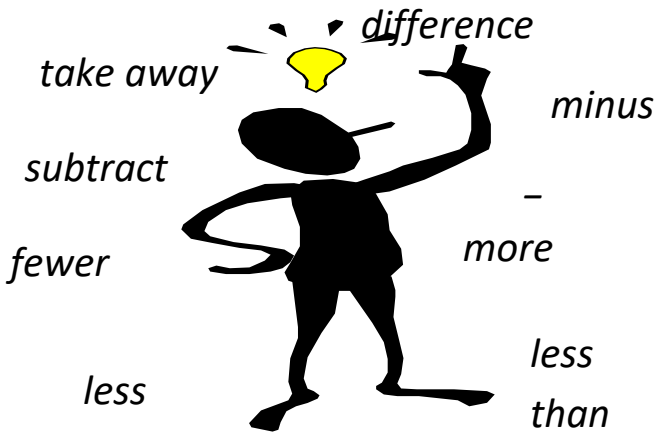
In year 5, children will be expected to add numbers with up to 2 decimal places – these are most likely to be money amounts.

In year 6, children will be expected to add numbers with up to 3 decimal places.

E.g.124.129 + 117.325 =

$$\begin{array}{r} 124.129 \\ +\ 117.325 \\ \hline 241.454 \\ \hline 1\quad\ 1 \end{array}$$

Subtraction



In year 5 children will be expected to use the compact method of subtraction. They will be subtracting numbers with up to 5 digits. As well as this, children will need to be able to subtract numbers with 2 decimal places – these are most likely to be money amounts.

E.g. £278.31 – £128.42 =

£ 278.31

\- £ 128.42

£ 149.89

Year 6 children are expected to subtract numbers with 6 digits and 3 decimal places.

532.573

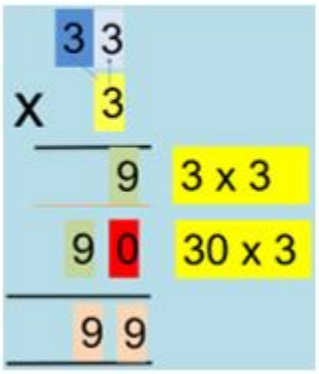
\- 402.824

129.749

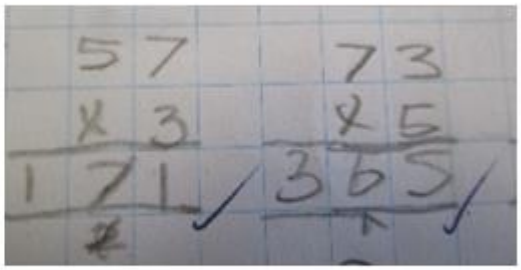
Multiplication

In year 5, children will use 2 methods of multiplication. One is for short multiplication; in year 5 children should be able to multiply 4 digit by one digit.

Expanded method



Compact method



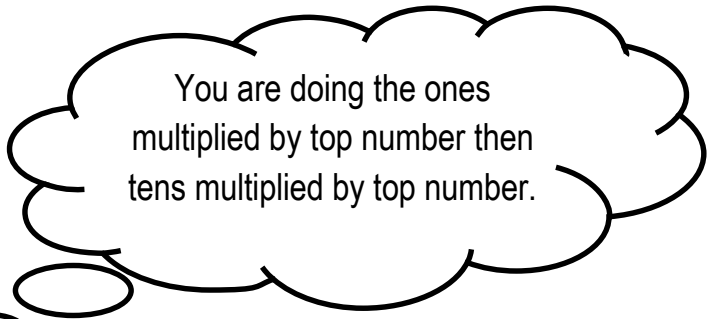
For longer multiplication children will be shown 2 methods.The grid method is useful to numbers up to 3 digits x 2 digits. E.g. 72 x 38 = 2736

X	70	2
30	2100	60
8	560	16

2160
576
2736

A shorter method for 2 or more digits multiplied by 2 or more digits…

32 x 34 =

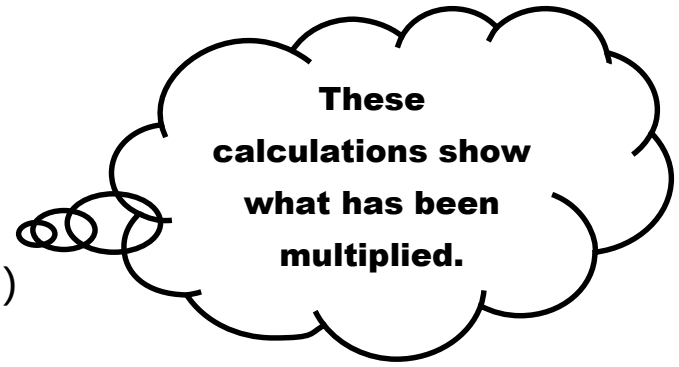



```
  32
X 34
 128
 960
1084
```

The zero is a Place holder, the children can then multiply by 3

Children may also be extended to use decimal numbers in multiplication.

```
12.5
x  2
 1.0   (2.0 x 0.5 )
 4.0   (2.0 x 2.0 )
20.0   (2.0 x 10.0 )
25.0
```

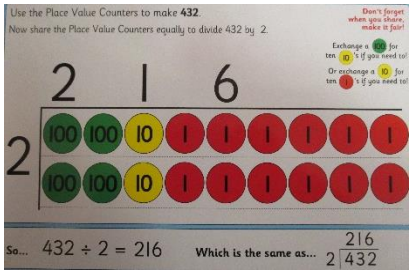


These methods will continue through year 6.
Children should be able to multiply using the short method a 1 digit number by a number with up to 4 digits. As well as that they should be able to multiply a 1 digit number by a number with 2 decimal places, including amounts of money.
Using the long multiplication method, they should be able to multiply a 2 digit number by a 4 digit number.

Division

Continuing on from year 4, children in year 5 and 6 will use the ‘bus stop’ method of division.

Concrete methods can be used first to support before the abstract method.



$$5\overline{)615}\quad 123$$

In year 5, children will use the short division to divide a number with up to 4 digits by a number under 12. Any remainders will be given as whole numbers or fractions.

Long division is introduced at the end of year 5 in preparation for year 6.

290 r 5

12 ⟌ 3485

1200 (x100)

2285

1200 (x100)

1085

600 (x50)

485

480 (x40)

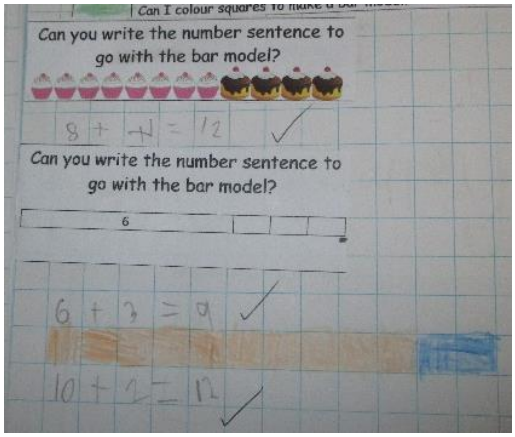
r5

100 + 100 + 50 + 40

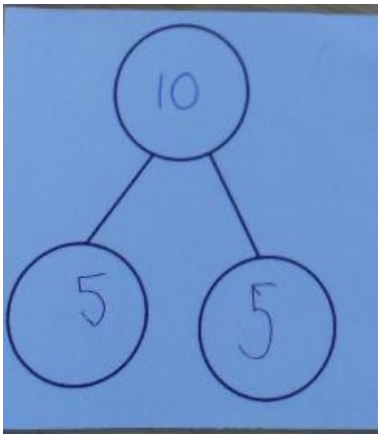
= 290

You may also hear these phrases. These are some of the models and images we use to support children.

Bar model

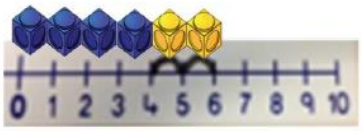


part-part-whole,



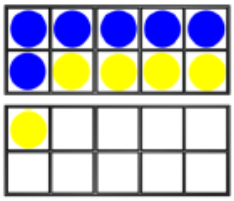
numberline

Counting on using number lines using cubes or Numicon.

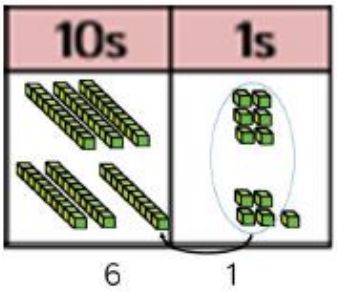


tens frame

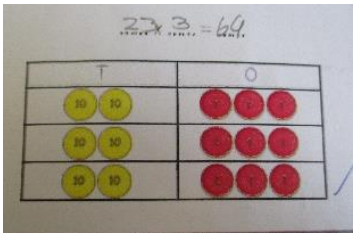
Children to draw the ten frame and counters/cubes.



base 10



place value counters



missing numbers,

Missing digit problems:

10s	1s
10 10	1
10 10 10	?
?	5

How you can help your child at home

- It is most important that you *talk & listen* to your child about their work in maths. It will help your child if they have to explain to you,
- Share the maths activity with your child and discuss it with them,
- Be positive about maths, even if you don't feel confident about it yourself,
- Remember, you are not expected to teach your child maths, but please share, talk and listen to your child,
- A lot of maths can be done using everyday situations and will not need pencil and paper methods,
- Play games and have fun with maths!