

MEASUREMENT



Calculating distances in a journey e.g. how much further?

Calculating heights of family members - who is the tallest? How much taller is dad than you?

Measuring weights of ingredients for baking.

Reading the scale on weighing machines and calculating the intervals.

Weigh your child on the bathroom scales.



Weigh them again while they are holding the family pet. Can they work out how much heavy the pet is?

Time



Calculating how long a journey will take looking at train/bus/airline timetables.

Using TV guide to calculate the length of programmes.

Programming the video or the microwave.

Setting an alarm clock.

WEBSITES

www.counton.org

www.learn.co.uk

www.bbc.co.uk/schools

<http://nrich.maths.org>

www.woodlands-junior.kent.sch.uk/maths

www.ixl.com/math

www.coolmath4kids.com

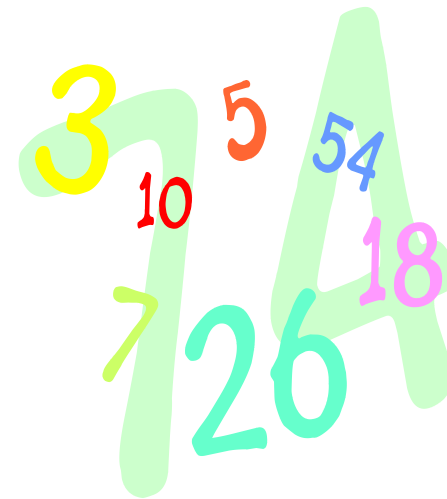
www.mathplayground.com/games.html

www.maths-games.org

Berkeley Primary School



Maths at Home



Calculator costs

Use a calculator to find the cost of one sweet:



Clues:

1. Enter the cost of the packet of sweets on the calculator display, for example 35 (pence).
2. Press the divide $\div$ button
3. Count the number of sweets in the packet, and enter this number on the calculator, for example 42 (sweets).
4. Press the equals = button
5. The answer is 0.833 (pence), which is less than 1p for each sweet.

Now use your calculator to find the cost of:

One stick of chewing gum;

One finger of a chocolate bar;

One segment of a tangerine;

One mint; and so on.

Pizza please!

Your pizza costs £3.60. Cut it into six equal slices.

How much does each slice cost?

The answer is that each slice costs 60p.

How much is half a slice?

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.

If your child cannot do their homework do let the teacher know by either writing a note on the piece of homework or telling the teacher.

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!

Here are some examples of how you can include mathematics at home:

SHOPPING

£ Looking at prices

£ Calculating change - which coins, different combinations.



Introduction

The information in this booklet is to help you to help your child with maths.

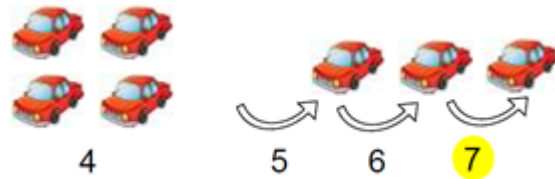
It explains some of the different strategies we use for recording calculations in school. The written methods we use are progressive ie each method builds on the previous.

All the methods are efficient in their own right and can be used with numbers of all sizes. The key is that the children have a method which they understand and with which they can experience success.

Once a child has mastered one method they will be introduced to the next stage as it may become more efficient for them but they are always given the opportunity to select the method they feel more comfortable with when applying to solve problems.

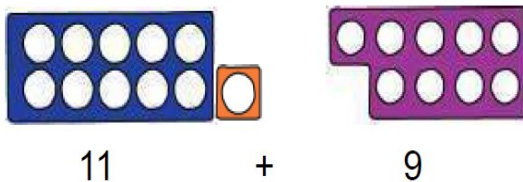
Addition

Counting objects and pictures. Up to 10



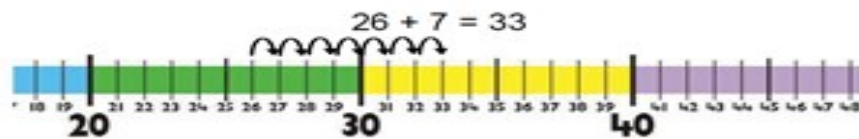
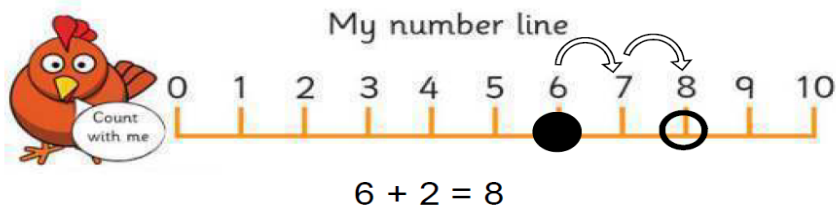
E.g.

As above, using maths equipment and moving into number facts to 20, recording using symbols

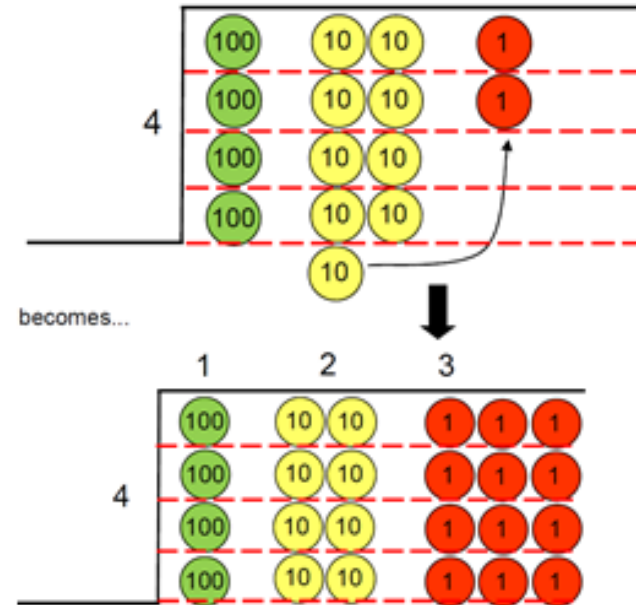


Simple number tracks / number lines to count up / on:

E.g.



Examples where exchange is required should also be provided: $492 \div 4$



becomes...

$$\begin{array}{r} 123 \\ 4 \overline{) 492} \end{array}$$

Short division - HTU and ThHTU $\div$ U

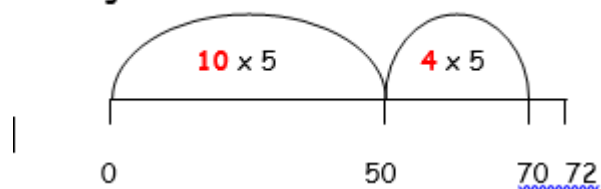
$$\begin{array}{r} 38 \text{ r} 2 \\ 5 \overline{) 194} \end{array}$$

Long Division HTU $\div$ TU; ThHTU $\div$ TU

$$\begin{array}{r} 13 \text{ r} 15 \\ 17 \overline{) 256} \\ \underline{170} \quad (10 \times 17) \\ 66 \\ \underline{51} \quad (3 \times 17) \\ 15 \end{array}$$

Including remainders

Counting on - $72 \div 5 = 14 \text{ r } 2$



Expanded method leading to Short Division

$$\begin{array}{r}
 18 \text{ r } 2 \\
 \text{e.g. } 5 \overline{) 92} \\
 - 50 \quad (10 \times 5) \\
 \hline
 42 \\
 - 40 \quad (8 \times 5) \\
 \hline
 2
 \end{array}$$

Place value counters can be used to illustrate the process



They should then record it in the formal, short division format.

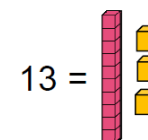
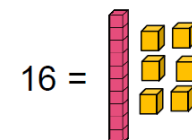
Partition and recombine. This is initially supported with the use of maths place value equipment.

E.g. $16 + 13$

$$10 + 10 = 20$$

$$6 + 3 = 9$$

$$20 + 9 = 29$$



E.g. $86 + 57$

$$80 + 50 = 130$$

$$6 + 7 = 13$$

$$130 + 13 = 143$$

Expanded column method
leading to the compact method

E.g.

$$\begin{array}{r}
 597 \\
 + 475 \\
 \hline
 12 \\
 160 \\
 900 \\
 \hline
 1072
 \end{array}$$

7648

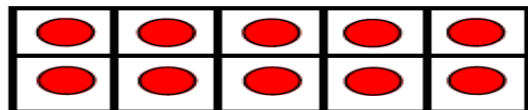
$$\begin{array}{r}
 + 1486 \\
 \hline
 9134 \\
 11
 \end{array}$$

Subtraction

Counting objects and pictures. Up to 10

E.g.

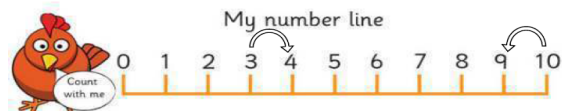
As above, using maths equipment and moving into number facts to 20, recording using symbols.



I have 10 counters. If I take away 4 of them, I will have 6 left.

Simple number tracks / number lines to count back:

E.g.



$$3 + 1 = 4$$

$$10 - 1 = 9$$

Division

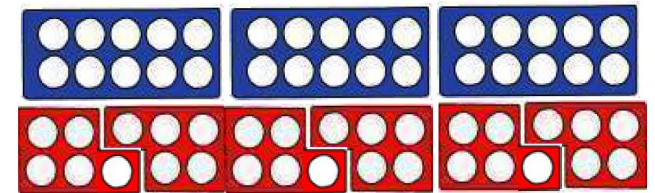
Practical real life contexts - counting in 2s

E.g. I have four socks. How many pairs have I got?



As above involving 2, 5 and 10 and using maths equipment.

E.g. How many fives in thirty?



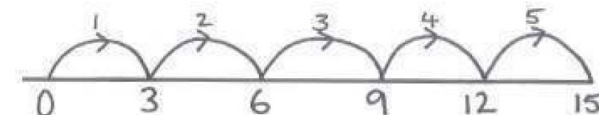
Pictorial representation.

E.g. $18 \div 6 = 3$



Informal methods of recording:

Blank number lines: $15 \div 3 = 5$



E.g.

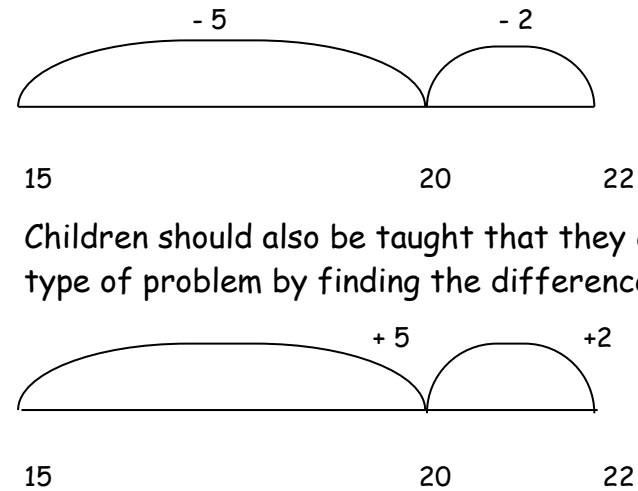
	70	6	
50	3500	300	= 3800
8	560	48	= 608

76
x 58
 48 (8×6)
 560 (8×70)
 300 (50×6)
3500 (50×70)
 4408

$$\begin{array}{r} 76 \\ \times 58 \\ \hline 608 \\ 3800 \\ \hline 4408 \end{array}$$

$$\begin{array}{r} 6749 \\ \times 26 \\ \hline 40494 \\ 134980 \\ \hline 175474 \end{array}$$

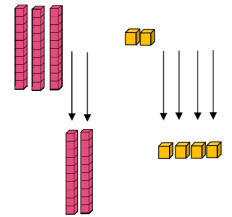
Counting back e.g. $22 - 7$



Children should also be taught that they can also solve this type of problem by finding the difference. E.g. counting on

Partitioning. Using maths equipment to help initially

E.g. $56 - 24 = 32$



E.g. 923 - 564

$$\begin{array}{r} 900 \ 20 \ 3 \\ - 500 \ 60 \ 4 \\ \hline \end{array} \quad \begin{array}{r} 900 \ 10 \ 13 \\ - 500 \ 60 \ 4 \\ \hline \end{array} \quad \begin{array}{r} 800 \ 110 \ 13 \\ - 500 \ 60 \ 4 \\ \hline \end{array}$$

$$300 \quad 50 \quad 9 = 359$$

Then to:

Then to:

800	110	
900	20	13
500	60	4
300	50	9 = 359

Leading to the compact method

$$\begin{array}{r} \text{d} \quad \begin{array}{cccc} 5 & 13 & 1 & \\ \cancel{8} & \cancel{4} & 6 & 7 \end{array} \\ - \quad \begin{array}{cccc} & 2 & 6 & 8 & 4 \end{array} \\ \hline \begin{array}{cccc} & 3 & 7 & 8 & 3 \end{array} \end{array}$$

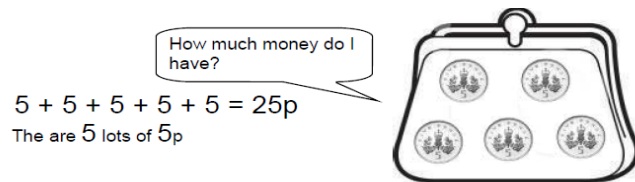
Multiplication

Practical real life contexts - counting in 2s

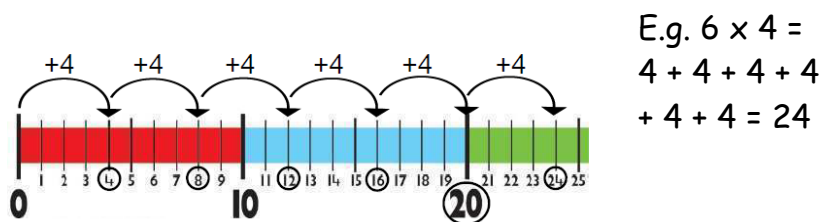
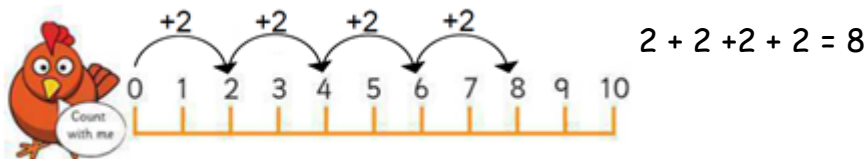
E.g.



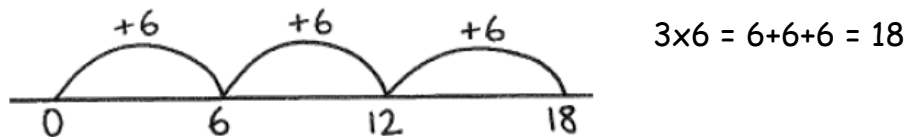
As above; counting in 2, 5 and 10



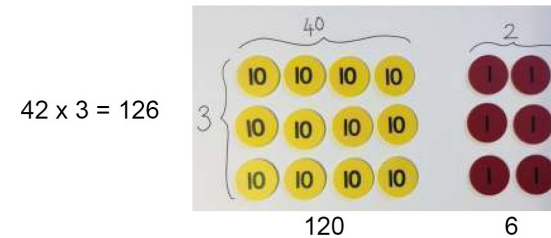
Number tracks and number lines can be used to add on and count in steps.



Blank number lines to count up:



Grid method (TO x O) (partitioning): Use place value resources to support initially



$$\text{to lead to: } 42 \times 3 = \begin{array}{|c|c|} \hline 40 & 2 \\ \hline 3 & 120 \quad 6 \\ \hline \end{array} = 126$$

$$\text{e.g. } 223 \times 8 = \begin{array}{|c|c|c|} \hline 200 & 20 & 3 \\ \hline 8 & 1600 & 160 & 24 \\ \hline \end{array} = \begin{array}{r} 1600 \\ 160 \\ 24 \\ \hline 1784 \end{array}$$

Leading to an expanded column method

$$\begin{array}{r} 223 \\ \times 8 \\ \hline 24 \text{ (} 8 \times 3 \text{)} \\ 160 \text{ (} 8 \times 20 \text{)} \\ 1600 \text{ (} 8 \times 200 \text{)} \\ \hline 1784 \end{array}$$

Children may find it helpful to record the calculations they are doing in order to keep track.

Leading to short multiplication

$$\begin{array}{r} 223 \\ \times 8 \\ \hline 1784 \\ 112 \end{array}$$