Dulwich College Shanghai

DUCKS

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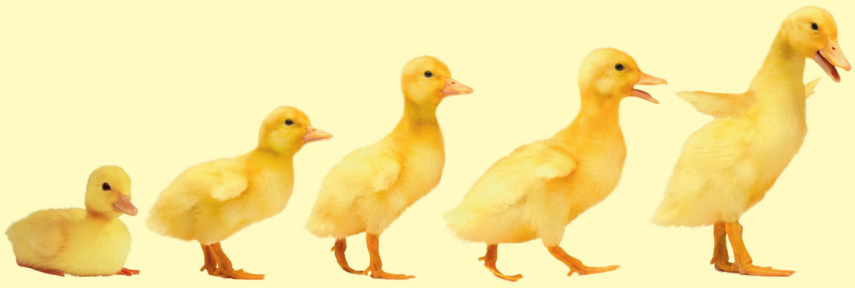
Calculation Methods in Year 1 and 2 at DUCKS



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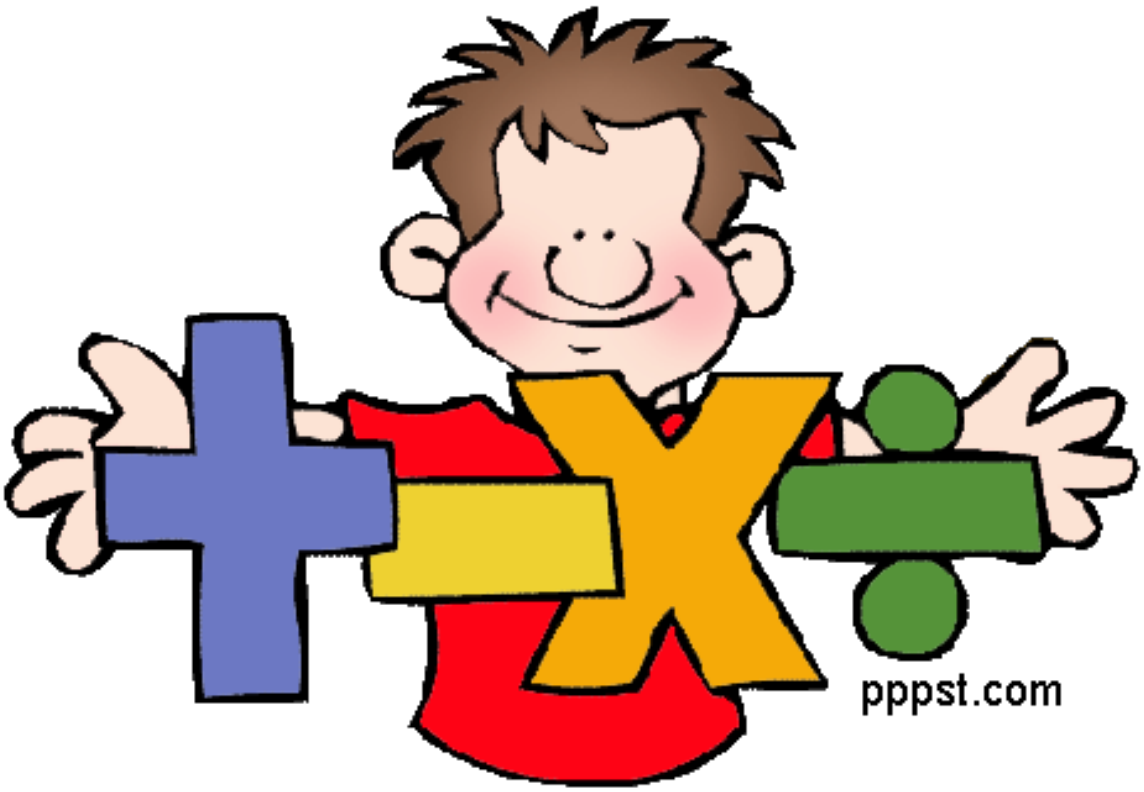
Calculation Methods in Year 1 and Year 2



This booklet has been written in order to help parents understand how the four rules of addition, subtraction, multiplication and division are taught in Year 1 and Year 2 at DUCKS and to give you some ideas of how to help your child with Numeracy at home.

In Year 1 and Year 2 at DUCKS, a great emphasis is placed upon children becoming confident in using and applying key skills that include counting, sorting, looking for patterns and relationships and working with numbers. Numeracy is taught using the objectives in the Revised Framework for Numeracy, which is guidance that comes from the UK government.

The children's understanding is developed through stories, songs, games and play, alongside written work, so that children enjoy experimenting and using numbers in a variety of ways.

At this stage, calculating is about using numbers in practical situations. This may involve comparing numbers of objects (subtraction), combining numbers of objects (addition), sharing objects equally between members of a group (division) and adding the same number of objects (multiplication). The objects could be actual items, e.g. pencils, but they could also be actions, e.g. the number of jumps.

Regular practice is essential to help children develop an understanding of number patterns and relationships. Many of our lessons take the form of structured opportunities to experiment and to question, for e.g. "How many times will this small bottle fill the larger one?"

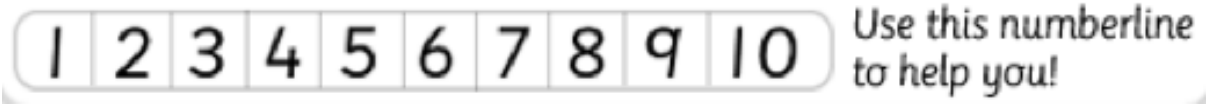
As the children progress through Year 1 and Year 2, they will learn a number of strategies to work with numbers mentally and also begin to record their methods as appropriate. Calculations are recorded in a variety of ways and the ultimate aim is for the children to be able to work mentally, not being reliant on pencil and paper methods.

Addition and Subtraction

A lot of work in Year 1 and Year 2 is done on adding pairs of single digit numbers together mentally so that the children know their number bonds to 10 or 20 and so on. The knowledge of these number bonds underpins much of the mathematical learning that your child will experience throughout their time in Primary School. They need to understand the relationship between pairs of numbers, such as:

2+3=5
3+2=5
5-3=2
5-2=3

They will also use a number line to help them with their work. A number line may look like this:

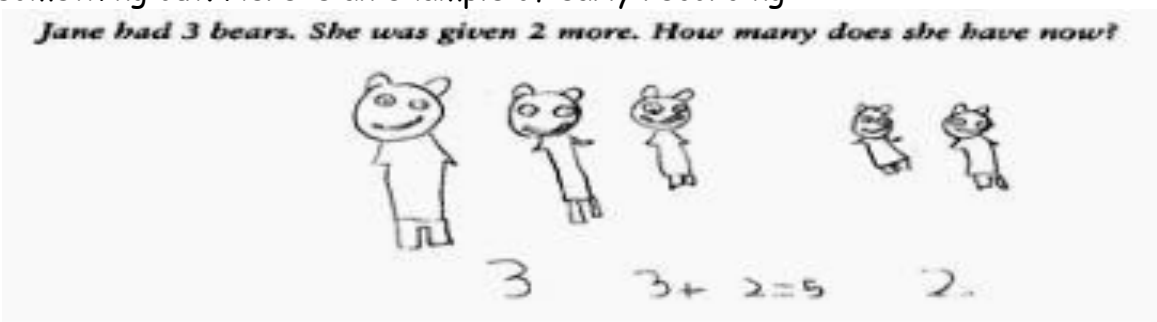


When children are in Years 1 and 2 we do not teach them to present calculations vertically like this:

$$\begin{array}{r} 6 \\ +\,4 \\ \hline 10 \end{array}$$

Instead they present them horizontally (6+4=10) as this encourages them to think how best to solve the problem.

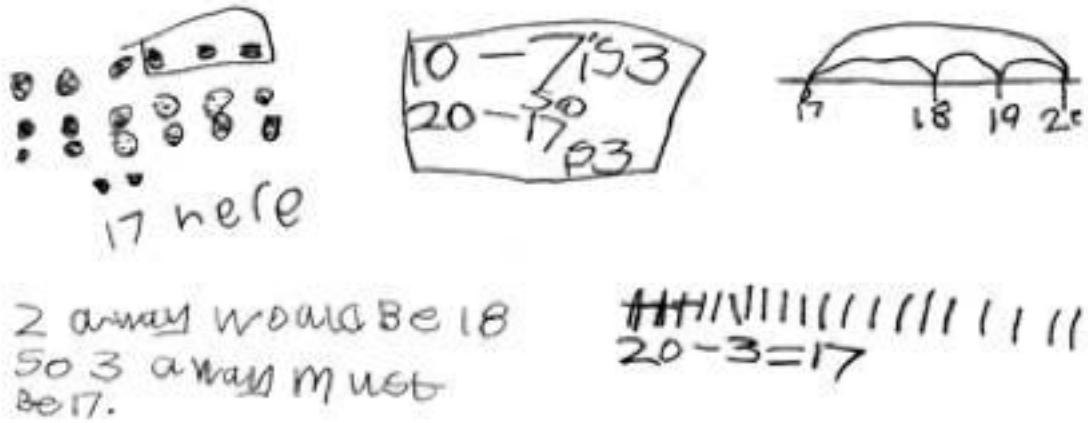
The children do a daily mixture of practical, mental and oral work including lots of counting, talking about numbers and using numbers in 'real life' situations. They will begin to record what they have done in pictures and numbers. These recordings will help them to understand what is happening and how to show how they've worked something out. Here is an example of early recording:



Addition and Subtraction continued

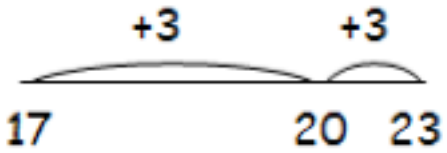
Diagrams and jottings help the children to see what is happening to the numbers and to use some facts they already know to help them work out others.
This next example shows how different children have worked out and recorded the answer to the same problem about the children in the class:

There are 20 children in our class. Three are away today. How many are here?

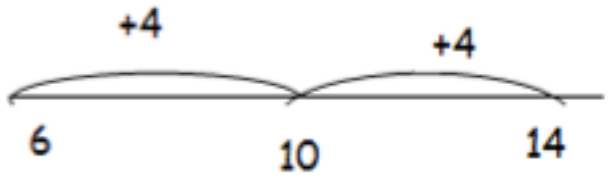


Number lines may be used as a method of recording, for example:

e.g. 17+6
(6 = 3 + 3)



Children need to be able to carry out simple 1 digit and 2 digit subtractions mentally as well as being able to record their methods. E.g. 14-6=8:



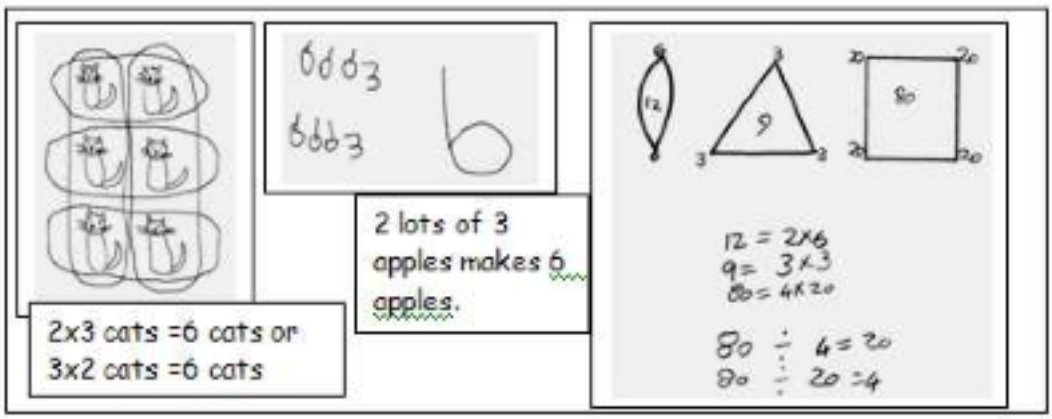
Counting up to find the difference

Multiplication and Division

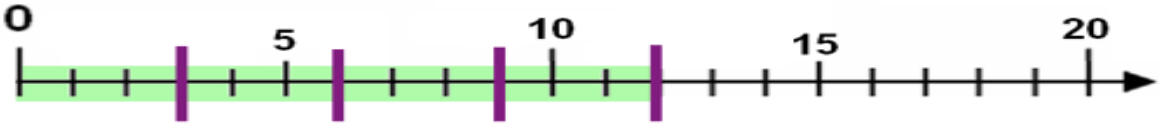
Multiplication is introduced as repeated addition and division is explained as repeated subtraction, e.g. 4x2 = 2+2+2+2.

By the end of Year 2, the children should know how to halve and double a number as well as being able to recall multiplication facts for the 2, 5 and 10 times tables.

In Years 1 and 2 the children record to demonstrate how they have done something and to show that they've understood what is happening:



Some children may also have experience of sharing, e.g. 12÷3 = 4 and of grouping (repeated subtraction), e.g. 12÷3= how many 3's make 12?



Children need to feel confident with numbers, to enjoy playing with them and using them.

If you have any questions on any of the issues in these notes, please do not hesitate to get in touch with your child's teacher at school or email:
thomas.hughes@dulwich-shanghai.cn

Some useful websites:
http://www.amathsdictionaryforkids.com/
http://www.bbc.co.uk/bitesize/ks1/maths/
http://www.crickweb.co.uk/ks1numeracy.html
http://www.topmarks.co.uk/interactive.aspx?cat=8