

Reception booklet for parents



Castor C.E. Primary School

Maths Café Information

Parents often ask how they can help at home with maths. This short guide explains the thinking behind early mathematical development in counting and offers some practical ideas to try out at home.

Children's maths skills can be greatly boosted by help at home, in the same way that regular help with spelling and reading can nurture their literacy skills. Parents are often nervous to help with maths however, worried they may confuse their child by teaching them 'different' methods ("we didn't do it like this in my day..."). At Castor Primary, we aim to teach children to work with number in lots of different ways. We know that what works for one child will not always make sense to another and that by giving them a range of different methods, they will be well equipped to select one which works for them. So please, be encouraged to talk about maths with your child, you never know, they may even teach you a new thing or two!

Some of the key skills and understanding children need across maths are:

- Understanding and using number
- Developing a mathematical language – (words used in mathematics e.g. more, less, fewer, shorter, lighter, add, subtract, makes, equals, 2 pence, o'clock, empty)
- Finding solutions to mathematical problems
- Pattern, order and relationships
- Logical thinking
- Exploring and comparing quantities, shapes and measures.

Children experience maths as part of their everyday environment. The type of maths young children do is 'hands on'. They need to touch and do in order to learn, so their early maths is based on practical activities that can be incorporated into their learning through play.

Playing simple board games is a great way to encourage maths learning – even knowing the number from the dice pattern without having to count the spots is a key skill called 'subitising'.

Counting

Counting is a skill that children often pick up very early. At first, your child might chant numbers in a 'rote' way and children become quickly very proficient at doing this to quite high numbers. There are some 'Counting Principles' that research has shown are vital for children to learn in order that they fully understand 'counting' and move on from being able to count in rote order.

The one to one principle

This involves children assigning one number name to each object that is being counted. Children need to ensure that they count each object only once ensuring they have counted every object.



Children will sometimes count objects more than once or miss an object out that needs to be counted. Encourage children to line up objects and touch each one as they count saying one number name per object. This will also help avoid children counting more quickly than they can touch the objects which again shows that they may not have grasped the one to one correspondence.

The stable-order principle

Children understand when counting, the numbers have to be said in a certain order.

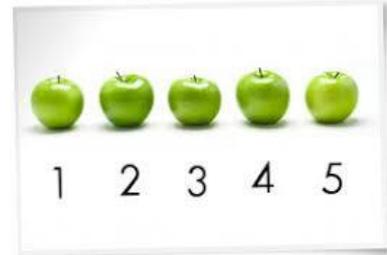
Children need to know all the number names for the amount in the group they are counting. At school we encourage children to count aloud to larger numbers without expecting them to count that number of objects immediately. This is rote counting. Counting backwards is just as important as counting forwards.... but often children are only encouraged to count forwards or if they do count backwards it is only from 10. At

school we count forwards and backwards starting at different numbers. E.g. Let's count forward to 20 from 7. Let's count backwards from 17.

A good way of practising this skill is to count forwards when you upstairs, and backwards when you come downstairs. Try starting at different numbers each time.

The cardinal principle

Children understand that the number name assigned to the final object in a group is the total number of objects in that group.



In order to grasp this principle, children need to understand the one to one and stable order principles first. From a larger group, children select a given number of objects and count them out. When asked 'How many?' children should be able to recall the final number they said. Children who have not grasped this principle will often recount the whole group again.

The abstraction principle

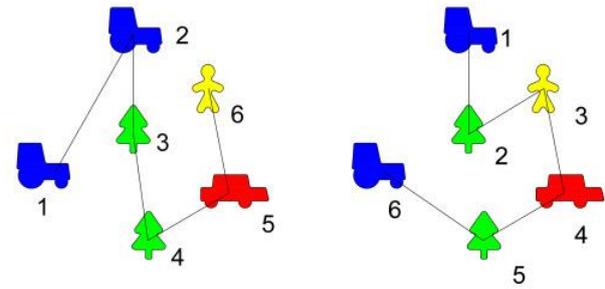
This involves children understanding that anything can be counted including things that cannot be touched including sounds and movements e.g. jumps.



When starting to count, many children rely on touching objects in order to count accurately. We also encourage abstraction on a daily basis by counting claps and jumps, or by dropping items into a bucket whilst the children have their eyes closed. They can also count imaginary objects in their head to encourage 'counting on', this involves the children visualising objects.

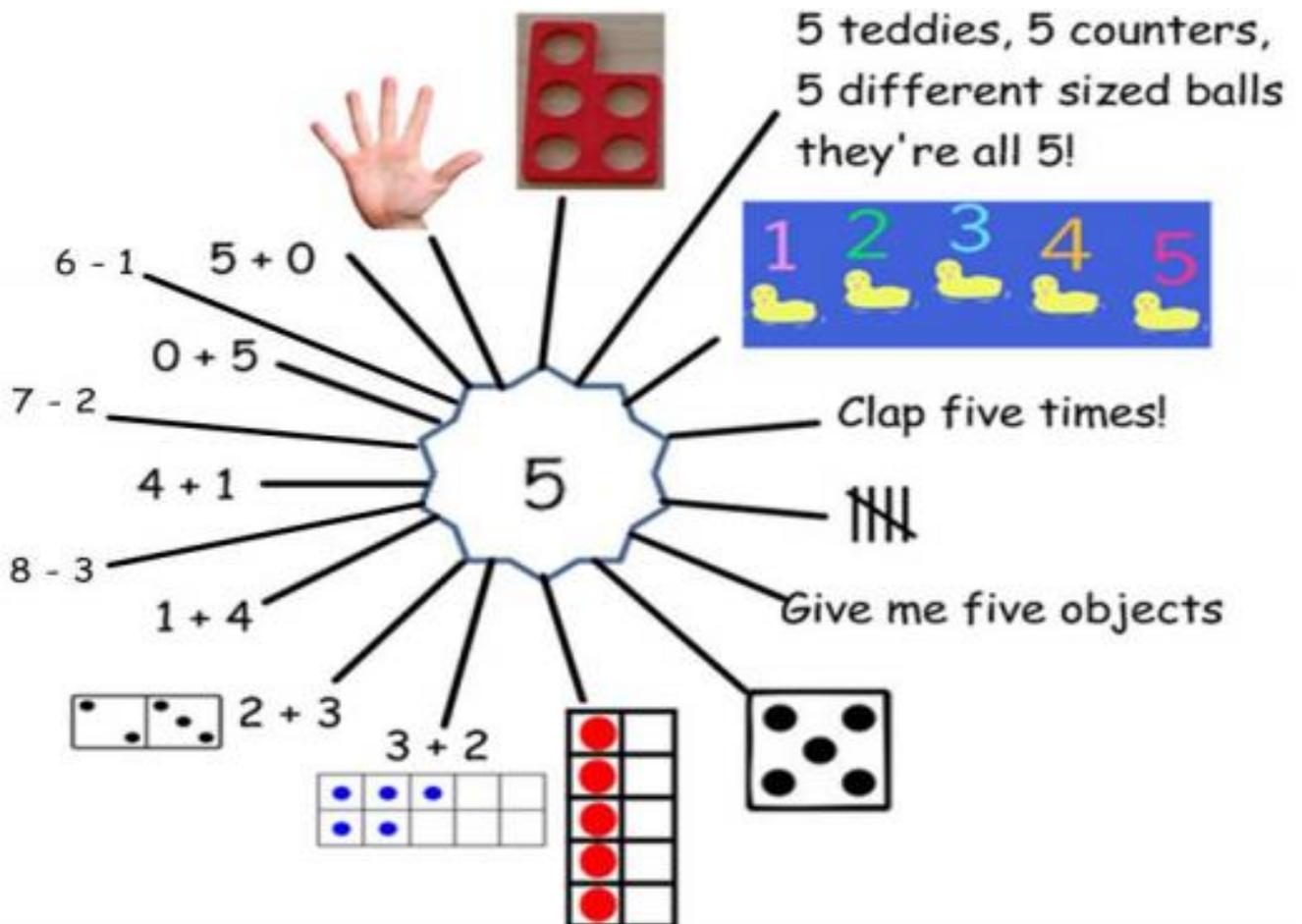
The order-irrelevance principle

This involves children understanding that the order we count a group of objects is irrelevant, there will still be the same number.



Encourage children to count objects left to right, right to left, top to bottom and bottom to top. Once children have counted a group of objects in a line, move the objects into a different formation and ask children how many there are, if they count them all over again they may not have fully grasped this principle.

Children also need to be able to represent a number in different ways. For example knowing that 5 can be represented in lots of different ways:



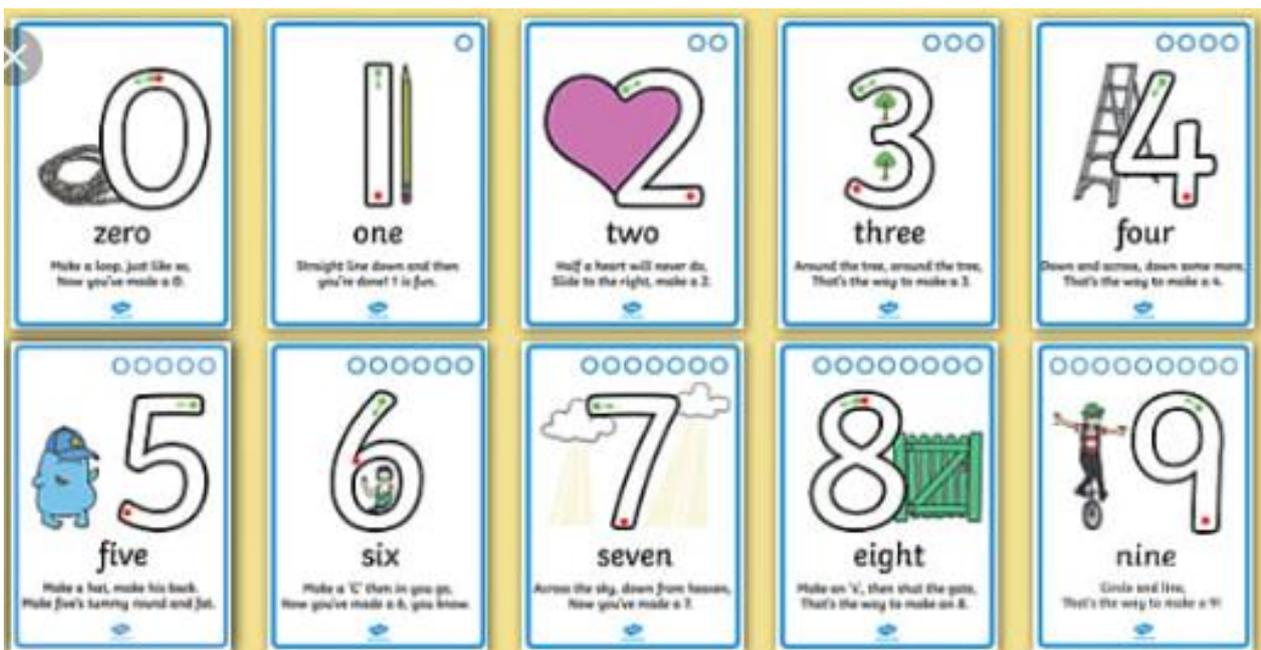
Number Blocks



The Number Blocks can help children to understand concepts within number. There are programmes that now go up to 20, which is the end of year expectation for Reception and these can be found on cbeebies and youtube.

Number formation

Correct number formation is just as important as letter formation and needs teaching in the same way. We teach numbers using a little rhyme.



Concrete Apparatus

All maths concepts are taught using the concrete – pictorial – abstract principle. Concrete resources (also referred to as manipulatives) are objects or physical resources that children can handle and manipulate to aid their understanding of different maths concepts.

The abstract nature of maths can be confusing for children, but through the use of practical resources, they are able to 'see' the maths and make sense of what is actually happening.

Once children are confident with a concept using concrete resources, they progress to drawing pictorial representations or quick sketches of the objects. By doing this, they are no longer manipulating the physical resources, but are still benefiting from the visual support the resources provide.

Once children have a secure understanding of the concept through the use of concrete resources and visual images, they are then able to move on to the abstract.

We use many different concrete maths resources –

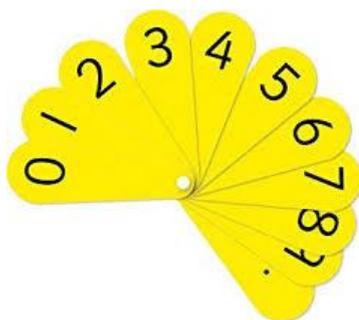
Numicon



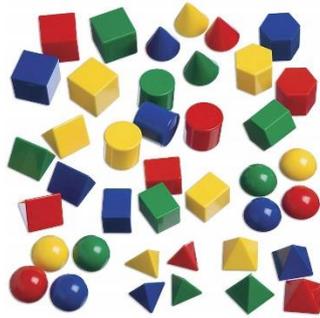
Bead Strings



Number fans



Shapes



Unifix cubes



Counters



You can use anything in maths learning that children are interested in to help them understand concepts. E.g. cars, pasta, conkers, dolls, shoes to count in 2s, gloves to count in 5s, feet to count in 10s.