



## How to Help Your Child with Early Mathematics

This handout is designed to give you a basic understanding of how children learn mathematical skills, in order for you to support your child with their continued learning at home.



There are two aspects of early mathematics that your child should acquire by the end of the Reception year and continue to develop throughout their education. These are Number (counting & calculating) and Shape, Space & Measure.

### Counting & Calculating

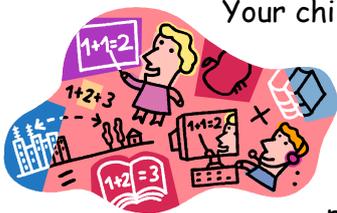


#### Early Learning Goal (to be achieved by the end of the Reception Year)

- Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.
- Children use quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.
- Children solve problems, including doubling, halving and sharing.

### Number- Counting

Your child can probably say some numbers in sequence already. By the end of the Reception year we would expect most children to be able to say the numbers to at least 20, in the correct order. Don't panic if your child always misses out a specific number - this is quite normal! Take every opportunity to say the numbers in order, e.g. when walking to the car, coming down some steps, getting dressed, etc.



Your child also needs to use this sequence and apply it to a quantity. Counting objects really helps with this concept. It's a good idea to put some objects in front of your child and ask "How many have we got?" (It's best to start off small and increase, so start with 3 or 4 objects). Watch your child carefully as they count the objects. They will need to point to one object at a time and say only one number. This is called 1:1 correspondence counting. If your child gets muddled when counting objects, suggest they put the objects in a straight line and show them how to point to each one in turn. Your child also needs to be able to count out a given number of objects from many, e.g. give your child a pot of buttons and ask them to find just three. They need to know to say one number as they take one button out of the pot and remember to stop when they reach three!

Some children pick up this skill quickly and soon develop a visual memory for quantities, e.g. they see 3 objects and say "3" without having to count them.



As adults we rarely have to count small quantities because we have developed a visual strategy for number. If your child is beginning to do this please encourage it!

Some of the number learning in Reception and Key Stage 1 is based around a resource called *Numicon*. Each number is represented by a 'plate' with a corresponding number of holes. Teachers use *Numicon* in several ways. At the beginning of the Reception year children are encouraged to remember which shape relates to each number. As the year progresses *Numicon* is used to help children understand simple addition and subtraction and place value concepts. The shapes are very simple and designed to "fit" together for addition and subtraction to help your child learn number facts by heart. By playing with these plates children begin to create a visual pattern of numbers and their sequence e.g. they can see that 5 is bigger than 2.



Your child also needs to recognise each numeral (written numbers) from 0 to 20 at least. Things get quite complicated in the 'teens' because your child has to remember that two digits are written to make one numeral! By using flash cards and having numerals around the house your child will soon pick up the concept. Start with numerals that are important to your child, such as their birthday, house number, car number plate, etc.

### Number- Calculating

When your child has some understanding of the number sequence and quantity they need to begin to understand simple addition and subtraction.

Having spent time helping your child to understand the sequence of numbers a great place to start learning about addition and subtraction is by finding one **more** and one **less** than a given number. This will need to be done practically and perhaps with a story behind it so your child has a better understanding of the words you are using e.g. "I bought 3 apples, when I got home I saw **one more** in the fruit bowl, how many apples did I have altogether?"

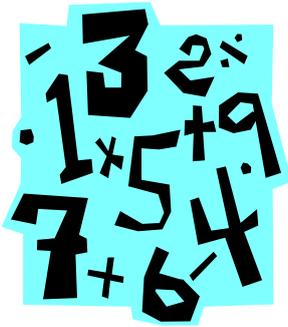
Number rhymes and songs are great for helping children understand simple subtraction, e.g. 5 Little Speckled frogs, 10 Green Bottles, etc. Again, the best way is to actually use real objects or fingers to help count and then your child can really "take one away"!



Giving your child very simple problems to solve will develop your child's understanding of addition and subtraction. A great "problem" is setting the table for dinner. You can ask your child to find the correct number of knives and then forks for each person. Then challenge them to work out how many items of cutlery each person will need and even the whole family! Of course, the first time you try something like this your child may not understand what is being asked of them. Don't assume they can't do the maths! Try

using different words to explain the challenge and if they still seem unsure show them how you would work it out.

Children in school may use *Numicon* to 'build' sums and find pairs of numbers that make the same total. It is helpful if your child begins to remember these "number bonds" e.g.  $1+4=5$ ,  $2+3=5$ ,  $0+5=5$ . By moving and exploring the Numicon plates your child can 'see' how the numbers go together to make the same total.



Most children begin writing sums towards the end of the Reception year. We aim to teach the children to understand what is happening to the numbers before asking them to write anything down. To write a sum your child will have to understand that the add sign ( + ) means putting two quantities together and the subtraction sign ( - ) means taking some away from a quantity. This is quite confusing for most children, which is why we spend most of our time helping children to understand the concepts.

## Shape, Space & Measure



### Early Learning Goal (to be achieved by the end of the Reception Year)

- Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.
- Children recognise, create and describe patterns.
- Children explore characteristics of everyday objects and shapes and use mathematical language to describe them.

### Shape & Space

Your child will need to learn the names of common shapes e.g. circle, square, triangle and begin to know the names of 3d shapes e.g. cube, cylinder, pyramid, etc. The words to describe the shapes e.g. round, straight, corner, side, curved, etc also need to be used. The world is made of shapes so challenge your child to go on a "Shape Hunt" in the house, garden, when out for a walk and try to find as many circles/curved shapes/triangles/ corners as you can!

Your child needs to know how to sort and match objects. Coins are great for sorting. Provide your child with some bowls and allow them to sort the coins into different criteria e.g. large and small coins, silver and brown coins, etc. Don't stop at sorting coins, try buttons, sweet wrappers, dried beans, etc!



We also teach children how to recognise and continue simple repeating patterns. Patterns are easy to find and make. Tesco shopping bags have a blue and white pattern, some clothes (especially men's ties) have repeating patterns. Point them out to your child and say what the pattern is e.g. "blue, white, blue, white, blue". Try drawing some patterns. Start with two colours and alternate them. Start one off for your child to continue.

Children also need to understand and use words to describe position. You could hide a toy somewhere in the house and explain where it is for your child to find, e.g. "Teddy is under the bed, behind a box".

### Measure

Measures include length, time, weight and capacity. Provide some time when your child can explore these concepts. Throughout Reception we do not use standard measures e.g. centimetres or grams but provide opportunities for the children to experiment and explore what happens when we use measuring equipment.



For example, measuring parts of our body using small cubes. We compare the results and talk about who is the tallest! You can help at home by allowing your child to 'play' with the kitchen scales, using a height chart, exploring different containers in the bath, telling your child what the time is and talking about the "long hand" and "short hand" position.

Getting dressed in the morning is the perfect opportunity to learn the sequence of ordinal numbers e.g. first, second, third, etc. Another good opportunity for learning this order is racing cars on a track. Ask your child which came first, second and third.

Maths is all about problem solving- so have fun!

Please see our maths policy, available on the school website for more information.