

NURSERY EDUCATION

Information for Parents & Carers

Areas of Learning and Early Learning Goals



3: Mathematical Development

At Burton Latimer Day Nursery we aim to provide the highest quality nursery care and pre-school education to ensure children are effectively prepared for the next stages in their development.

The Foundation Stage Curriculum (as laid down by the Qualifications and Curriculum Authority [QCA]) covers a range of educational experience organised in six areas of learning: 1) Personal, Social and Emotional Development; 2) Communication, Language and Literacy; 3) Mathematical Development; 4) Knowledge and Understanding of the World; 5) Physical Development; 6) Creative Development.

This information sheet covers one of the six areas of learning. For information on the other five please visit our website

www.bldn.skynet.co.uk.

The information below details QCA text within the box, showing the Early Learning Goals that most children will achieve by the end of their reception year in school. This is followed by details of how we, in the Nursery, work towards these goals with progressive activities that form 'stepping stones', building on what children have already learned whilst continuing to practise, refine and use their previous learning.

Say and use number names in order in familiar contexts. Count reliably up to 10 everyday objects. Recognise numerals 1 to 9. In practical activities and discussion begin to use the vocabulary involved in adding and subtracting. Use language such as 'more' or 'less' to compare two numbers. Find one more or one less than a number from 1 to 10. Begin to relate addition to combining two groups of objects and subtraction to 'taking away'. Use language such as 'greater', 'smaller', 'heavier' or 'lighter' to compare quantities. Talk about, recognise and recreate simple patterns. Use language such as 'circle' or 'bigger' to describe the shape and size of solids and flat shapes. Use everyday words to describe position. Use developing mathematical ideas and methods to solve practical problems.

Mathematics are a part of our everyday lives and the Nursery ensures that the daily routine enables children to have every learning opportunity.

The staff ensure that children are confident with the subject and have every opportunity to explore and extend their mathematical knowledge. This is achieved through a range of practical activities. They are planned to allow children first hand experience enabling them to develop an interest and understanding of the subject.

Within the Nursery we provide opportunities for children to gain knowledge in:-

Measuring - length and area, weight, volume, capacity, time and money

Shape and space

Number

Pattern - sequencing

Sets and sorting

Mathematical Language

Mathematical terms can be quite difficult for pre-school children to understand. Staff plan activities to use suitable mathematical terms and vocabulary, and help children to understand the concept. Every opportunity is given to extend children's vocabulary. Conversations and discussions are held using the correct terms e.g. longer, shorter, behind, under etc., and again reinforced through the range of planned activities.

Counting and Number

Even though many children can recite numbers up to ten, they may not have a real understanding of number. Counting is a complex process that requires an understanding of certain principles. Through careful observations and through one to one work with their keyworkers and our Early Years Teachers, children are given every opportunity to grasp the principles of counting and number conservation.

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3: Mathematical Development (cont 1.)

Counting Development

Everyday activities are provided around the Nursery to aid counting skills. Cups are counted out at snack time, forks to knives, coats to hooks etc. Toys and equipment are continuously counted aloud with children as they use them. Number songs and rhymes are used at every session and our themes such as 'The Hungry Caterpillar' and 'Handa's Surprise' are carefully chosen to include counting and number work. Children are given opportunities to learn about conservation of number: that three apples remain three no matter how they are grouped or moved around. Conservation of number is emphasised by staff during everyday activities.

Numbers

Numbers again are part of our everyday lives and children will be familiar with some already e.g. house number, their own age number. Whenever possible numbers are displayed around the Nursery, on display boards, birthday board etc. Staff encourage children to look for numbers on clocks, watches etc. On outings from the Nursery children observe numbers on cars, buses, shops etc. Number lines are continuously displayed around the Nursery. Children are encouraged to participate in the making of these to fit around the theme. Numbers are also incorporated from time to time from other countries and cultures, and shown alongside our own number system.

Number Practice

Activities within the Nursery provide opportunities for children to use addition, subtraction, multiplication and division. Staff encourage children whenever possible by the use of mathematical language, for example, adding bricks in construction work, by taking objects away and posing questions. Multiplication can be demonstrated by seeing that a car has four wheels, and looking at how many wheels two cars have. Sharing at snacktime, dividing apples and fruit, cutting up playdough etc. all helps to develop division skills.

Measuring

Children are introduced to measuring with standard units - kilograms, minutes, metres etc., but also non-standard units such as buttons, rice, conkers etc. Children are encouraged to estimate before they measure and then to compare their estimates with their findings. Children measure everyday objects, draw around hands and feet (to compare area), use tape measures and rulers. At regular intervals, Fitting Technologists from local shoe companies visit the Nursery to collect data and information on shoe sizing. These visits give the children the opportunity to use a foot gauge, collect measurements, and to see measurements used for a purpose. Children use scales to weigh ingredients for cookery or just to compare everyday items. They are encouraged to look at weights on everyday items such as food boxes and cartons whenever possible. Bathroom scales are used from time to time. Children have the opportunity to play and experiment with water daily. Sand or a sand alternative such as rice, compost or wheat is also available at every session. This enables children to estimate, for example, how many cups fill the jug? They are able to explore volume, capacity etc.

The concept of time is difficult for pre-school children to understand. However, the Nursery routine acts as a marker for example, snacktime, storytime etc. Group time is used to talk about the past and present, families etc. and the cycle of time. We also use themes to mark the passing of time, for example, Autumn and Harvest, Spring and Easter. Clocks are displayed in every room of the Nursery and staff refer to them continuously e.g. time to pack away for snack.

Children are able to go out to the shops (fully supervised) and the Post Office, bank etc. at every opportunity to enable them to use real money. The home corner is used for role playing opportunities such as shops, restaurant etc.

Pattern

Pattern occurs both in number and shape. With the help of the large selection of equipment within the Nursery, staff encourage children to look for pattern whenever possible. Patterns are looked for in our everyday environment, bricks in walls, curtains, wallpaper etc. It can also be seen in animal markings, plant life etc. The themes are carefully planned within the Nursery to take advantage of the resources and environment all around us. Printing, painting and collage activities are provided for the children to create their own patterns. Threading, lacing and peg boards are also valuable activities.

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3: Mathematical Development (cont 2.)

Shape

Shape is displayed all around the Nursery, on posters, display work etc. There is also a large selection of equipment within the Nursery to aid shape recognition e.g. games, puzzles, construction etc. We also have a selection of shaped soft play cushions for children to sit on, build with or use for role-play. Staff continuously name shapes around the Nursery, aiding shape recognition. A great deal of the construction material available to children allows them to tessellate.

Sets and Sorting

Sorting skills are developed within the Nursery with a selection of equipment and planned activities. Pre-school children sometimes find it difficult to sort more than one object or colour at a time and staff encourage the development of these skills. Boxes and trays are provided and a selection of objects such as shells, beads, etc. The children are always encouraged to tidy away activities and this exercise aids sorting skills e.g. putting things in correct boxes, tidying craft materials into trays etc.

Adult Role

The adult role is extremely important in two ways, by providing an environment enriched with mathematical potential and by the interaction and the vocabulary used by staff. Staff use their observations and assessments to check on the progress of individual children and future activities are planned around their findings. Mathematics should be a fun and interesting subject and the staffs' attitude to mathematics is always positive.

Extended Learning

As with the other areas of learning, there is an extended mathematics curriculum for four year olds. Activities are carefully planned to support further learning and to explore mathematics in more detail. Children can only really gain knowledge and understanding of mathematics through practical activities. First hand experience and exploration together with a sense of fun installs and develops the skills necessary for real understanding of the subject.