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Learning to count: Alexandra Nursery School

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Brief description

This example, about a nursery, shows how a structured teaching programme in mathematics has been devised, which is closely linked to developing children's understanding of words and phrases. There is a strong emphasis on counting and developing the concept of number through song, alongside adult-led sessions and a wide range of linked experiences indoors and out.

Overview – the provider's message

'Counting is the important thing. Children cannot move on until they know the number sequence and what "one" and "two" mean. Our baseline assessments show that children who come with low levels of understanding in English and poor communication skills also have lower than expected levels of skill in mathematics. We know that teaching children in differentiated groups to develop their communication skills works. After six weeks, the difference shows. We now apply the same principles to mathematics.'



Barbara Kenny, Headteacher

The good practice in detail

Background

The Nursery is arranged to provide as much space as possible for children to move around and to use the floor as well as tables for their chosen activities. Well-organised resources enable the children to be as independent as possible indoors and out. Key procedures, such as how to wash paintbrushes and how to use the climbing tower safely are modelled effectively. Those children who are in the early stages of learning English are encouraged to use signs as well as key words and phrases, which eases settling in and boosts confidence. All key persons have a camera and regularly photograph what the children do in addition to keeping notes and records of what children have said.

Print and numbers are highly visible throughout the Nursery: for example, a line of numbers to 10 hangs above the wallboard where children make marks, and cards with one to five are pegged on a line for children to sequence. The indoor climbing frame has numbered outlines of one, two and three footprints on subsequent steps. Resources reflect everyday life – tape measures, socks, metal bowls and toy bears in differing sizes, shapes and colours.

The scheme of work in action

The scheme of work for number, shape, space and measure is rooted in *Development Matters*. Each learning objective is linked to specific mathematical language; resources; activities; observation points; and indoor and outdoor enabling experiences.

Friday is the planning day, when the staff discuss the observations of children and plan the following week's provision, including enabling activities and 'together time' sessions using the schemes of work for mathematics and communication, and children's interests, stories and songs.

LEARNING OBJECTIVE	ACTIVITIES
Say some counting words randomly N16-26	Hands, feet and voices Saying numbers out loud in the correct order-said or sung to 3 Clap counting, stamp feet as counting, jumping etc.
(Realises not only objects, but anything can be counted, including steps, claps or jumps) (N30-50)	Start session by clapping, jumping to 3 then introduce <i>Digit</i> and his basket of counting things counting one number, one object to 3 <i>Digit</i> wears number 3 and has 3 spots. Counting star, spider, kitten
Beginning to organise and categorise objects N16-26	<i>Digit</i> and his basket of sorting things-cars, teddies, apples, dolls, trays or large pieces of card to put separated objects on To sort objects according to 1



Activity plans record what children do and say, and how well each child has met the learning objective. This regular monitoring means that additional support is provided effectively and more able children are challenged with additional activities.

'We know we have to find lots of different ways to count, count and count', says Barbara Kenny. 'For "together time" sessions, I came up with *Digit*, our counting friend and his basket with things to use for counting and sorting'.

Adults take every opportunity to encourage children to count whether it be counting blocks as they build a wall, or scoops of sand going into a bucket. They sing counting songs. New words to well-known tunes are introduced so that there is an equal focus on counting forwards as well as backwards. Workshops for parents and carers explain about how to count with their children. And song sheets, recipes and bags of objects, such as skittles and balls, are provided for parents and carers to use at home.

Staff have a clear understanding of what each child is to gain from the planned activities. Similarly, each key person knows which children are to take part in focused sessions,



such as those with *Digit*, and how the content relates to the scheme of work and the children's stage of development. Plans are displayed prominently alongside reminders to staff of what to consider when selecting resources and activities as part of continuous provision. For instance: 'Remember to provide resources that will give opportunities for saying number names in sequence, for counting and finding how many ...'



Staff know what interests the children, and link activities to their level of skills. They observe carefully to identify what the children need to learn next. In making salt-dough fruit and vegetables to sell in the 'shop', the children talked about shape and size and made comparisons with the real things. Some children were helped to sort, categorise and count them, while others counted the different fruits and wrote their own number labels. In an adult-led session, children were asked to sort, match and categorise a box of mixed

plastic fruits from the shop. They were helped to name each fruit and then to say if one selected was the same as others in a basket. The adult's repetition of particular phrases, such as 'another apple' and 'yes, the same' was echoed by some children. Their actions showed how they could sort and categorise, and select one and then 'another one' when asked, but not count consistently one-to-one.

Themes from stories provide activities to improve counting and the use of specific mathematical language. A letter from Baby Bear, for example, asked a group of children to help Bear find his five lost friends. Having counted five fingers, they followed paw prints out into the garden and found bears 'underneath the bench', 'beside the tree' and 'on top of the bench'. The adult asked them to count and to double check to make sure that they had all

five bears. She then invited them to compare the size of the bears: 'Is your bear smaller than that one?' which led to them deciding that there were 'two little, two big and one medium bear'.

When baking gingerbread men, three children were encouraged to count and check the one-to-one correspondence at every stage from deciding how many bowls were needed to putting in spoonfuls of butter, syrup and cupfuls of flour. The repetition showed how all could count correctly to 10 with an adult's help but how, unaided, one child was insecure beyond three and another beyond six.

Digit, 'our counting friend', is a firm favourite with the children. Sessions with *Digit* follow a defined structure and include singing, clapping, counting in different ways and solving simple problems using items in *Digit's* basket. Children recognised number 10 on *Digit's* ear and counted one by one the 10 spots on his chest. They clapped to 10 and then jumped counting to 10.

Out of the basket came three boxes of differing sizes. Individuals volunteered to put toy angels into one box,

counting as they did so and finding the corresponding numeral. Then children swung a star on a string or bounced a spider on a string as they counted as far as they wanted to go. This showed, as in the baking session, how insecure some children were at key points such as 16/17 or 29/30. In another session, *Digit* had donned number five. Several children



needed the steer of the adult's hand to 'point count' each of the five spots on *Digit's* chest and to prompt their counting as they dropped five feathers one by one.

Repetition of such counting experiences, using a wide array of items to keep the tasks fresh, pays off in the children's developing use of relevant mathematical language and their skills in counting. When they leave the nursery, their progress is significant. Most are at the level expected for their age and many exceed it. A key factor in the nursery's success is the strong team work: teaching and non-teaching staff work together to develop aspects of the provision. They share ideas, try them out and evaluate their impact. In mathematics, this has given everyone a deep understanding of the importance of counting.

Provider background



Alexandra Nursery School is a large nursery with about 120 children aged 0 to 5 years in Daubhill, close to the centre of Bolton. The area is highly diverse in the range of faiths, cultural heritages and the languages spoken. Most children start with little or no understanding of English. Specialist resources are provided for eight children with disabilities and specific special educational needs.

Alexandra Nursery is linked with Alexandra Children's Centre. Both the Daycare and the overall effectiveness of the Nursery were judged to be **outstanding** in inspections in March 2012.

Are you thinking of putting these ideas into practice; or already doing something similar that could help other providers; or just interested? We'd welcome your views and ideas. Get in touch [here](#).

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