

Developing Counting at Derwent Primary School

A case study from Early Years



Overview

Jayne Inger is the Foundation 2 Teacher at Derwent Primary School. Jayne took part in East Midlands West maths hub Counting Project in 2017/18. At Derwent the Foundation stage 2 children have been introduced to the 'collection boxes' and are now displaying higher levels of involvement in daily counting activities. She explained:

"The counting collections are extremely popular. The children are eager to count and often ask to use the boxes independently. They no longer want to count and go, they will ask to change their box and count again."

The Counting Project at East Midlands West maths hub

The project aimed for practitioners to develop provision for counting in Early Years mathematics within their school/setting environment. It was intended that the children in the project settings would display higher levels of involvement in counting activities and communicate their counting strategies in a way that is observable by adults. It was hoped that project settings would develop practice underpinned by a clear knowledge of counting principles (particularly related to cardinality) and that setting practitioners would feel more confident in how to support children's early counting.

What we did at Derwent Primary School

At Derwent, Jayne introduced the boxes of collections by first modelling how to use them and how to take care of them. The boxes are stored in a designated area of the classroom along with other counting resources, such as, ten frames, small containers and small bags, which are used by the children to organise their counting. The boxes have been colour coded according to the number of objects contained. Initially, I started using the boxes in my maths lessons and during focussed group activities. This gave the adults the opportunity to observe children counting. Jayne was then able to use her knowledge of the counting principles, revised on the maths hub training course, to scaffold the next steps in the children's mathematical learning. As the children became more familiar with the collection boxes, they wanted to use them more independently and often ask to 'count'. To encourage children to communicate their understanding of counting principles I introduced a puppet. The children were asked to observe if the puppet counts correctly and also identify what the puppet does wrong. Children have also been working in pairs, which has encouraged talk related to counting and given them the opportunities to learn from one another's strategies.

What the children did...

With the help of a puppet, the children have been practising their verbal counting. Once confident at saying the numbers in order from one to ten then twenty (unbreakable list), the children have been counting from different starting points (breakable list), continuing the count when the puppet stops. The puppet also helped them with their object counting. They were able to identify stable order and one to one errors made by the puppet. Not only were they able to say that the puppet was wrong they also began to tell the puppet how to do it right by making suggestions such as “say the numbers in order, after 6 is 7,” or “touch it and say one number.”

For those children who were not yet counting one to one consistently, a range of strategies were developed through the use of the collections and organisational resources. One boy counted more accurately once he had spaced the objects more evenly using either the small dishes or the cake cases. Another girl used the small plastic cups to cover each object. When lifting each cup in turn to reveal an object she shouted the next number name. One boy who re-counted the objects each time he was asked how many, played the game of hiding the objects in a small bag as he counted them. (Developing cardinality) Using the ten frames to organise their counting has started to develop an early understanding of tens and ones. One girl organised and counted 43 objects using the frames and then made the comment that she had used 4 tens, before writing the two digit number correctly.

The children have been recording their counting by drawing circles or lines. They started this by working in pairs, one child being the counter and their partner the recorder. Children demonstrated cardinality when they asked each other how many, then checked that the amount drawn was the same number as the object count before circling the last number name said, on a number track. They then went on to recording their own counts by themselves. Working in this way they developed their own different strategies, such as, counting the objects first then drawing the same amount, making a mark for each one as it was counted or placing the objects on the paper and drawing round them. When counting bigger numbers (17) using the ten frames, one girl circled ten of the marks she had drawn.

The children are beginning to make their own choices when organising their counting:

“I am putting them in a line, then counting.” Leo, age 4.

“If there is more than 10 I will need another 10 frame.” Mason, aged 5



Summary and next steps

Derwent has developed their provision for counting giving the children more opportunities to practise and develop strategies according to their stage of counting development. Children are being encouraged to communicate their counting knowledge both verbally and through the use of drawings. Derwent are continuing to develop their approach to teaching early maths by ensuring that all practitioners in the setting have a clear knowledge of the counting principles and are using this knowledge to move the children forward.

If you are interested in engaging in similar work with East Midlands West maths hub...

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