

Developing Counting at Greenwood Primary and Nursery School

A case study from Early Years



Overview

Lizzie Moore is the Foundation Stage 2 Teacher at Greenwood Primary and Nursery School. Lizzie took part in East Midlands West Maths Hub Counting Project in 2017/18. The children's Mathematical vocabulary and problem solving skills have significantly improved. She explained:

"The children love the 'Counting Collections'. All children, regardless of ability, have fully immersed themselves into this activity. I have witnessed the children using the correct vocabulary when sharing the collections in half with a friend and I have even seen the children devising their own Mathematical problems

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 Greenwood Primary and Nursery School

After attending the CPD event, Lizzie decided to:

- Research the given websites and resources shared at this event.
- Share information and knowledge gained with colleagues.
- Readdress the collections already available in the classroom.
- Assess the current classroom maths area and organise resources in a way that better enabled the children to be independent learners.

She believed a purposeful environment and well-educated staff was paramount in order for this project to be a success. With all this in place, she was able to plan and deliver a week of maths which started with an introduction to collections.



What the children did...

The children were involved with this project from the beginning. Lizzie asked them to help her to create a 'Collections Library'. Children helped to organise the collections in a way that was easily accessible to them. Lizzie informed the children these collections were to be used to count and record their findings in any way they wanted. The children initially explored the collections: counting, organising, sharing, and even creating patterns with them. By enabling the children to focus on one set at a time, their number conservation skills were consolidated - watching children line objects up, count, and then proceed to count the objects whilst placing them in pots proved this. The amount was still the same. The children were then asked to record their findings using the template provided. Children drew spots, pictures, marks, and numbers. To extend this further, Lizzie introduced the skill of estimating. Whilst exploring a larger set of collections, the children were asked to estimate how many were in the collection. Children also recorded this on their record sheet. Children of all abilities were able to do this as a result of carefully organised differentiated collections.

The next stage involved introducing the 'ten frame'. Even though Lizzie was conscious to include all counting abilities, she was particularly interested in pushing the higher attaining children further. Being able to count in 10s was something that the children had only briefly explored early on in the academic year. Now, with the help of collections, Lizzie wanted the children to use their 'conceptual subitising' skills to instantly recognise once the frame is full that it is a set of 10 objects.

A third stage involved the introduction of 'part part whole' relationships. This also involved 'hierarchical inclusion' here as the children needed to understand all the whole numbers included within a number. By visually splitting a full set of collections, the children could see part-whole relationships.

George said:

"I know there are 20 because two frames are full."

Hannah said:

"14 and 14 make 28. I can push them back together to make 28 again."



Summary and next steps

Greenwood Primary and Nursery School have been able to develop a love for Maths by enabling children to be independent explorers. Through allowing the children to explore collections practically and more formally and by recording their findings, the children have been able to deepen their Mathematical thinking.

Greenwood Primary and Nursery School are continuing to develop their approach to teaching early Maths by using a visual register, using ten frames. Mental and oral starters will continue to develop children's 'perceptual subitising' and 'hierarchical Inclusion' recognition.

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

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