



# EARLY CHILDHOOD

## PLAY • PRACTICE • PROVOCATIONS

### Noticing and Nurturing Counting Principles in Early Childhood

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#### Reflection Vignette

##### Setting the scene

This reflection is drawn from one session in a series of consulting workshops facilitated by Dr. Cath Pearn and Di Liddell with the early childhood educators at Kilvington Grammar ELC.

The purpose of the series was to build educators' knowledge and confidence in applying the Counting Principles. Earlier sessions focused on unpacking the academic literature and developing a shared understanding of these principles.

In this particular session, the emphasis shifted to practice, with a focus on how the principles could be meaningfully embedded into everyday teaching and learning experiences.

#### The Provocation

A provocation was developed to encourage educators to notice the mathematics that naturally unfolds in children's play, with a particular focus on how children demonstrate their knowledge of the Counting Principles.

To support this process, a Learning Observation Template was designed for educators, together with Dr. Cath Pearn & Di Liddell, to use in recording their observations.

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| Counting Principles |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Area                | Stable order                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | One to One correspondence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Cardinality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Observations        | <ul style="list-style-type: none"> <li>- Says some number words in sequence, but may skip or repeat numbers</li> <li>- Order may vary between attempts</li> <li>- Recites number sequence accurately in familiar contexts</li> <li>- May pause or hesitate at higher numbers</li> <li>- Counts confidently and fluently in the correct order</li> <li>- Uses the number sequence to support accurate counting</li> </ul>                                                                            | <ul style="list-style-type: none"> <li>- Recites number words but may skip or double count objects</li> <li>- Misalignment between pointing and counting</li> <li>- May lose track easily</li> <li>- Accurately counts simple, structured sets</li> <li>- Uses pointing or moving to track</li> <li>- May need support with unorganised sets</li> <li>- Accurately counts in scattered or larger sets</li> <li>- Self-corrects if errors occur</li> <li>- Uses counting to solve problems (e.g. sharing)</li> </ul>                                          | <ul style="list-style-type: none"> <li>- Counts accurately but doesn't state how many in total</li> <li>- May recount or guess when asked "how many?"</li> <li>- May continue counting after last object</li> <li>- Growing awareness of counting as a means to find quantity</li> <li>- Says total without recounting</li> <li>- Uses the total to compare sets or solve problems</li> <li>- Justifies answers based on final count</li> </ul>                                                                                                                                                |
| Prompts             | <ul style="list-style-type: none"> <li>- What do you notice about the order of number words?</li> <li>- Why do you think the symbols or numerals are the same order every time?</li> <li>- I wonder how you know what comes next?</li> <li>- How do you remember the order of the number words?</li> <li>- Can you teach me the order of the numbers? Why does it stay the same?</li> <li>- What do you think comes next...?</li> <li>- Would you like to write/say/create some numbers?</li> </ul> | <ul style="list-style-type: none"> <li>- How do you know which object to count next?</li> <li>- What happens if you point to two objects but say only one number?</li> <li>- Can you show me how you match each number word to each object?</li> <li>- What might happen if you count the same object twice or skip one?</li> <li>- How do you keep track of which objects you've already counted?</li> <li>- How would you explain to a friend how to count objects so none are counted twice?</li> <li>- How can you check how many altogether?</li> </ul> | <ul style="list-style-type: none"> <li>- How do you know when you have counted all the objects?</li> <li>- What does the last number you say tell you about the group of things?</li> <li>- Can you show me how many objects there are without counting again?</li> <li>- What happens if we add or take away an object</li> <li>- How can we find out how many there are now?</li> <li>- How would you explain to a friend what the last number in counting means?</li> <li>- Can you think of other ways to find out how many objects there are without counting them one by one?</li> </ul> |
| Notes               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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Counting Principles  
template





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### Observations in Practice

#### Student J: Stable Order and Conservation

Student J demonstrated strong confidence in counting. With ease, he touched each block in turn, counting steadily all the way to seventeen. His competence was clear. However, when the educator rearranged the blocks and asked how many there were, J paused and was unable to answer. It appeared as though the shifting of the blocks disrupted his certainty.

This hesitation raised questions about whether J had encountered this type of task before or whether it revealed a gap in his understanding of conservation—the idea that the number remains the same even when objects are rearranged. This moment served as a reminder of how subtle, yet critical, this step is in developing number sense.



#### Student K: One-to-One Correspondence & Cardinality

Student K's engagement provided a different but equally valuable insight. She carefully touched each block as she counted, showing that one-to-one correspondence was a developing strength. Yet when prompted to add one more block to her set of four, she placed the block correctly but then restarted her count from the beginning.

Rather than trusting the existing count and building on it, she relied on recounting. This highlighted that her understanding of cardinality—the concept that the final number in a count represents the total quantity—was still emerging.





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## Reflections & Next Steps

These observations highlighted both the progress and the challenges involved in embedding counting principles into practice. They also reinforced how much insight can be gained from children's behaviours when educators observe their actions with intentional focus.

To support educators in capturing and extending these moments of mathematical thinking, the idea emerged to develop a prompt sheet resource. Such a tool would outline key observable behaviours and pair them with suggested questions, enabling educators to notice, interpret, and respond more intentionally.

By offering structured yet practical guidance, this resource could help build educators' confidence in recognising mathematical concepts as they arise in play and in using these opportunities to deepen children's understanding.

Stay tuned for the next edition, where this idea will be showcased in action.

