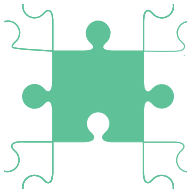
NCCA

Primary Mathematics Toolkit – Support material

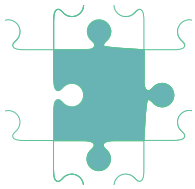
Number: Numeration and counting – Suggestions for teaching



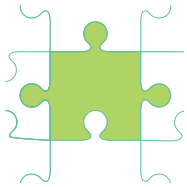
FOSTERING PRODUCTIVE DISPOSITION

- Provide a range of manipulatives such as counters, ten frames, dienes, abacus, and digital tools, and allow children to choose resources that best support their understanding.
- Integrate reflection exercises into math lessons where children are prompted to evaluate their counting skills and approaches.
- Draw children's awareness to real-life situations where their knowledge of counting and strategies for counting can help them in their everyday life, e.g., *using skip-counting by fives to support time-telling on an analogue clock, subitising the number of dots on a dice when playing games.*

ENCOURAGING PLAYFULNESS WITH MATHEMATICS



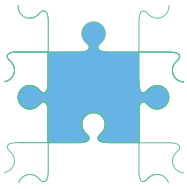
- Engage children in activities and games, e.g., *number bingo, counting scavenger hunts.*
- Use storytelling as a playful way to introduce numeration concepts and problems to provide interest and context (see *Suggestions for learning at home* support for book suggestions).
- Provide materials and prompts that invite children to create their own mathematical games, puzzles, or scenarios, e.g., *design a matching game with sets and numbers up to 20, create a new version of hopscotch/follow the leader/ leapfrog that includes counting forward/ backwards in halves/tens/hundreds, etc.*
- Provide free play experiences such as a 'Counting Corner' with various objects for children to count, sort, and arrange according to their preferences, and provide prompt counting questions to support engagement.



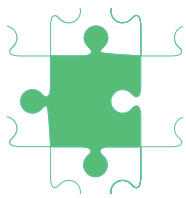
USING COGNITIVELY CHALLENGING TASKS

- Provide opportunities for children to apply counting in fives, tens, fifties, halves, etc. to increasingly challenging tasks, e.g., *how many people will attend the party if they travel in five full cars/two 10-seater mini-buses/four 25-seater buses?*
- Encourage exploration of multiple solution pathways to support children's experimentation with various methods for counting, e.g., *count a set of items by counting on, skip counting, creating arrays, etc.*
- Support children to use their knowledge of counting to develop efficient strategies for solving more complex problems, e.g., *using existing subitising skills to calculate the sum of numbers on multiple dice, using knowledge of doubles to add 49 and 50, 120 and 121, etc.*

EMPHASISING MATHEMATICAL MODELING



- Provide opportunities for children to express numeration concepts through drawings, manipulatives, and written representations, allowing them to explore different methods of recording numbers.
- Encourage collaboration among children to refine their models, share ideas, and provide feedback to one another, e.g., *demonstrate and discuss various models for counting in halves such as using a number line, using concrete materials, drawing diagrams.*
- Guide children in applying their counting models to new contexts and problems.



PROMOTING MATHS TALK

- Encourage children to share and refine their counting strategies with their peers and provide prompts to support this, e.g., *how many ____ did you count? How did you count them? Did you group them in twos/fives/tens? Would you do anything differently next time?*
- Incorporate the language of numeration and counting across other areas of the curriculum and through play, e.g., *choral counting when stretching before/after P.E., tallying and counting types of trees/flowers/minibeasts in nature walks, jumping in twos when playing board games.*
- Facilitate discussions around approaches and strategies, e.g., *can you estimate the number of blocks in the tower? How can you check your estimate? Can you think of another way to do this? Which is the most efficient?*
- Arrange circle time where children can gather for Maths discussions, encouraging them to share and practice their counting approaches, ask questions, and explore numeracy concepts collaboratively.

Developed in collaboration with **Rachel Brennan, Primary School Teacher, Co. Dublin**