

Using M⁵ to Support Learning About Number and Counting

This handout provides specific examples of ways to use the M⁵ Early Math Approach to help infants and toddlers develop an understanding of number and counting.

Mutual Learning

Observe and learn about children's languages, cultures, strengths, and needs related to number and counting.

- **Notice ways that children show knowledge and express interest in number.**
 - ◇ Children may enjoy collecting sets of objects, such as rocks. They may also point to objects while reading a counting book with an adult.
- **Notice the languages and vocabulary children use and respond to when exploring number. Multilingual learners may understand or use some number words in their home languages, English, or both.**
- **Introduce number and counting songs, chants, rhymes, fingerplays, and stories that build on children's family, community, and cultural experiences.**
- **Provide children with varying ways to learn about and express their knowledge of number and counting, based on their needs and abilities.**
 - ◇ Encourage toddlers to use gestures, such as showing a certain number of fingers to represent the number of objects.
 - ◇ Offer sets of lightweight, easy-to-grasp objects for children to gather into groups.

Meaningful Investigations

Provide opportunities for children to explore number using sets of objects.

- **Use daily routines and play to explore number, model counting, and group objects into sets.**
 - ◇ "Let's put three strawberries in this bowl. One, two, three. Now we have three strawberries in this bowl."
 - ◇ "Are you putting the speckled frogs on the log? I notice that you have five frogs on the log. One, two, three, four, five."

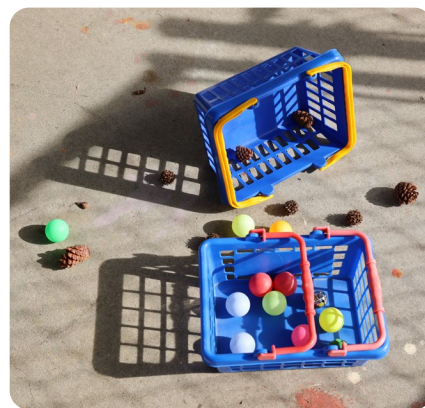


- **Encourage children to think about number when building or creating and make that connection to children's families, communities, cultural experiences, and interests.**
 - ◇ After noticing a toddler playing with jewelry in the dramatic play area, you might offer large beads and strings for the children to make jewelry. Count the beads with the children and ask questions. "I notice that you have three beads on your necklace. Do you want to add more?"
 - ◇ "You are stacking blocks—one, two, three (counting while pointing). You have three blocks in your tower. It reminds me of the tall buildings we noticed on our walk yesterday."
- **Provide opportunities for children to count and compare quantities to solve problems. Model how children can solve these problems.**
 - ◇ "How many dinosaurs can you fit in the cave? I notice one, two, three (pointing to each dinosaur). Three dinosaurs are in the cave. Do you think you can fit more inside?"
 - ◇ "Who has more tostones (fried plantain snack from Latin America) on their plate, you or me? Let's count to see." After counting the tostones, "You have two tostones, and I have three tostones. That means I have more tostones."

Materials and Learning Environment

Provide sets of open-ended materials that children can use to group, stack, fill, and empty.

- **Offer materials that are responsive to children's cultures, languages, and interests. Some appropriate materials for this age group may include:**
 - ◇ recycled materials, natural materials, or objects found at home, such as plastic cups, spoons, leaves, sticks, or socks
 - ◇ number books or stories in children's home languages
 - ◇ materials brought from home that are important to the child, such as their favorite stacking cups
- **Offer materials that respond to children's strengths and areas of growth. Some appropriate materials for this age group may include:**
 - ◇ objects that come in multiples, such as blocks, balls, cars, counting bears, or stacking rings
 - ◇ containers, such as baskets, boxes, or plastic jars, for children to put collections of objects into
 - ◇ materials with numerals, including number puzzles, number blocks, or number stacking toys



- **Read counting books in children’s home languages, English, or both. Some examples of books include:**

- ◊ [Doggies](#) ([Perros](#) in Spanish) by Sandra Boynton
- ◊ [Banana for Two](#) ([Plátano para dos](#) in Spanish) by Ellen Mayer
- ◊ [Anno’s Counting Book](#) ([Libro de conteo de Anno](#) in Spanish) by Mitsumasa Anno
- ◊ [Baby Goes to Market](#) ([El bebé va al mercado](#) in Spanish) by Atinuke

Math Vocabulary and Discourse

Use number and quantity words during daily interactions and model counting. Encourage children to use number and quantity words in their home languages, English, or both.

- **Draw children’s attention to number and quantity words during daily routines, interactions, and play by using number and quantity words.**
 - ◊ During diapering, identify the number of snaps on an infant’s clothes or count their legs, arms, fingers, or toes.
 - ◊ When cleaning up, count toys as you put them away.
 - ◊ “You are holding a rattle, just like me. Let’s shake our rattles. Shake. I am going to shake it some more. Shake, shake, shake.”
- **Encourage children to count small sets of objects and recite the count list with you.**
 - ◊ “Let’s count together to find out how many seats we have at the table. One, two, three, four.”
- **As children become better at counting small sets, model counting larger sets (for example, 6–10 objects). When modeling counting, point to each object as you count and repeat the total number of objects. Pointing to each object while counting and clearly identifying the total quantity helps infants and toddlers learn about the counting procedure.**
 - ◊ “How many friends are here today? Let’s count to find out. One, two, three, four, five, six, seven, eight (pointing to each child as they count). Eight friends are here today!”



- **Ask “how many?” questions or questions that encourage children to compare numbers. Model how children can answer these questions.**
 - ◇ “How many crackers are on your plate? One, two, three, four! Four crackers.”
 - ◇ “Which basket has more ducks? Let’s count the number of ducks in each basket to find out.”

Multiple Representations

Offer multiple ways for children to explore numbers and learn about counting.

- **Invite toddlers to create sets using different materials. This will help children understand that objects can be counted and used to represent different quantities.**
 - ◇ Offer a variety of materials like rocks, balls, or foam blocks. Invite children to count them as they put them into baskets.
- **Show toddlers different ways to represent numbers. For example, use number words, hold up a certain number of fingers, show numerals, or count objects. This helps children begin to understand that these different representations all express the same idea.**
 - ◇ While children play with four dolls, hold up four fingers, say “four,” and show the numeral “four.”
- **To encourage children who are multilingual learners to learn to count in their home languages and in English, provide opportunities for them to practice counting in their home language.**
 - ◇ While reading a counting book, encourage children to count the number of ducks swimming in a pond, “Contemos el número de patos. Uno, dos, três [pointing while counting].”