

Preschool/TK/K

# Answer Key for Observing M<sup>5</sup> in Action: Number and Counting

This handout provides sample responses that help facilitators discuss each of the M<sup>5</sup> teaching practices observed in the video clip. It includes questions that apply across ages. Use the questions that work best for the video you have chosen. The video clip may or may not include examples related to each question.



#### Video:

Counting Family Members (3-5 years)

<u>Counting Family Members (3–5 years) – Audio Descriptive</u> <u>Version</u>

In this video an educator and two preschoolers count the number of people in their family.

### **Mutual Learning**

- What did (or might) the educator learn about each child during this experience?
- In what ways was the educator responsive to individual children? Consider the children's interests, languages, cultures and lived experiences, abilities, and emerging skills and knowledge.

### Some Possible Responses

- The educator used breakfast time to have a conversation with two children about their families. Through this conversation the educator learned about the children's families and how many family members are in each child's family.
- The educator learned that the children were able to count to five and engage in one-to-one correspondence by pointing to and counting each finger on the educator's hand.
- The educator learned that the two children have different levels of understanding of number and counting. The first child was able to answer the question, "How many are in the family?" by looking at the hand with five fingers and responding "five" without counting. It is possible that this child subitized and knew that a hand has five fingers. The second child answered the question "How many are in the family?" by counting the fingers on the hand to get to five.





# **Meaningful Investigations**

- In what ways was the experience based on children's questions, interests, or real-world situation?
- In what ways was the experience open-ended? How did this support children to experiment with different approaches to solving a problem or answering a question?
- In what ways did the educator support children's thinking and problem-solving related to number and counting?

### **Some Possible Responses**

- The educator asked questions like "How many are in the family?" to encourage children to name and count the different family members.
- Although the adult scaffolded the conversation, the children counted and listed the people in their family. For example, the educator thought there were only three children in the first child's family. When the child answered "four" to the question "How many children are in your family?" the educator asked the child to explain and name the children in her family. This interaction allowed the child to lead the discussion and demonstrate her understanding of number.
- The educator encouraged the first child to keep engaging in number and counting by asking the follow-up question, "And if you count yourself, how many are in the family?" The child answered five.
- The educator might extend this activity by asking children to count the number of adults, children, and pets in the family. Then, the educator might ask the children to count the total number of family members. This extended activity would allow children to begin understanding that numbers can be decomposed into smaller parts, which builds the foundation for addition and subtraction in the early elementary years.





### Materials and Learning Environment

- What did you notice about the materials and learning environment?
- In what ways did the materials and learning environment promote understanding of number and developing counting skills?

#### **Some Possible Responses**

• Since this conversation during breakfast time was spontaneous, no specific materials were set up in the environment. However, to allow children to keep track of the family members they were listing, the educator held up a finger for each family member named. Then, when the educator asked, "How many are in the family?" she encouraged the child to count the number of fingers on her hand.

### Math Vocabulary and Discourse

- What number words or quantity vocabulary (for example, more, less) did the children and educator use?
- In what ways did the educator encourage children to notice and communicate about number and counting (for example, by asking open-ended questions)?
- In what ways did the educator encourage children to participate in math discussions related to number and counting? Some ways children might participate in math discussions include questioning, describing, comparing, or explaining.
- In what ways did the educator support multilingual learners to communicate about number and counting in their home language, English, or both?

#### **Some Possible Responses**

- The children and educator used the number words one through five.
- The educator used "how many" questions to encourage children to count and talk about number.
- The educator might encourage children to count in their home languages in future number and counting activities.





## **Multiple Representations**

- What opportunities did the educator offer children to count or represent numbers in different ways?
- What other learning experiences or materials might the educator provide to continue building on children's understanding of number and developing counting skills?

### **Some Possible Responses**

 The educator might offer other activities that allow children to visualize and count the number of people in their families. For example, the children might draw their family or bring in pictures from home of their family and use these to count. Children might practice writing the correct numerals on the drawing or photo.

