

Infant/Toddler

Answer Key for Observing M⁵ in Action: Number and Counting

This handout provides sample responses that help facilitators discuss each of the M⁵ 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:

<u>Counting with Balls and Tunnels (18–36 months)</u> <u>Counting with Balls and Tunnels (18–36 months) – Audio</u> <u>Descriptive Version</u>

In this video, toddlers explore putting balls into tunnels and counting how many fit.

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 learned about children's emerging counting skills through this experience. The educator learned that the child wearing the gray sweater was able to recite the count list up to nine.
- The educator also learned that the child had not yet developed an understanding of one-to-one correspondence—the child did not add a ball with each number word counted. Instead, the child recited several number words between adding each ball to the tube. However, at the end when the educator modeled counting the balls in the tunnel, the child imitated the educator and pointed to each of the balls in the tunnel as the educator counted, an important step in developing an understanding of one-to-one correspondence.





 Additionally, when the educator asked, "How many are you going to get?" the child with the gray sweater answered "two," while holding two balls. The child had not yet developed an understanding of cardinality but demonstrated an understanding of the quantity two.

Meaningful Investigations

- In what ways was the experience based on children's questions, interests, or real-world situations?
- 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 followed the children's interests and allowed them to decide how to engage and experiment with the materials. The child was interested in putting the balls in the tunnel. When the child then started reciting the count list while adding balls to the tubes, the child demonstrated an interest in exploring quantity and ideas of fitting in more.
- The educator asked questions like "How many are you going to get?" These questions encouraged children to solve the problem of how many balls they needed to fill the tunnel. These questions also encouraged children to try to keep track of the balls they had already added to the tunnel by counting.





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

- The materials were very open-ended. Children were provided with many differently colored balls and a few bells, the tunnels, and some baskets to collect the balls in.
- The materials allowed children to collect items in the basket and find out how many balls or bells fit in the tubes.
- Beyond number and counting, children could create patterns with the differently colored balls. They could also explore spatial relationships when fitting the balls inside the tubes.

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 child with the gray sweater recited the numbers one through nine while putting the balls in the tunnel.
- 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 child in the gray sweater was able to recite parts of the count list and was beginning to explore ideas of one-to-one correspondence. Therefore, the educator might offer other activities that allow children to match one object to one number word. For example, children might hop from one space to another while reciting the count list.

