Infant/Toddler

Answer Key for Observing M^5 in Action: Measurement

This handout provides sample responses that help facilitators discuss each of the M^5 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:
Exploring Size and Fit with Ramps and Balls (18–36 months)
Exploring Size and Fit with Ramps and Balls (18–36 months) – Audio Descriptive Version

In this video an educator and a child experiment with ramps and balls, exploring size and 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 observed that the child showed interest in playing with the ramps and balls. The educator responded to the child's interest and followed his lead when he wanted to make the ramp higher, using two blocks instead of one.
- During this interaction, the educator observed the child's emerging skills and concepts related to size. For example, the child said, "It can't go in cause, cause look it." Then he rolled the ball down the ramp to demonstrate that it could not go through the ring. The educator then used language to describe what the child noticed, "Because it's too big."

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 measurement?

Some Possible Responses

- By providing open-ended materials and following the child's lead, the educator allowed the child to ask questions that were of interest to him.
- The educator supported the child's exploration and thinking by asking open-ended questions. For example, at the beginning of the video, the educator put one block under the ramps and asked, "What happens if we just use one?" When the child responded, "Nothing, make it higher," the educator elaborated on what he said by asking, "What happens when we make it higher?"
- The educator also supported the child's problem-solving skills by asking questions like, "Do you think the big ball will work?" "What happened?" and "Why can't it fit?" These questions scaffolded the child's problem-solving skills by asking him to think about the elements of the problem (the big ball does not fit into the smaller ring).

Materials and Learning Environment

- What did you notice about the materials and learning environment?
- In what ways did the materials and learning environment offer varied opportunities for children to engage in measurement?

Some Possible Responses

- The environment included a variety of open-ended materials such as ramps, blocks, rings, tubes, and balls of different sizes. This supported the child's exploration of a variety of representations of big and small.
- These materials offered the child opportunities to experiment with how different-sized balls move down a ramp and fit through other objects.

Math Vocabulary and Discourse

- What measurement or comparison vocabulary did the children or educator use?
- In what ways did the educator encourage children to notice and communicate about measurement (for example, by asking questions)?
- In what ways did the educator encourage children to participate in math discussions related to measurement? 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 measurement?

Some Possible Responses

- The educator supported the child's language development by asking open-ended questions, responding to the child's communication (verbal and nonverbal), and extending back-and-forth exchanges.
- As the child explored the ramps and balls, the educator modeled a variety of vocabulary describing size such as small, big, and bigger.
- The educator helped build the child's vocabulary and understanding of relative size by repeatedly using the words big and bigger throughout their interaction. For example, when the educator asked the child why the white ball couldn't fit into the hole, the child started his answer, "It's too … " but he did not complete the sentence. The educator extended the child's communication and said, "Because it's too big!"

Multiple Representations

- What opportunities did the educator offer children to compare, order, or measure in different ways?
- What other learning experiences or materials might the educator offer to continue to build children's understanding of measurement?

Some Possible Responses

- The open-ended materials provided by the educator gave the child a variety of opportunities to explore size and fit. To further the child's exploration of concepts of size, the educator might offer other materials, such as containers and objects of varying sizes, for the child to fit together.
- The educator might encourage children to use size vocabulary while exploring their community. For example, while in the yard, the educator might ask which tree is bigger, or which slide is longer.