Toddler

Answer Key for Observing M5 in Action

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:
Exploring Size and Fit with Ramps and Balls (2–3 years)

In this video, an educator and child experiment with ramps and balls. Through meaningful investigations, the educator supports the child's early math learning in the areas of spatial thinking and measurement.

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 the child closely and supported his learning based on the child's interests and emerging knowledge and skills. For example, the educator noticed the child's interest in ramps and joined him in exploring how different-sized balls roll down the ramp. The educator observed that the child needed support to explain why the ball wouldn't go into the tube. The child said, "It can't go in cause, cause look …" Then, he rolled the ball down the ramp to show that it could not go through the tube. The educator responded by adding language to the child's actions. The educator said, "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 the open-ended nature 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?

Some Possible Responses

The experience was playful and inspired by the child's curiosity about balls and ramps. The experience was open-ended; the child could experiment with the ramps and balls in different ways. The child explored spatial thinking through his exploration of differently sized tubes and balls. The educator supported the child's thinking and problem-solving by asking various open-ended questions. For example, she asked:

- "What happens if we just use one?"
- "What happens when we make it higher?"
- "Why can't it fit?"

Materials and Learning Environment

- What did you notice about the materials and learning environment?
- In what ways did the materials and learning environment promote children's understanding of relevant math concepts?

Some Possible Responses

The educator provided a variety of materials such as ramps, blocks, rings, tubes, and differently sized balls. These materials offered children opportunities to experiment with geometry concepts related to size and spatial thinking. The materials were open-ended. Children could use them in different ways.

Math Vocabulary and Discourse

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

Some Possible Responses

The educator used a variety of math vocabulary to describe size ("small," "big," "bigger") and location in space ("in" and "higher"). The educator also modeled math vocabulary when reasoning about the problem. When the ball did not go through the tube, the educator referred to the size of the ball and said, "because it's too big."

Multiple Representations

- What opportunities did the educator offer children to explore and learn about math concepts in different ways?
- What other learning experiences or materials might the educator offer to continue building children's understanding of relevant math concepts?

Some Possible Responses

The child explored concepts related to size. For example, the child noticed that the large ball would not fit into the tube. The educator might provide other ways for children to explore and express their understanding of size. For example, the educator might encourage children to build a balanced tower using different-sized blocks or to find out which toy dinosaurs can fit under the bridge and which are too tall.