Toddler

Answer Key for Observing M^5 in Action: Spatial Thinking

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 Spatial Thinking with Blocks

In this video, an educator and child work together to build a garage for toy cars using wooden blocks.

- Exploring Spatial Thinking with Blocks (18–36 months)
- Exploring Spatial Thinking with Blocks (18–36 months) – Audio Descriptive Version

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 children's interests, languages, cultures and lived experiences, abilities, and emerging skills and knowledge.

Some Possible Responses

- The educator carefully observed the child. She learned about the child's interest in building the garage. The child wanted to fix the structure, and the educator supported him to do so. In addition, the educator responded to the child's request to build a "smaller garage."

- The educator learned about the child's understanding of spatial concepts by observing how he positioned the blocks as he built the structure. She also observed him experimenting with how the car might fit inside the blocks.
- The educator was responsive to the child's emerging language abilities by repeating and extending words the child said. For example, the child said, "Help," and the educator asked, "You need help?

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 of the experience 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 spatial thinking?

Some Possible Responses

- The experience was based on the child's interest in cars. It also included a reference to a real-world place—a garage.
- The educator and child explored ways to build a structure (a garage). They also observed how different cars fit inside the garage.
- The educator asked, "Can it fit?" This question encouraged the child to experiment with fitting cars into the garage.
- The educator also encouraged the child to rebuild the garage and use spatial thinking to problem-solve.
- The educator might provide the child with different-sized cars or objects to fit inside the garage. The child might redesign the garage to fit the different-sized objects.

Materials and Learning Environment

- What did you notice about the materials and learning environment?
- In what ways did the materials and learning environment offer opportunities for children to use spatial thinking?

Some Possible Responses

- The materials were open-ended. Children could use them in many ways.
- The materials promoted spatial thinking because the child was able to observe how objects relate to other objects. The materials also promoted the use of spatial vocabulary when the educator and child explored moving the materials "inside" the structure.

Math Vocabulary and Discourse

- What spatial vocabulary did the children or educator use?
- In what ways did the educator encourage children to notice and communicate about spatial concepts (for example, by asking open ended questions)?
- In what ways did the educator encourage children to participate in math discussions related to spatial thinking? Some ways children might participate in math discussion include questioning, describing, comparing, or explaining.
- In what ways did the educator support multilingual learners to use spatial vocabulary and engage in math discourse?

Some Possible Responses

- The educator modeled spatial vocabulary such as "in" and "down."
- The educator might use gestures to communicate the meaning of spatial vocabulary.
- The educator might use children's home languages when describing spatial concepts.

Multiple Representations

- What opportunities did the educator offer children to use spatial thinking in different ways?
- What other learning experiences or materials might the educator offer to continue to build children's spatial thinking?

Some Possible Responses

- The educator might invite the child to build other structures of interest (for example, their house or a road with cars on it).
- The educator might offer different building materials for the child to explore spatial concepts (for example, smaller blocks or play dough).