Infant/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 Space with Their Bodies

In this video, infants explore various containers. They experiment with putting their bodies and other objects inside the containers.

- Exploring Space with Their Bodies (8–18 months)
- Exploring Space with Their Bodies (8–18 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 responded to the children's interests. She provided materials that children were interested in—balls and containers. She also responded to how children chose to interact with the materials, using language to label what the children were doing. For example, when a child was sitting inside a tub, the educator said, "Look at Yolo sitting in that little tub!"

- The educator responded to the children's needs. She provided support for children moving in and out of the tubs.
- The educator noticed a child's understanding of where a lid should be positioned on an object. She encouraged the child to investigate further by asking, "How does that fit?"
- The educator might have responded to children's languages by using spatial vocabulary in the language that is used in children's homes.
- The educator might notice children's understanding of spatial concepts by observing how they respond to her prompts and questions.

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 learning experience offered opportunities for children to experiment freely with the materials. Children investigated what happens when they dump balls, how their bodies might fit in containers, and which containers a lid might fit on.
- The educator encourages the child to investigate the position of the lid by asking, "How does that fit?"

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

- A variety of materials were offered to children (for example, different-sized containers and tubs, baskets, collections of objects, balls, and tubes).
- The environment was set up in a way that provided children space to explore the materials. Children were also able to access materials independently.
- The materials were open-ended. Children could use them in many ways to explore spatial concepts (for example, filling containers, getting inside containers, taking things out of containers).

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

- Educators modeled spatial vocabulary such as “inside,” “out,” and “on.”
- 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 offer different learning experiences and materials to continue building children's spatial thinking. For example, the educator might use music and movement to encourage children to use their bodies to move in and out of spaces or follow directions on how to move their body.
- Educators might model spatial vocabulary in other settings. For example, children might explore "inside" and "outside" by using containers at the water table.
- Educators might help children think about spatial concepts during daily routines. For example:
  - During mealtime, educators might put water **inside** a cup.
  - In dramatic play spaces, children might place a baby doll **inside** a crib.
  - During cleanup, educators and children might put toys **inside** a basket.