



Answer Key for Observing M⁵ in Action: Shapes



Video:

[Composing and Decomposing Shapes \(3–5 years\)](#)

[Composing and Decomposing Shapes \(3–5 years\) – Audio Descriptive Version](#)

Mutual Learning

- In what ways was the educator responsive to children’s interests, languages, cultures and lived experiences, abilities, and emerging knowledge and skills?
- What did the educator learn about each child during this learning experience?
- In what ways did the educator respond to each child’s individual needs?

Some Possible Responses

- The educator explained that she noticed that the children were able to identify and name shapes. This shape composition activity provided children with opportunities to build on their shape knowledge and explore how they might combine multiple shapes to make a new shape.
- The educator observed individual children’s understanding of shape vocabulary. Then, she offered new vocabulary to help them communicate about shapes. For example, when one child said they needed “a blue” when looking for a specific shape that was blue colored, the educator responded, “That is called a rhombus.”





Meaningful Investigations

- In what ways did this learning experience allow children to question, experiment, and use math to solve problems that they are interested in?
- What open-ended questions and prompts did the educator use to encourage children's thinking and problem-solving?
- In what ways did the educator encourage children to continue exploring and reasoning about shapes?

Some Possible Responses

- The children explored creating pictures from shapes using a template. To find shape pieces that matched the shapes on their template, children observed and compared shapes.
- Children engaged in problem-solving when they could not find the shape pieces needed to complete their picture. For example, one child said, "I need a lot of squares." The educator responded by asking, "Can you fill it with a different shape?" Then, she showed how the child might use two triangles to make a square. By showing how the child might solve this problem, she encouraged the child to keep exploring and thinking about how shapes can be composed of other shapes.
- The educator might use additional open-ended questions to extend children's thinking and problem-solving. For example, she might ask:
 - ◇ "What shapes can you put together to make a square?"
 - ◇ "How is a hexagon different from a square?"





Materials and Learning Environment

- What did you notice about the materials and learning environment?
- In what ways did the materials and learning environment promote learning about shapes?
- In what ways did the materials and learning environment represent the cultural background and everyday experiences of the children?

Some Possible Responses

- The materials allowed children to compose pictures using a variety of shapes. Although children used templates, the activity was open-ended. Children could choose to combine shapes in different ways to make new shapes.
- The materials promoted the use of shape vocabulary. As children searched for shapes, they used shape names.

Math Vocabulary and Discourse

- What shape vocabulary did the children and educator use?
- How does the educator use what they know about the children's home languages and cultural backgrounds to support children's participation in math discussion?

Some Possible Responses

- The educator modeled shape vocabulary when she labeled shapes like "hexagon" and "rhombus."
- In addition to shape vocabulary, children used number words to describe how many of each shape they needed. For example, one child said, "I need three orange squares" and held up three fingers.
- The educator might use shape vocabulary in children's home languages.





Multiple Representations

- What other learning experiences or materials might the educator provide to continue building on children's learning of shapes?

Some Possible Responses

- The educator might offer other open-ended opportunities for children to compose their own pictures or designs using shapes, without using a template. This type of activity would allow children to make pictures that are meaningful to them. For example, the teacher might prompt children to make a picture of their family pet, or favorite food, using shapes.
- The educator might offer learning experiences that encourage children to explore the similarities and differences of two- and three-dimensional shapes. For example, children might explore how they can make three-dimensional shapes from two-dimensional shapes like magnet tiles.
- The educator might encourage children to use shape vocabulary while exploring their community. For example, as children move through their community, the educator might ask children to notice different shapes that they observe.

