



Mutual Learning

The purpose of this activity is for educators to think more deeply how to use mutual learning to support children's math knowledge and skills. Educators will read vignettes that describe different ways educators use mutual learning to support children's math knowledge and skills. After reading, participants will discuss the different ways educators used mutual learning.

Key Concept

Discuss ways educators in the vignettes used mutual learning to support children's math knowledge and skills.

Materials and Setup

- Mutual Learning chart (see page 2)
 - copies of Mutual Learning Vignettes (see pages 3–5)
 - sample answers (optional, see pages 6–8)
-  15–30 minutes
 -  small groups
 -  in-person or virtual professional learning

Activity Instructions

This activity works best when a facilitator supports the discussions of the vignettes.

- If you are a facilitator, consider using these instructions as talking points.
- If you are doing the activity on your own, discussing with a partner might be helpful.

Review the vignette and discuss

- Select a vignette or multiple vignettes. The Mutual Learning Vignettes include three child-centered vignettes for each of the three age groups: infants and toddlers; children in preschool, TK, and K; and early elementary grades. Each vignette features one of three ways educators might learn about children: partnering with families, offering choice, or observing children. Choose a vignettes that is meaningful to you (for example, a vignette that features children in the age-range that you work with).



- Review the vignettes. Consider and record the following information on the chart provided:
 - ◇ what the educator learned
 - ◇ how they learned the information
 - ◇ ways they used what they learned to support early math development and learning
- Discuss the vignette with a partner and share the notes you made on the three-column chart.
- After you discuss, you might review the Sample Answers to further consider what the educator learned, how they learned the information, and ways they used what they learned to support math learning.

What the educator learned	How they learned	Ways they used what they learned



Mutual Learning Vignettes

Infant and Toddler—Vignette #1

The educator noticed that children enjoyed filling and emptying containers in their learning settings. The educator invited families to share containers from home that children can use to fill and empty (for example, an empty yogurt container, a bamboo steamer, and an empty tissue box). They also asked families to share ways their children fill and empty containers at home or in community spaces (for example, one child enjoyed filling a bucket with sand and dumping it out while at the neighborhood playground).

The educator invited children to use the containers shared from home to continue their explorations of filling and emptying. Educators also used different ways to talk about filling and emptying based on what they learned from families (for example, they included spatial language such as “inside” and “outside,” and words unique to children’s home languages).

Infant and Toddler—Vignette #2

An educator offered children different-shaped blocks to explore. They noticed that Jin, a child with a visual impairment, collected all the triangle-shaped blocks—feeling each one as he made his collection.

Later that day, the educator told a story about triangles and talked with Jin about the triangle-shaped crackers at snack time—encouraging him to feel the three sides of the crackers. They also extended Jin’s understanding of other shapes by comparing the feel of other shapes to the feel of triangles.

Infant and Toddler—Vignette #3

While outside, an educator noticed Elia collecting sticks. They also noticed that Elia sorted them into two groups—long sticks and short sticks. The educator joined Elia and used words like shorter and longer to describe Elia’s collections.

Preschool, TK, K—Vignette #1

An educator talked with Jabari's aunt during pick-up. They learned that Jabari enjoys helping make cornbread for Sunday dinners.

The next week, while exploring measurement, the educator communicated with Jabari about his cooking experiences and how his family uses measuring tools.

Preschool, TK, K—Vignette #2

An educator invited children to choose items to explore. They noticed that Maria selected toy cars, just like she did the previous week.

Based on what they observed, the educator planned an experience for children to make cars using loose parts. During the learning experience, the educator encouraged children to describe shapes and their attributes.

Preschool, TK, K—Vignette #3

During outdoor time, an educator observed Julian, a preschool child, collecting and counting balls. They noticed that he skipped the number seven when counting the balls in his home language, Spanish. They also noticed that he skipped the number seven while counting in Spanish during routines such as snack.

The educator planned to model counting to ten in English and Spanish throughout the day, emphasizing seven in the count sequence. Their plan included ideas for actively involving Julian and encouraging him to count objects that are particularly interesting to him—the dinosaurs, cookies in the storybook, and the yarn dolls his grandmother shared from her home country.

Early Elementary—Vignette #1

An educator was planning to introduce children to standard units for measuring length. She invited families to share tools they use to measure length at home.

Families shared a variety of tools:

- tape measures
- rulers
- yard sticks
- sewing tape

The educator also invited Malcom's uncle, a carpenter, to visit the classroom and show children how he uses a tape measure during the building process.

Early Elementary—Vignette #2

An educator let the children choose manipulatives for adding two two-digit numbers.

Most children chose base 10 blocks. Louisa used a number line and skip counted.

The educator noticed Louisa's preference and offered number lines for other math learning experiences.

Early Elementary—Vignette #3

Micah is a child with a learning disability. He has difficulty maintaining focus and attention. While observing children line up, an educator noticed that Micah enjoys clapping rhythms as he waits for his peers. The educator remembered that Micah taps his feet and hums tunes throughout the day.

They realized that Micah seems interested in music and rhythm. The educator decided to use a song with movement to support children's understanding of three-dimensional shapes.

Sample Answers

Infant and Toddler—Vignette #1—Sample answers

- In the first vignette, the educator learned about children's interest in filling and emptying containers. They also learned about different ways children might experience filling and emptying in their homes.
- The educator learned this information by partnering with families. They invited families to share materials from home and had conversations with families about ways children experienced filling and emptying at home.
- The educator supported children's math development and learning by offering opportunities for children to explore spatial thinking using these materials. The educator also used language familiar to children related to the concepts of fill and empty.

Infant and Toddler—Vignette #2—Sample answers

- In the second vignette, the educator learned about Jin's interest in triangles.
- They learned about Jin's interests by offering choice and open-ended materials and observing Jin's choices.
- Finally, the educator used what they learned about Jin's interests in triangles and ways of exploring objects (for example, by feeling the shapes) to promote learning about triangles throughout the day. They also extended Jin's understanding of other shapes by comparing other shapes to triangles.

Infant and Toddler—Vignette #3—Sample answers

- In the third vignette, the educator learned about a child's understanding of sorting and emerging understanding of length.
- They learned this by observing Elia during outdoor play.
- Then, the educator used what they learned about Elia's knowledge and skills to build on Elia's understanding of length. For example, the educator used math language such as "shorter" and "longer" to describe the sticks in Elia's collection.

Preschool, TK, K—Vignette #1—Sample answers

- In the first vignette, the educator learned about Jabari's experience of cooking with family.
- They learned this information by partnering with families. The educator had a conversation with Jabari's aunt.
- The educators used this information to support Jabari's understanding of measurement. They communicated with Jabari about his cooking experiences and how his family uses measuring tools during play in the dramatic play area.

Preschool, TK, K—Vignette #2—Sample answers

- In the second vignette, the educator learned about Maria's interest in cars.
- They learned this information by offering choice and observing Maria's preferences.
- The educator used this information to create a meaningful experience for Maria to learn about shapes. The educator encouraged Maria to discuss the different shapes and shape attributes that Maria used to build a car.

Preschool, TK, K—Vignette #3—Sample answers

- In the third vignette, the educator learned about Julian's ability to count to ten.
- They learned this information by observing Julian throughout the day and noticing his counting abilities.
- The educators used this information, and information about Julian's culture and interests, to provide individualized support. They planned to model counting in English and Julian's home language and actively involve Julian in counting opportunities.

Early Elementary—Vignette #1—Sample answers

- In the first vignette, the educator learned about the different ways children measure length at home.
- They learned this information by partnering with families. The educator invited families to share materials they use for measurement at home.
- The educators used this information to support children's understanding of measurement. They invited a family member to show the children how to use a tape measure during the building process.

Early Elementary—Vignette #2—Sample answers

- In the second vignette, the educator learned about a child's preference for using number lines.
- They learned this information by allowing children to choose how they approach and solve a math problem.
- The educators used this information to provide individualized support during other math experiences. They decided to offer number lines for other math learning experiences.

Early Elementary—Vignette #3—Sample answers

- In the third vignette, the educator learned about a child's interest in music and rhythm.
- They learned this information by observing the child during daily routines such as lining up.
- The educator used this information to support the child's understanding of shapes—using a song and movement to support children's understanding of three-dimensional shapes.