

Vocabulary and Discourse

This handout offers ideas on how to build children's math vocabulary and provide opportunities for math discourse. Use these ideas in ways that are responsive to children's interests, cultures, abilities, and languages. You might support children to communicate in different ways including gestures, varieties of English, and other languages. It is important to support all of the ways children might communicate.

Math vocabulary refers to the words we use to describe math, in any language, to communicate about different math concepts. The following list presents a few examples of math vocabulary in each category:

- numbers (for example, one, two, three)
- number operations (for example, add, combine, take away, subtract, group, divide)
- quantities and comparisons (for example, more, less, same, full, empty)



- measurements such as size, weight, or volume (for example, big, bigger, small, smaller, greater, heavy, heavier, tall, tallest, same)
- positions, directions, and distances in space (for example, on, above, below, behind, far)
- two- and three-dimensional shapes and their characteristics (for example, square, rectangle, cube, sphere, pyramid, face, edge, vertex)

Math discourse is the back-and-forth exchange of ideas about math. Children use math discourse when they ask questions, describe, compare, explain, or share their math solutions or thinking with others.





Ways to Support Vocabulary and Discourse

Support a Sense of Safety and Belonging

Encourage children to use math vocabulary and engage in math discourse by creating a sense of safety and belonging. When children feel that they belong, they are more willing to express their ideas and ask questions.

- Integrate children's cultures, lived experiences, and languages into learning experiences.
- Acknowledge and affirm children's responses, including nonverbal responses and responses in the children's home languages.



- Discuss your own mistakes openly. This helps children understand that it is okay to make mistakes. You might say, "Oops! I counted wrong. Let me try again."
- For older children, use consistent routines (for example, "think-pair-share") that encourage children to discuss and explore strategies for solving math problems. Using these routines often makes math conversations part of the learning culture while creating low-risk and predictable opportunities for children to use math discourse.

Model the Use of Math Vocabulary Throughout the Day

Show children ways to use math vocabulary through your communication with children.

Incorporate math vocabulary into everyday conversations and opportunities for discussion

Outdoor play

- "They went through the tunnel!"
- "To play this game, let's divide the balls into groups of two."

Mealtime

- "There's a square on my plate. My cracker is a square!"
- "We are going to count how many pancakes we have all together."

Dramatic play

- "You are using the big pot to cook soup. What did you make in the small pot?"
- "Let's use the teaspoon to measure a small amount."

Transitions

- "It's time to clean up. Place all of the papers on top of the folder."
- "Let's practice skip counting by twos as we line up."





Repeat and extend children's math language. This shows children that their ideas are important and respected. Repeating and extending also models how to use more specific vocabulary to describe ideas.

- When a child communicates "here" by looking under the blanket, an educator might respond, "You think the ball went under the blanket."
- When a child says, "It's too big!" an educator might respond, "The ramp is too big. It's too long to fit inside the cubby."
- When a child says, "I can use minus to take away," an educator might respond, "You can subtract to find the difference between ..."

Use Gestures and Visuals

Pair math vocabulary with gestures, visuals, and concrete objects. This helps build children's math vocabulary and understanding.

- Provide opportunities for children to physically manipulate concrete objects and use visuals. For example, by showing concrete objects when discussing shapes.
- Make adaptations to the materials if you need to support different abilities.



- Pair gestures with language such as "long," "tall," and "wide" when measuring.
- Use a number line to model how to add numbers.

Offer Open-Ended Questions

Support the children to use math discourse by asking open-ended questions that encourage children to think critically and explain their ideas.

- "I wonder why the ball won't fit. Where can we put the ball so it fits inside?"
- "How can we figure out which one has more?"
- "How do you know it is a square?"
- "What are some ways we might group the numbers to help us add?"



