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How parents can support math learning at home and through everyday activities

By Deborah Stipek | July 2024

Caregivers can support early math learning as part of everyday family activities, no matter their own comfort or experience with math.

Child Development Research, Insights, and Science Briefs to Your Inbox

Key takeaways for caregivers

- [Math skills at kindergarten](#) entry predict children's academic success in school.
- Young children usually enjoy learning math and can develop understanding about math in all the content areas they will encounter in school: number, patterns, shapes, spatial relations, and data.
- Parents can grow their young children's math knowledge through playful activities embedded in daily routines.

Language and literacy learning in early childhood is important; so is math. Most parents and caregivers know that it is important to read to their young children as a way to promote language and literacy skills. But [recent research](#) has shown that opportunities to develop math skills at home are just as important.

[For example](#), studies have found that young children's math skills when they enter school significantly predict their future success in school.

What math should young children learn?

There are three areas of math that young children should learn:

1. The order of number words
2. Making comparisons
3. Identifying patterns

Preschool-aged children can learn math related to all the [math content standards](#) deemed important by the National Council of Teachers of Mathematics in the United States. These are areas children will likely encounter in elementary school and beyond.

1. The order of number words

In preschool and the early elementary grades, children need to learn the order of number words (rote counting), but just as important is an understanding of number (e.g., if you add one object to a set of six, there are seven objects all together).

2. Making comparisons

Understanding of number also involves making comparisons (more versus less), ordering (first, second ...), grouping to make a larger unit (adding two bears to three bears to make five), partitioning equally (e.g., “My brother and I have the same number of jellybeans”), composing and decomposing (e.g., five objects can be divided into groups of one and four or two and three), and doing operations (addition and subtraction).

Typically, preschool-aged children develop a sense of number by working with numbers 10 and under, which they will expand upon when they attend kindergarten.

3. Identifying patterns

Preschool-aged children are also ready to learn about patterns (two blue bears, one red bear, two blue bears, one red bear...) – which are a foundation of algebra, measurement (length, weight, volume), shapes (not just recognizing them but articulating their defining characteristics), spatial relations (e.g., the tree is *behind* the house, the ball is *under* the table), and even data (e.g., sorting objects by color, size, type, weight; making simple charts to show data).



A child uses wooden blocks to form patterns and structures. Photo by [Ketut Subiyanto](#) on Pexels

High-quality math learning opportunities can be embedded in daily home routines

Parents and caregivers can help children develop math skills before they enter kindergarten, even if the adults are uncomfortable with or anxious about math. How can adults help their children develop these skills, despite already overloaded schedules?

It is not necessary to set aside time for math learning. In fact, it is better to weave math into what caregivers and children are already doing. [One study](#) found that the amount of math talk parents engaged in with their preschool-aged children was positively associated

with children's math skills a year later: Children whose parents used more words related to math had stronger math skills than their peers whose parents used fewer math words.



It is not necessary to set aside time for math learning. In fact, it is better to weave math into what caregivers and children are already doing.

The [Development and Research on Early Math Education \(DREME\) Network](#) of early childhood education researchers designed and studied many activities parents and caregivers can engage in to support their young children's math learning. DREME provides free resources that describe [a variety of fun activities](#) that are [easy to fit into everyday routines](#).

Ironically, [engaging in fun math activities with young children](#) can increase parents' own comfort with math while providing their children with a solid math foundation at home on which to build on in school.

Strategies to incorporate math support into everyday home activities

[Cooking](#) is an activity that provides caregivers the opportunity to teach their children math concepts. While cooking, adults can teach children how to count (e.g., the number of grapes that go into the fruit salad), measure volume (e.g., "We need two cups of flour"), and measure size (e.g., "Let's make sure the pan is 11 inches on one side and 8 inches on the other").

Children can also be asked to count the number of forks needed to set the table, along with questions like, "How many more forks would you need if Grandma and Grandpa came to dinner? How many all together?"

In fact, from morning to bedtime, family life is full of chances to talk about math. For example, caregivers can count the buttons on their child's shirt while helping them get dressed and point out patterns made from stripes (e.g., blue, yellow, red, blue, yellow, red...).



A child practises their math skills using fruit and vegetables. Photo by [Monstera Production](#) on Pexels

The grocery store is also full of [opportunities to learn math](#). For example, caregivers might ask: “We need an apple for everyone in our family, so how many do we need?” and “Can you put five apples in the bag?” Or they might ask: “Which is taller, the Cheerios box or the Corn Flakes box? Which is wider?” Or “Which line has the fewest people in it?”

Math exploration can be a joyful part of family activities

Times when families engage in fun or relaxing activities are also rich with meaningful opportunities to notice and explore math. Consider a walk to the park, which can serve as an informal math classroom. Among the possible questions to ask children are: “Do you see any

circles? What shape is the stop sign?” “Do you see those numbers on the house? Let’s read them together.” “Which is farther, the tree or the telephone pole? Let’s count how many steps it takes us to get to the corner.” “Can you hop like a bunny four times?”



Through these early activities, children can also build a sense of competence and confidence that can prevent them from developing the math anxiety that is so common in adults.

Math opportunities in holiday traditions

Consider, too, the math opportunities in holiday traditions. Children often spontaneously sort their Halloween candy into piles based on type. Caregivers can ask: “Which kind of candy do you have the most of/the least of? How do you know?” “How many more lollipops do you have than M&Ms?” “If you

gave me a candy bar, how many would you have left?”

The role of games

Many [games](#) can help children develop their math skills while also teaching social skills, such as taking turns and practicing good sportsmanship. Board games like Chutes and Ladders, which involve counting with *one-to-one correspondence* (moving one square for each number as players count), [have been shown](#) to improve children’s number knowledge.

Many [family card games](#) can be used to teach children counting and other math operations. For example, in the card game War, players are instructed to first remove the face cards and split the deck between two people, then have each person turn over one card.



A group of children learning math by playing a game. Photo by [Ksenia Chernaya](#) on Pexels

Children can count the number of pictures (e.g., spades) or read the number on the card to determine which card is higher. Whoever has the higher card gets to keep the cards from that round. The game continues until one person has all the cards. To make the game more difficult, each player can turn over two cards at a time and the child has to add the values on the two cards and compare.

Books can support children's skills in both reading and math

Engaging in math activities does not mean reading less. [Research](#) shows that families can [promote children's literacy and math skills simultaneously](#). Some counting books are designed for math. And [research](#) has shown that reading number books increases preschool-

aged children's number understanding.

But math can be integrated into any picture book. For example, [caregivers reading a book](#) about animals and nature might say: "Let's count how many turtles are on the beach in this picture. Are there more birds or more bunnies? Which tree is the shortest/tallest? Do you see any rectangles on this page?"

Caregivers should take care to avoid ruining a good story or turning reading time into a math test, but an occasional math-related question can engage children in active learning while they enjoy listening to the story.

Parents play a big role in building children's math skills and interest

The DREME Network has found that engaging in playful, everyday family math activities together can prepare children to succeed in kindergarten and later grades. Through these early activities, children can also build a sense of competence and confidence that can prevent them from developing the math anxiety that is so common in adults.

For more ideas on how parents and other caregivers can support young children's math skills, visit the [DREME Family Math website](#).

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References

- Berkowitz, T., Schaeffer, M. W., Maloney, E. A., Peterson, L., Gregor, C., Levine, S. C., & Beilock, S. L. (2015). [Math at home adds up to achievement in school](#). *Science*, 350(6257), 196–198.
- Duncan, G.J., Dowsett, C.J., Claessens, A., Magnuson, K., Huston, A.C., Klebanov, P., Pagani, L.S., Feinstein, L., Engel, M., Brooks-Gunn, J., Sexton, H., Duckworth, K., & Japel, C. (2007). [School readiness and later achievement](#). *Developmental Psychology*, 43(6), 1428-1446.
- Gibson, D. J., Gunderson, E. A., & Levine, S. C. (2020). [Causal effects of parent number talk on preschoolers' number knowledge](#). *Child Development*, 91(6), e1162–e1177.
- Napoli, A. R., & Purpura, D. J. (2018). The home literacy and numeracy environment in preschool: Cross-domain relations of parent–child practices and child outcomes. *Journal of Experimental Child Psychology*, 166, 581-603.

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