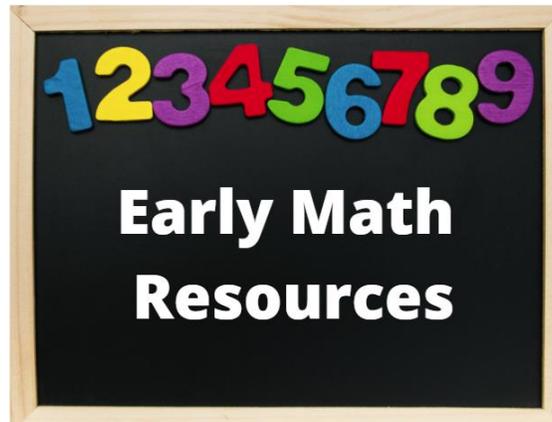


Resources for Families and Providers

Early Math Matters



Math Play: How Young Children Approach Math

Mathematical experiences for very young children should build largely upon their play and the natural relationships between learning and life in their daily activities, interests, and questions.

Exploring the Math in Play

Children become intensely engaged in play. Pursuing their own purposes, they tend to tackle problems that are challenging enough to be engrossing yet not totally beyond their capacities. Sticking with a problem, puzzling over it and approaching it in various ways can lead to powerful learning. In addition, when several children grapple with the same problem, they often come up with different approaches, discuss various strategies, and learn from one another. These aspects of play can promote thinking and learning in mathematics as well as in other areas.

Promoting Math in Everyday Play

Young children engage in significant mathematical thinking and reasoning in their play. If they have sufficient knowledge about the materials they are using, the task is understandable and motivating, then the context becomes familiar and comfortable. Math can be seamlessly integrated with children's ongoing play and activities, but it requires a knowledgeable teacher who creates a supportive environment and provides appropriate challenges, suggestions, tasks, and language. In classrooms where teachers are alert to all these possibilities, children's play enriches mathematical explorations.



Resources from the National Association for the Education of Young Children

Preschoolers Are Natural Mathematicians

Preschoolers aren't yet ready to memorize multiplication tables, but that doesn't mean they cannot learn and explore math concepts they will use when they move on to primary school.

Source: Adapted from the Message in a Backpack, Teaching Young Children 8 (1): 23



The Beauty of Early Childhood Mathematics: Playful Math = Engaged Learning

Another source of beauty in early childhood math emerges from how it can be taught: playfully. From board games to scavenger hunts for shapes, teachers can create math activities that are playful. Teachers can also highlight features of children's play that are mathematical.

Support Math Readiness Through Math Talk

Talk is a fundamental way children learn, even before they understand what is being said. Children who come from homes where there are a lot of books and where family members talk about what they have read, for example, have been shown to have better literacy outcomes in kindergarten and successive grades. This same principle holds true for mathematics. The more parents talk with their child about math at home, the more a child's mind is stimulated to think about math.

Support Math Readiness Through Music

Music is one of the first ways children experience math. Without thinking, our bodies react to music. When we hear music, we rock our babies, clap along, and even look toward the source of the sound. These responses are reactions to musical elements such as steady beat, rhythm, and melody, all of which reflect mathematical concepts. Even the youngest of children can respond to music and the mathematical principles behind it.





Resources for Families and Providers



Development and Research in Early Math Education

Storybooks provide a rich opportunity to build not only literacy skills, but also math understanding. Books with math concepts woven into the pictures and storylines can promote children's mathematical thinking and introduce foundational math concepts such as numbers, shapes, patterns, and measurement. Asking questions and making observations about the math found in picture books can support children's curiosity and enjoyment of math.

Recommended Math Picture Books

Adding and Subtracting

Quack and Count by Keith Baker
Rooster's Off to See the World by Eric Carle
Elevator Magic by Stuart J. Murphy
One is a Snail, Ten is a Crab by April Pulley Sayre and Jeff Sayre
Albert Adds Up by Eleanor May

Counting

Anno's Counting Book by Mitsumasa Anno
Feast for 10 by Cathryn Falwell
Eric Carle's 123 by Eric Carle
Fish Eyes: A Book You Can Count On by Lois Ehlert
Zero is the Leaves on the Trees by Betsy Franco
Mouse Count by Ellen Stoll Walsh
How Do Dinosaurs Count to Ten by Jane Yolen and Mark Teague
Hippos Go Berserk! By Sandra Boynton

Measurement and Size

Who Eats First? by Ae-hae Yoon
Just a Little Bit by Ann Tompert
Balancing Act by Ellen Stoll Walsh
Next to an Ant by Mara Rockliff
Inch by Inch by Leo Lionni
The Growing Story by Ruth Krauss

Patterns and Algebra

Anno's Magic Seeds by Mitsumasa Anno
Two of Everything: A Chinese Folktale by Lily Toy Hong
Mr. Noisy's Book of Patterns by Rozanne L. Williams

Shape

The Shape of Things by Dayle Ann Dodds
Have You Seen My Monster? by Steve Light
Circus Shapes by Stuart J. Murphy
The Greedy Triangle by Marilyn Burns
Mice on Ice by Eleanor May
Mouse Shapes by Ellen Stoll Walsh
Round is a Tortilla by Roseanne Thong
When a Line Bends, a Shape Begins by Rhonda Growler Greene

Spatial Relations

Albert is Not Scared by Eleanor May
Inside, Outside, Upside Down by Stan and Jan Berenstain
Piggies in the Pumpkin Patch by Mary Peterson
Up, Down, and Around by Katherine Ayres
Where's Spot? by Eric Hill
The Secret Birthday Message by Eric Carle
Changes, Changes by Pat Hutchins
Over, Under, and Through by Tana Hoban
Rosie's Walk by Pat Hutchins

Taking Apart Numbers

12 Ways to Get to 11 by Eve Merriam
Ten Friends by Bruce Goldstone



The Importance of Math in the Early Years



Early Childhood Education Blog

Role of the Adult

Parents and Educators play an important role in influencing and being a role model for children by providing opportunities for children to learn and develop new skills. Adults need to allow children to direct their own play and support them by enhancing or extending their play. Children need opportunities to:

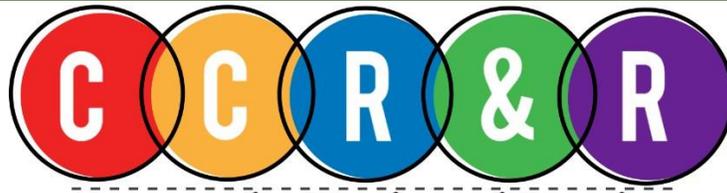
- Discover and create.
- Use number concepts and skills to explore.
- Develop confidence in their ability to think things through.
- Solve meaningful problems.
- Create connections to help discover relationships (e.g. characteristics).



Early Math

What do you need to know and do to help your preschooler learn about math? Most preschoolers, even without guidance from adults, are naturally interested in math as it exists in the world around them. Your child may grasp (and enjoy) certain math concepts more easily than others; some variation in children's math awareness and skills is to be expected. Even so, by age 3 or 4 your child should understand certain math concepts and be able to perform related math tasks. Learn more about how preschoolers learn math:

- [Early Math Matters: A Guide for Parents of Preschoolers](#)
- [Early Math Matters: Preparing Preschoolers to Succeed](#)
- [Understanding Numbers and Counting Skills in Preschoolers](#)
- [Math Skills and Young Children](#)
- [Preschool Math Grows Up: Tips for Teachers](#)



Resources for Families and Providers

Vroom Tips™

Click the links below to access the full Vroom Tip Sheet to support Math learning.

[Tip Sheet in English](#)

[Tip Sheet in Spanish](#)

Brain Building Basics™

We've made the science of early learning simple! Remember these 5 actions to help build your child's brain anytime. They're color coded for easy finding.

Look

Children use their eyes to learn. See what catches your child's attention and talk about it. Or connect eye-to-eye, then smile, chat, hug, or make funny faces!

Follow

Young children learn best when you follow their lead. Tune into your child's words, sounds, movements and ideas! Then respond with your own words and actions.

Chat

Children's brains light up when you talk, sing, or make sounds back and forth with them. Chat about your day, food, and what's around you, or string sounds together for a fun conversation!

Take Turns

Children learn from taking turns when you play, talk, or explore. After they go, take your turn. Then repeat: they go, you go, they go, you go!

Stretch

Children's brains grow strong when you help them stretch their learning further. Keep a moment going: ask your child a question that starts with what, when, where, how or why!



Resources for Families and Providers

Additional Resources to Support Math in the Early Years



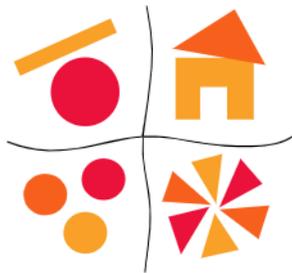
MIND in the Making

[Skill-Building Opportunities](#)

[Turn challenging moments into skill-building opportunities.](#)



[Supporting Math Skills in Infants and Toddlers](#)



Early
Math
Counts

*Laying the foundation for a lifetime of **achievement***

[Early Math Resources](#)



[Math4Littles/Early Math Activities for Two - and Three - Year - Olds](#)



4 things providers can do with these resources:

1. Share the math resources with teachers during staff meetings.
2. Use the Vroom Tip Sheets during professional development for teachers.
3. Use the “Recommended Math Picture Books” to enhance classroom libraries.
4. Use the article “[The Importance of Math in the Early Years](#)” to share with parents while focusing on the role of adults in math play.

4 things families can do with these resources:

1. Learn the importance of promoting math in everyday play
2. Provide books that enhance math concepts at home.
3. Select Vroom tips to support math learning while on the go.
4. Access the “[Early Math Matters: A Guide for Parents of Preschoolers](#)” to learn more about math in the early years.

4 things coalitions can do with these resources:

1. Share the early math resources with child care providers and family child care homes.
2. Create a library at your coalition and include books that focus on math concepts.
3. Distribute Vroom Tip Sheets to providers and family child care homes.
4. Using the “[Math Play: How Young Children Approach Math](#)” article, encourage providers to promote math in everyday play.

