Math is Everywhere

The topic of math can separate a room quickly – you like it or not; feel good at it or not. No matter what your position is on the subject, we all use math throughout each and every day. From setting the dinner table, to estimating if a new chair will fit in a room, to budgeting for groceries…math is everywhere! Research clearly identifies math as a critical set of skills to be developed during the early years. But how do you teach math to a toddler?

The best thing we can do for young learners is to help them feel confident and comfortable with math from the start. This means setting aside any anxieties you have or temptations to say “I hate math” (if you have them). On the other hand, it doesn’t mean flashcards for babies or the latest and greatest app. Early mathematical thinking and reasoning can be introduced and used during every day routines. Here are a few ideas…

- Incorporate math vocabulary such as over, under, above, below, first, last, more, less, etc. in conversations with your child. For example, “It’s time to make breakfast. What do we do first?”

- Seek opportunities to verbalize how you’re using math. For example, “How many steps will it take to get to the couch? Let’s count!”

- The kitchen is a place where math is all around! Count and measure ingredients. For example, “We need four teaspoons of water. Help me count.”

- Use mathematical reasoning to make estimations. For example, “I wonder how many people are here. What do you think?” (Help identify clues).

- Encourage sorting, comparing and contrasting. Have children sort toys such as blocks, into piles by color, shape, or size.

- Find shapes and patterns in everyday life, or make simple games at home. Let’s look for rectangles while we’re on our walk today.

- For older children, play games that require math. This can include card games, puzzles, and popular games like Yahtzee, Mancala, or Connect Four.

- Play grocery store. Give them the props and let their imagination go wild. They’ll create menus, prices, bills, money, and more. (Try other themes such as bank, coffee shop, or whatever is meaningful in their lives).
Children are Born Scientists

From their first moment, children are researchers and scientists. They are figuring out how everything works. They are collecting data, making hypotheses, testing assumptions, and experimenting all day long. Dropped a spoon on the floor again? That’s an experiment. Asking ten why questions before you can take a deep breath? Collecting data. Splashing water all over the bathroom floor? That’s science in action.

Here are some fun ways to channel their natural curiosity through everyday experiences…

- One of the first things children experiment with is cause and effect. Putting words to this process helps them understand. For example, “What happened when you dropped the ball?”
- Ask children to describe the characteristics and properties of things in their environment. For example, “What color is the rock? Is it bigger or heavier than this rock?”
- Let children put their ideas to the test, even if you don’t think it’s the right idea. Trying, failing, adjusting, and trying again is more important than getting it right. For example, “What do you think we should try first? OK, let’s see if that works! Hmmm…it didn’t quite do the trick. What other ideas do you have?”
- Art is full of scientific learning opportunities, from mixing colors to experimenting with light. Creative art (avoid step-by-step crafts) allows for the exploration of many scientific phenomena.
- Science happens every day in the kitchen. When rice boils it goes from hard to soft. When cookies bake they go from soft to hard. What is happening? Have your child help find out!
- Children love weather. Ask them to predict the weather, what they should wear, describe what it feels like, and plan how to play in it.
- Play doctor or veterinarian office. Give them the props and let their imagination go wild. They’ll learn about taking care of people or animals, and test out basic ideas of biology and physiology.
Brains and Bodies

Child development is an integrated process where learning in one area happens in synchrony with one or more other areas. The experiences we provide to young children help to support this integrated learning. This doesn’t mean all development happens at the same time or same rate, but it does mean development in one area is closely tied to development in another area. This is especially true for physical and cognitive development. Once school begins, we often think of learning as a brain activity and recess or break time as physical activity. But the truth is that brains and bodies help each other grow, making both stronger together.

Here are a few ways to develop brains and bodies all at once...

- **Infants**: Using your hands when playing with baby shows him how we physically interact with our world. Activities like peekaboo, This Little Piggy, and Patty-Cake are engaging for babies and captures their attention.

- **Toddlers**: Utilize math words (over, under, near, far, etc.) to begin understanding spatial parameters. Jack-Be-Nimble is a great example of a simple game to play with toddlers as they pretend to jump over the candlestick during that line of the rhyme. Or provide materials in the environment for children to start exercising their spatial awareness skills, such as small climbers or tunnels.

- **Preschool**: Yoga is a simple way to use our bodies to impact our brain by giving it an opportunity to calm down, relieve stress, and increase focus. This holds true for young children as well. Balance out an active day with opportunities to relax the body. Yoga cards, guided exercises, or just some simple stretches can provide your child the opportunity to “balance the brain”, redirect their focus, and give her the mental boost she needs to engage in other activities.

- **School Age**: Structured physical exercise, such as activities and games with instructions or rules can provide benefits that support brain/body integration. Games such as Simon Says, Red Light/Green Light, or even obstacle courses encourage children to use their brain power to navigate what to do, when to do it, and strategize how to be successful.
Teachable Moments - Tips to Make Every Moment a Learning Moment

Thinking Questions

Learning is not just about teaching children academic concepts; we want to equip children with the skills to seek information, think, question, wonder, ponder, examine, and evaluate. As they build these thinking muscles, children strengthen other key intellectual skills like problem-solving, flexibility, and persistence. With a little adult support, it’s easy to turn every day moments into teachable moments; moments that inspire children to develop these “approaches to learning” skills.

Here are a few examples to get you started...

- For non-verbal children, give words to their actions and curiosities.
  
  For example: Are you trying to reach the bear? You are trying so hard. I see you reaching.

- For older children, set the goal of prompting thinking versus just giving an answer. You won’t do this every time, but each time you do it, you’ll be building those thinking muscles.

- Child: Why is grass green?
  
  Thinking question: Hmmm…I wonder. What do you think? Where do you think we can find the answer?

- Child: I can’t do it!
  
  Thinking question: I can see you’re trying so hard. What could you do a little differently before you try again?

- Children: It’s my toy!
  
  Thinking question: I see you both want the toy. How do you think we can solve this problem?

- Child: Look at my picture!
  
  Thinking statement: I like the choices you made. Tell me all about it!

- You can also use thinking questions to solve issues you’re having.
  
  For example: I noticed that this game is very loud, however, I can’t hear my phone conversation. How should we solve this problem?
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Story Strategies

Reading stories aloud with your child is one of the pleasures of childhood and of parenting. Curled up together with a story is a great place to be. Story time is also one of the best language and literacy learning tools. With a little intention, adults can add oomph to this daily activity, all the while helping to develop and grow your child’s language and literacy skills. Here are some tips to turn story time into an enhanced learning experience...

- Getting started:

  Follow your child’s interests allowing her to help choose books.

  Adults can help pre-readers begin to notice print, how to handle a book, and how to follow the written word on a page. Occasionally point to words as you read so that your child knows that words flow from left to right and that the story comes from the text.

- Rhyming:

  Children enjoy stories that have repeated phrases, familiar songs, and patterns within the text. Hearing and reciting the rhyme, repetition, and rhythm of words allows them to begin to remember the words.

  Leave out the subsequent rhyme in a patterned rhyme book and have the child guess the word that is missing. For example, “Goodnight stars. Goodnight air. Goodnight noises __________.” Allowing your child to insert: “everywhere!”

- Juicy words:

  A juicy word is an interesting and precise word that sounds good when it’s read. It sparks the senses and elevates the level of what is written in a way that provides more description. Don’t hesitate to include books and text with juicy words. Not only does it expand your child’s vocabulary, but will spark the opportunity to ask thinking questions!

- Predictions:

  Encourage your child to get involved in the story by describing pictures and making predictions.

  Ask open-ended questions like “What do you predict will happen next?”

  Children may be unsure of how to answer an open-ended question. Model these strategies by making your own predictions and narrating descriptions of the pictures.
Let’s Talk Baby Talk!

Baby talk, also known by its more formal name parentese, may come naturally to some, but can be learned and is very powerful tool for communicating with your infant. But what exactly is parentese? It is a method of speaking to a child in which the adult uses exaggerated and/or repetitive language to capture the attention and increase the engagement of the child.

Research has found that parentese is associated with improved language outcomes. It makes language learning easier because of its simpler linguistic structure and exaggerated sounds. The higher pitch, tones, and slower tempo of speech are socially engaging and are exciting for children to interact with and respond to.

Parentese Tips and Tricks

- Hold your child in a comfortable position, where you and he/she can make eye contact with one another.
- Start by speaking softly and slowly, and then use higher tones and/or draw words out as you say them. For example, “How big is (child’s name)? (Child’s name) is soooooo big!”
- Use words that describe your child and/or what you and your child are doing. For example, “Is (child’s name) ready for play time? Let’s go sit on the floor!”
- Watch for signs that your child is engaged. Pay attention to what he/she is looking at. Your child may smile, widely open his/her yes, or squeal with excitement as you talk.
- It’s okay if your child is not verbal. Take on both sides of the conversation, speaking for both yourself and from the perspective of your baby. Go back and forth between adult speech and baby talk. Your child will tune in more closely to what is being said and may decide to engage with his/her own verbalizations.
- It’s okay that your child may not understand what you are saying. The goal is to relationship build through eye contact and conversation, and to begin to model the principles of language development for your baby.