

LET'S TALK, READ AND SING ABOUT STEM!

TIPS FOR FAMILIES WITH YOUNG CHILDREN

Children begin discovering the world around them from the moment they are born. When you talk, read and sing with your child, you're helping her learn. It can be as simple as counting your baby's toes during bath time, asking your toddler a question about the sky, or encouraging preschool-age children to build with blocks! In fact, very young children can learn some of the basic concepts underlying **science, technology, engineering and math** (STEM). You can discover STEM with your child in many ways. Talk, read, sing, play, sign or use other ways to communicate – whatever works best for your family.



For children with disabilities or developmental delays, communicate with your service providers and keep each other informed of your child's individual learning style and methods you are using to make your child's language environment as rich as possible.

While we provide some tips, we know every child is unique. As always, you should do what is best and developmentally appropriate for your child.

WHAT IS STEM?

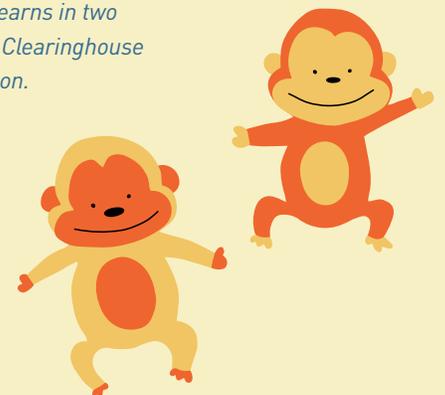
"STEM" stands for **science, technology, engineering and math**. STEM can refer to the subjects individually or one or more working together, but can also mean a way of doing things that includes solving problems, asking questions and exploring the world around us.

For example, children learn about the concept of technology when they're exploring tools or simple machines. These can be items they use every day like a pair of scissors, or things they might see like the wheels of a car as they walk outside.

For young children, we focus on STEM through exploration, play and building curiosity about the world and the way things work. STEM learning is important for everyone and can happen anytime, anywhere. The real-life skills that people develop when learning STEM help make everyone better problem-solvers and learners.

For parents of children who are learning English or speak another language themselves, talk about STEM in your **home language**, in English, or both. Research shows that bilingual children have an easier time understanding math concepts and developing strong thinking skills. When families use their native language, it helps children foster a rich sense of self. Bilingual students have certain cognitive and social benefits that facilitate success in school and life.

Source: Zelasko, N., & Antunez, B. (2000). If your child learns in two languages. National Clearinghouse for Bilingual Education.



The following tips include **STEM words** (in bold) that you can use with your child.

TIPS FOR INFANTS

- *Let's Observe the World!* Observing is important in **science**. Everywhere you go, talk about what you see and describe what your baby is looking at or pointing to: "Wow, I see that **big, blue** truck too! Look at the black spinning wheels! **How many** wheels does it have all together? **1, 2, 3, 4** wheels. **Four** wheels **all together**."
- *Use All Your Senses*. At the grocery store, discover the smell, feel and taste of different items with your child. Hold an orange and say, "What does an orange look like? Feel like? It's **round** and **smooth**." At home, hold a dish towel and say, "A dish towel is a **rectangle** and **feels soft**." Encourage your baby to explore these objects with their senses.
- *Count, Rhyme and Sing*. Use **numbers** as you go about your day together. Sing simple number songs like "**One, two**, buckle your shoe." Repetitive songs like "The Wheels on the Bus" or "Los Cinco Hermanitos" help babies learn **patterns** too!
- *Would You Like More?* During meal time, you can teach about the idea of "**more**" – the first step toward understanding **addition**. As you feed your baby, pause and ask if she wants **more**. Wait to see how she responds to your questions and follow her cues.
- *Link Words with Actions*. When you move your baby from one position or place to another, put words to your actions. Say "**up, up, up**" when you lift your baby from the changing table, crib, or floor. When you place him down, say "now **down** you go to play!" These simple words build the foundation for later math and engineering skills.

TIPS FOR TODDLERS

- *Let's Count Cars*. When walking down the sidewalk or in a parking lot, count the cars together as you pass them: "**1, 2, 3, 4, 5**. We passed **five** cars to get to the store." You can also count buses or other vehicles together while you are outside.
- *Explore Sizes*. Ask your child to **compare** the sizes of measuring spoons when cooking. Use words like **smallest, small, medium, big, bigger, and biggest** to describe each spoon.
- *Whole and Half*. At meal time, show your child a **whole** piece of toast and cut it in **half**. Then say, "These two pieces are the same size. They're called **halves**."
- *Let's be Scientists!* At the grocery store, have your child hold two different pieces of fruit in their hands. Ask, "Which one is **heavier**? Which one is **lighter**?" Ask other questions that encourage observation and description, like "Which fruit is red? Can you find the yellow fruit?" Exploring together builds skills for future **scientists**!
- *Compare Amounts*. At dinner, compare the size of your food portions. Say, "You have **more** carrots than I do. I have **fewer** carrots than you."
- *Cause and Effect*. Stand in the bathroom and turn the lights off and on. "When I flip the switch **up**, the light goes on! What will happen if I flip it **down**?" They are learning about technology!
- *What Rolls?* Spheres are **round, three-dimensional** shapes. Look around your environment for something that is a sphere and **predict** what would happen if you dropped it on the ground. Would it roll? Bounce? Spin? If it's safe to do so, drop the sphere and check your **prediction**!
- *Enjoy a Shape Snack*. Offer a **square** (or **rectangle**) cracker. Cut a piece of cheese into a **triangle**. Talk about and trace each shape with your finger before you eat it.
- *Count Hugs & Kisses*. Before putting your toddler to bed, ask if they want two kisses or three kisses. **Count aloud** as you give each kiss. You can count hugs too!
- *Sing about STEM!* Songs with **repeated phrases** like "Old MacDonald Had a Farm," "Wheels on the Bus," or "Los Cinco Hermanitos" can teach children about patterns.

TIPS FOR PRESCHOOLERS

- *Why? Questions.* When young children ask “**why?**” questions, they are being scientists! As a parent, you don’t have to have the right answers to help your child learn about STEM. You can respond by saying, “**That’s a good question. How can we find out together?**” Have fun and be co-discoverers.
- *Laundry Time is Talk Time.* When folding laundry with your child, make a **pattern** with socks. Line them up like this: **big, small, big, small, big, small.** Then, have fun **matching** the pairs of socks together. Every time you find the right pair, say, “It’s a **match!**”
- *Setting the Table.* While setting the table, ask your child tell you **how many** forks you need for everyone to have one, and then count them out loud together. You can talk about **texture** too. How does a napkin feel **compared to** a plate?
- Sing simple **number songs** and nursery rhymes like “Counting in Twos,” “One Banana, Two Bananas,” “Five Little Monkeys,” and “Tres Pececitos.”
- *Let’s Measure.* In the kitchen, point out and read the lines on the measuring cups and spoons as you prepare dinner. Talk about how **half** the onion gets used for the soup. Let your child fill and pour using different measurement methods: **one cup** of cornmeal for the cornbread; **two tablespoons** of oil to cook the chicken.
- *Go on a Shape Hunt.* You can discover shapes all around you. “The window is a **rectangle**. Look, it has **four sides** and **four corners**. Let’s see **how many** rectangles we can find.” Or, “The mirror is shaped like an **oval**.” It’s fun to make shapes too. Using a stick, draw a shape in sand or dirt while at the park. See if your preschooler would like to try. Practice making **BIG circles** and then **little** ones, **BIG squares** and **little** ones, etc.
- *Math Walk and Talk.* Take a math walk on the way to the bus. As you walk, play a game where you and your child need to take “**four big** steps,” find “**six** pebbles” or touch “**seven** green leaves.” Ask and work together to solve how many questions, such as “**How many** steps from the front door to the sidewalk?”
- *What Comes Next?* You can use snack time to make patterns: place a strawberry, a cracker, and a slice of cheese in a repeated line across the plate. On a walk, use a **BIG-step, little-step pattern**. Ask your child, “What comes next?”
- *Let’s Build!* Give your child safe, everyday **materials** like cardboard, tubes, string, fabric and tape. You can also provide simple **tools** and machines like scissors, rulers and wheels. Allow your child to get creative and work together to **build, engineer** and **problem solve!** After you finish building, talk together about why you built the **design** the way you did and what tools made it easier.



You can find more tips like these—as well as videos, information, and more—at [Too Small to Fail](#) and [Let's Talk about Math](#). Other early childhood STEM resources can be found at the [Early Childhood Learning & Knowledge Center](#). Track your child's development by using the [Milestones Moments Booklet](#). If you have concerns about your child's development, including their language development, talk to your child's primary care provider.

For more information on developmental and behavioral screening, visit [Birth to Five: Watch Me Thrive!](#) and [Learn the Signs. Act Early](#). For more information on early learning, please visit the [National Center on Early Childhood Development, Teaching, and Learning \(NCECDTL\)](#), Head Start's [Center on Quality Teaching and Learning](#), [Early Head Start National Resource Center](#) and the U.S. Department of Education [early learning webpage](#).

For more information on working with young children who are learning more than one language, please visit Head Start's [National Center for Cultural and Linguistic Responsiveness](#) and the [National Clearinghouse for English Language Acquisition \(NCELA\)](#). For more information on making the language environment richer for children with developmental disabilities or delays, please visit the [Center for Early Literacy Learning](#), and [Facts about Developmental Disabilities](#). For resources on building language, see the [Talk, Read, and Sing Together Every Day!](#) tip sheets.

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