

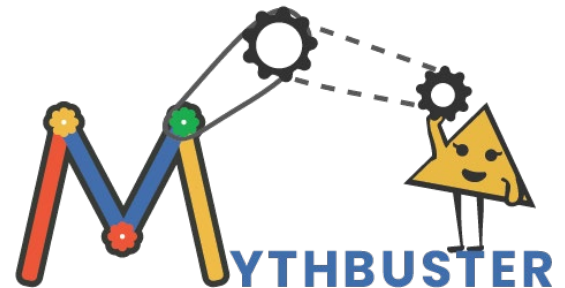
A GUIDE TO...

ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

STEM isn't just for scientists, mathematicians, or engineers—it's for every child, every day, in every environment. Whether you're a parent, caregiver, or educator, you have the power to nurture young minds through Science, Technology, Engineering, and Math learning that is already happening naturally in daily life.

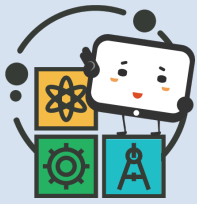
Here's a fact: You don't need expertise or expensive materials. You just need curiosity, enthusiasm, and the willingness to explore the world alongside children! We will show you how!



STEM LEARNING EVERYDAY, EVERYWHERE, AND FOR EVERYONE!

- ▶ [Learning Isn't Automatic—It's Interactive!](#)
- ▶ [All Children Need Opportunities for STEM](#)
- ▶ [Early Educators Enhance Every STEM Experience](#)
- ▶ [STEM Learning Happens Everyday and Everywhere](#)
- ▶ [Play Is Powerful Learning](#)
- ▶ [Guided Play Builds Big Skills](#)
- ▶ [STEM: More Than Just Science and Math](#)
- ▶ [Tech Thinking, Not Tablets or TVs](#)
- ▶ [Little Learners, Big Builders](#)
- ▶ [Math Means More Than Counting](#)
- ▶ [Making STEM Simple and Inexpensive](#)
- ▶ [STEM Starts Small but Strong](#)
- ▶ [STEM is for Girls and Boys](#)
- ▶ [STEM: Equally Essential as Reading and Writing](#)
- ▶ [Accessible Learning for Everyone](#)
- ▶ [All Children Can Be STEM Thinkers](#)





A GUIDE TO...

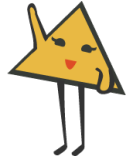
ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

MYTH: Children learn like sponges or on auto-pilot—they just soak things up.



FACT: Children learn in the context of positive relationships with responsive adults.



The idea that all children automatically soak up new information like a sponge came from early studies of how typically developing children learn language. But research shows that many other factors shape learning. A child's unique needs, like learning differences, and their life experiences, like how often they're exposed to learning, are very important. Just watching TV isn't enough.

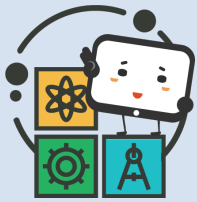
Children learn best when adults engage with them by observing and responding to their actions and communication.¹ These interactions help develop their language, thinking skills, emotions, and knowledge in STEM. Some children may also need extra guidance in certain areas.² For example, children with an increased likelihood of dyslexia may need help with sounds in words. Children with language delays may need help with vocabulary, and children on the spectrum may need support learning social skills. Even with these guided supports, learning can still be fun and happen naturally during everyday routines and play.

SOURCES:

1. [Turn Off TV to Teach Toddlers New Words](#)
2. [Direct Instruction, DISTAR, and Language for Learning](#)

WHAT CAN I DO?

- ▶ Access [A Guide to Adaptations](#) to learn about the different kinds of support children with disabilities might need to be fully included in STEM learning opportunities.³
- ▶ Check out [A Guide to Teaching Practices](#) for more ways to help all children join in and learn during STEM activities.⁴
- ▶ Learn how teachers can guide play to support STEM learning with our blog: [Mythbuster Series #4](#).⁵



A GUIDE TO...

ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

MYTH: Children only do well because they try hard. Things like income, race, or ability don't affect success.



FACT: Children from underserved communities or with disabilities often don't get the same opportunities to reach their full potential.



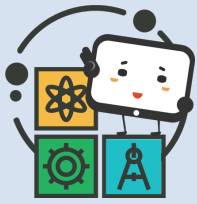
Starting in infancy, children are naturally curious and eager to learn about the world around them. But young children with disabilities or from underserved communities often don't get or are denied the same learning opportunities to reach their full potential.⁶ Children need adults in their lives to create positive learning experiences and opportunities.⁷ Remember that adults need support too—like worthy wages and access to professional development—so they can create caring, supportive learning environments that help all children succeed.

SOURCES:

6. [STEM for Inclusive Excellence and Equity](#)
7. [Advancing Equity in Early Childhood Education](#)

WHAT CAN I DO?

- ▶ **Think about your own beliefs** about culture, race, and ability, and be aware of unfair systems that continue to keep some children from getting equitable opportunities to learn.
- ▶ Find out how you can help promote fairness in early childhood education by exploring [Advancing Equity in Early Childhood Education](#).⁷
- ▶ Learn more about [motivation](#) and how to support children's natural desire to learn by encouraging and praising their efforts.⁸
- ▶ Read and watch [Alex's story](#) to see why it's important for all children—including those with disabilities—to have equitable access to STEM learning opportunities.⁹



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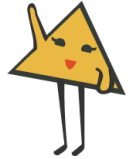
ADDRESSING STEM MYTHS

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MYTH: Children just play in childcare. They don't learn anything.



FACT: High-quality early childhood environments help young children build STEM skills.



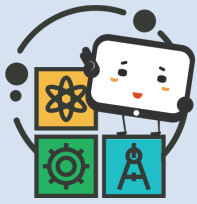
High-quality early childhood learning environments help children explore important concepts. For example, they can discover force and motion by dropping a ball down a slide or learn about size by trying on different sized shoes in the play area. Some learning happens naturally through children's curiosity and hands-on exploring. But when a skilled teacher or a responsive adult joins in, these experiences can be expanded to help children learn important STEM foundational concepts and processes.¹⁰

SOURCE:

10. [Engaging Preschoolers in STEM: It's Easier Than You Think!](#)

WHAT CAN I DO?

- ▶ Watch the STEMIE video [Adaptations to Everyday Routines and Activities: Make STEM Happen for Infants and Toddlers](#) to see how simple adaptations to daily routines and activities can support STEM learning opportunities.¹¹ Think about how these ideas could be used in childcare settings.
- ▶ Check out the [Peep and the Big Wide World Teaching Strategies Video Library](#) to see real examples of STEM teaching in high-quality childcare programs. Peep is also available in an accessible format.¹²
- ▶ Watch STEMIE's [Why Inclusion video series](#) to learn why including all children—those with and without disabilities—is important and how it helps everyone grow and learn together.¹³



A GUIDE TO...

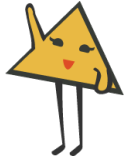
ADDRESSING STEM MYTHS

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MYTH: Real learning only happens in classrooms.



FACT: Learning can happen everywhere.



Children can learn in many places outside the classroom – at home, in the grocery store, in the park... everywhere! When adults and children spend time together in positive ways, children learn to solve real-world problems and understand everyday experiences. These out-of-classroom moments are an important part of STEM learning. For example, during a walk, adults can guide children to observe rocks of different sizes, colors, and textures, and ask or encourage questions based on what they notice with their senses.¹⁴

Many museums and libraries also offer in-person or online activities where families and caregivers can learn together with their children.¹⁵ With the right adaptations to space, materials, or teaching style, children with and without disabilities can fully take part in many informal learning experiences outside the classroom.

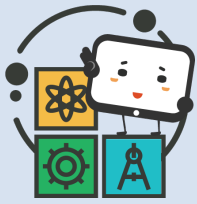
SOURCES:

14. [Leveraging Research on Informal Learning to Inform Policy on Promoting Early STEM](#)

15. [STEAM the Child's Way with Boston Children's Museum](#)

WHAT CAN I DO?

- ▶ Help children learn about real-life problem-solving by asking open-ended questions that get them thinking critically. Try asking things like, "What did you notice about...?" or "I wonder why...?" For more ideas, check out [A Guide to Asking Open-Ended Questions](#).¹⁶
- ▶ Learn how to support STEM learning at home—especially for children with disabilities—by reading the [Blog: Enhance STEM Learning and Participation for Young Children with Disabilities](#).¹⁷
- ▶ Explore how to support STEM outside the classroom with STEMIE's [Discovery Play Activities with Your Young Child series](#), which shares fun and easy ideas to try at home or in the community.¹⁸



A GUIDE TO...

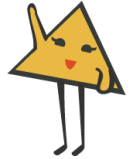
ADDRESSING STEM MYTHS

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MYTH: Play isn't real learning.



FACT: Children learn through play.



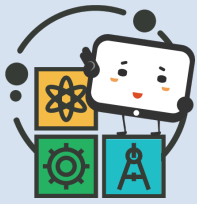
Children learn through play, and play is very important. It supports children's joyful, hands-on learning and helps them learn in all areas of development—critical thinking, emotions, movement, self-control, language, reading, and STEM.¹⁹ However, some underserved children don't get enough chances to play. Instead, teachers use direct teaching methods, which can lead to poor learning outcomes. Play can happen in different ways: on their own (self-directed), alongside others (parallel play), or with others (cooperative play). Adults should create engaging play areas and choose materials that reflect children's interests. It's also crucial to give children enough playtime and offer guidance through questions or comments to enhance their learning during play.

SOURCE:

19. [NAEYC's Developmentally Appropriate Practice: Principle 3](#)

WHAT CAN I DO?

- ▶ Learn more about how adults can guide play to support STEM learning by reading our blog: [Mythbuster Series #4](#).⁵
- ▶ Play with children by asking open-ended questions that help them think and explore. For more ideas, check out [A Guide to Asking Open-Ended Questions](#).¹⁶
- ▶ Learn more about [Developmentally Appropriate Practice](#), including guided play, by reading pages 9–10 of the resource.¹⁹
- ▶ Find out what play is, why [learning through play](#) is important, and how you can support children's play.²⁰



A GUIDE TO...

ADDRESSING STEM MYTHS

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MYTH: Children should only learn through free play.



FACT: Adult-guided play is good for children



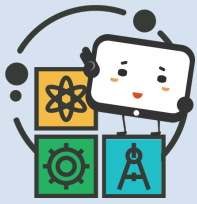
Research shows that adult-guided play, when adults provides support while still following children's lead, can help improve children's learning and the quality of their play. Guided play doesn't mean direct teaching or taking away a child's autonomy and choice. Instead, adults set up an appropriate learning space and choose materials based on what the child likes. Adults give help when needed by asking questions, making comments, or offering support—to help children stay engaged and lead their own playful learning.⁵

SOURCE:

5. [STEMIE Mythbuster Series #4](#)

WHAT CAN I DO?

- ▶ **Follow the child's lead** by supporting their play and learning based on what they like and what they're good at. Give support when needed to help them learn. To learn more, check out [A Guide to Teaching Practices](#) for information about scaffolding.⁴
- ▶ Join in play by asking open-ended questions that help children think critically and explore. Try asking, "What are you making?" or "I wonder what would happen if...?" For more examples, see [A Guide to Asking Open-Ended Questions](#).¹⁶
- ▶ Learn more about [Developmentally Appropriate Practice](#), including guided play, by reading pages 9–10 of the resource.¹⁹
- ▶ Watch the video [STEM is Everywhere! Making STEM Happen for All Young Children](#) to learn how guided play can happen everyday and everywhere.²¹



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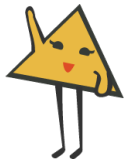
ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

MYTH: STEM is only about science and math.



FACT: STEM stands for **Science**, **Technology**, **Engineering**, and **Math**.



STEM stands for Science, Technology (including computational thinking), Engineering, and Math.²² In early childhood, STEM subjects are often taught together and can easily be connected to art, language, reading, and social-emotional learning. The goal is to connect learning areas—not to keep them separate.²³

S

Science is the study of how things are made and how they work in the natural and physical world.²⁴

T

Technology is about learning how to create and use tools and systems. It includes computational thinking, which is a way of solving problems by figuring out what needs to be done, how to do it, and why it matters.²⁴

E

Engineering for young children means exploring and learning about different materials so they can solve problems or build something new. This is a step-by-step process where children try out ideas and improve them as they go.²⁴

M

Math is the study of patterns in numbers and space. It includes counting, understanding numbers, shapes, size, and how things fit together. Math also includes using and practicing math skills in real-life ways to build understanding.²⁵

SOURCES:

22. [National Science Foundation \(2000s\)](#)

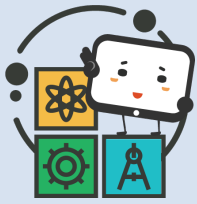
23. [STEM Starts Early: Grounding Science, Technology, Engineering, and Math Education in Early Childhood](#)

24. [STEMIE Learning Trajectories \(STEMIE LT\)](#)

25. [Learning & Teaching with Learning Trajectories \(\[LT\]²\)](#)

Continue to
next page for
What Can I Do?





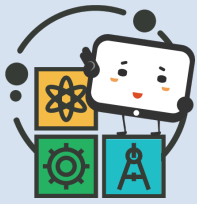
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WHAT CAN I DO?

- ▶ Think about how to change the space, materials, or teaching to meet each child's needs. For example, if a child can't sit easily, set up the activity so they can stand or lie on their tummy. If they have trouble holding small toys, try using larger items or make tools easier to grip with things like rubber bands, tape, or Velcro. See [A Guide to Adaptations](#) for more ideas.³
- ▶ Ask problem-solving questions while children play. For example: "It looks like you want to make the bridge go across your river. What could you do to make it longer?" For more ideas, see A Guide to [A Guide to Asking Open-Ended Questions](#)¹⁶ or check out STEMIE's [Daily STEM Prompts on Instagram](#).²⁶
- ▶ Explore [STEMIE's Learning Trajectories](#) to find learning goals, progression steps, and activity ideas for science, technology, and engineering.²⁴
- ▶ Check out [\[LT\]² Learning & Teaching with Learning Trajectories](#) for goals, progression steps, and activities that support early math learning.²⁵



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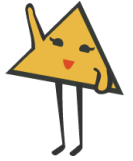
ADDRESSING STEM MYTHS

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MYTH: Technology only means using computers or tablets.



FACT: Technology includes the ideas behind building or designing tools and technology.



According to the Office of Educational Technology, the “T” in STEM stands for learning the basic ideas behind building or creating technology.²⁷ This includes computational thinking, which is the basic way of thinking used in computer science. Computational thinking is a way to solve problems by figuring out what needs to be done, how to do it, and why it matters.

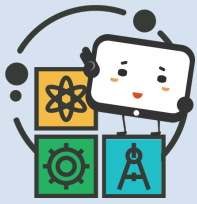
It’s important to know that this does not mean using devices like computers or tablets, or educational technology (i.e., using technology to support the learning experience).

SOURCE:

27. [Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update](#)

WHAT CAN I DO?

- ▶ Explore [STEMIE’s Learning Trajectories](#) to find learning goals, progression steps, and activity ideas for computational thinking.²⁴
- ▶ Learn more about technology and young children by reading [Guiding Principles for Use of Technology with Early Learners](#) (page 7).²⁸
- ▶ Explore ways to include computational thinking in everyday routines—like toothbrushing or with STEMIE’s [Daily Routines Explorations](#).²⁹
- ▶ Listen to [Computational Thinking in Early Childhood](#)³⁰ or watch [Computational Thinking for All Children](#)³¹ to better understand what computational thinking looks like for young children.
- ▶ Watch how a mom teaches her child early computational thinking while they [make ice cream sundaes](#)³² together.



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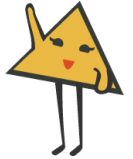
ADDRESSING STEM MYTHS

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MYTH: Engineering is too hard for young children to understand.



FACT: Young children are engineers.



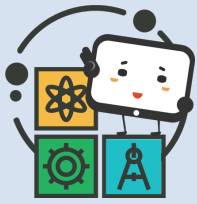
Engineering means solving problems by asking questions, exploring materials, coming up with solutions, and making those solutions better. Research shows that young children use this engineering design process during everyday play. In fact, a study by Lippard and colleagues found that preschoolers showed three key engineering ways of thinking, called habits of mind: systems thinking (seeing how parts work together), optimism (believing they can solve problems), and collaboration (working with others). Children showed these habits most often while playing in classroom areas like art, blocks, sensory, and dramatic play. These habits appeared more when early childhood educators support and encourage children's engineering thinking during play.³³

SOURCE:

33. [STEMIE Mythbuster Series #5](#)

WHAT CAN I DO?

- ▶ Consider the materials you have for children to use in your home or classroom. Use [A Guide to Adaptations](#)³ to make sure all children can join in engineering play and thinking.
- ▶ Watch how children come up with their own ideas and solutions. Then ask open-ended questions to help them think more deeply or come up with new ways to improve their ideas. See [A Guide to Asking Open-Ended Questions](#)¹⁶ for examples.
- ▶ Explore [STEMIE's Learning Trajectories](#) to find learning goals, progression steps, and activity ideas for engineering.²⁴
- ▶ Learn more about "habits of mind" and how to support young children's engineering thinking by reading our blog: [Mythbuster Series #5](#)³³



A GUIDE TO...

ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

MYTH: Math is only about adding, subtracting, or counting.



FACT: Math is more than adding, subtracting, or counting—it also includes shapes, measurement, patterns, and understanding space.



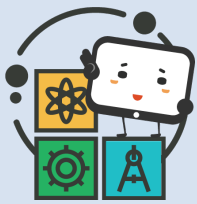
While adding, subtracting, and counting are important math skills, math is about much more than that. It also includes geometry, spatial reasoning (understanding how things fit and move in space), measurement, and patterning. These math skills help children solve problems, explain how and why they solved them a certain way, and understand how things are organized and repeated. Learning these skills early helps build a strong foundation for success in school later on.³⁴

SOURCE:

34.[Myths of Early Math](#)

WHAT CAN I DO?

- ▶ Check out [\[LT\]² Learning & Teaching with Learning Trajectories](#) for goals, progression steps, and activities that support early math learning.²⁵
- ▶ Learn what early math looks like for young children by watching [What Counts in Teaching and Learning for ALL Young Children?](#)³⁵
- ▶ Build important math skills at home with fun and simple activities like:
 - [Discovery Play Activities](#) – use playtime to explore math.¹⁸
 - [Daily Routine Explorations](#) – find math in everyday routines like cooking, cleaning, or getting dressed.²⁹
 - [Storybook Conversations](#) – communicate about math ideas while reading together.³⁶



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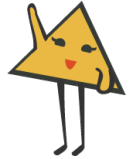
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MYTH: STEM learning costs a lot of money.



FACT: Most of the time, STEM learning doesn't cost anything.



You don't need expensive toys for young children to learn STEM. STEM is all around us and can happen with everyday items from home or nature. What matters most is how adults and children interact—not the toys they use.³⁷

Young children are naturally curious. Adults can support their learning through simple, hands-on activities during daily routines and play. For example, counting dry ingredients while making snacks is Math. Using measuring cups or watching butter melt while baking is Math and Science. Following a recipe step-by-step is Technology, or Computational Thinking (solving problems by thinking about what, how, and why).

STEM learning also happens outside. Children can explore science in a park or backyard by asking questions and observing the world. Loose parts like sticks, rocks, or bottle caps can spark creativity and support STEM thinking.

Adults can help children build STEM knowledge by asking open-ended questions, offering guidance, and using simple materials - without spending extra money.

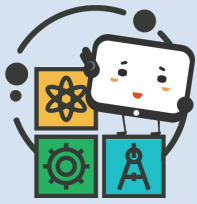
SOURCE:

37. [STEMIE Mythbuster Series #3](#)

WHAT CAN I DO?

- ▶ Explore STEM during everyday routines like [mealtime](#) and [bath time](#).²⁴
- ▶ Offer STEM learning experiences by asking open-ended questions during play and daily routines. For example, try asking, "What do you notice?" or "What might happen next?" Find more ideas in [A Guide to Asking Open-Ended Questions](#)¹⁶ or check out STEMIE's [Daily STEM Prompts on Instagram](#).²⁶
- ▶ Learn easy ways to support STEM at home by reading the [STEMIE Blog](#).³⁸
- ▶ Try the [My STEM Adventure app](#) with your child. The app gives fun prompts that encourage children to explore their surroundings, take pictures, and discover STEM ideas in everyday life.³⁹





A GUIDE TO...

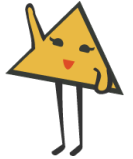
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MYTH: STEM isn't for babies and toddlers—it's only for older or gifted children.



FACT: STEM learning starts in infancy when babies begin to explore the world around them.



Infants and toddlers are natural explorers. They start to understand STEM ideas through play and hands-on experiences, especially when supported by caring adults.

In their first two years, children build important STEM skills—like problem-solving, critical thinking, and making predictions—by exploring and interacting with people and objects around them.

Babies learn about the world by using their senses and through everyday interactions. As they grow, they begin to understand cause and effect—like what happens when they shake a rattle or drop a toy.

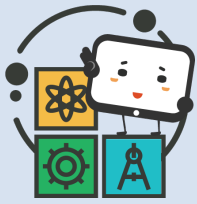
During free play, toddlers often show they understand space and position, such as “above,” “under,” or “next to.” They also begin to explore natural things in their environment, like light, sound, and weather.⁴⁰

SOURCE:

40. [STEMIE Mythbuster Series #1](#)

WHAT CAN I DO?

- ▶ Find out how to include foundational STEM concepts and processes in your daily routines by watching the video [Adaptations to Everyday Routines and Activities: Make STEM Happen for Infants and Toddlers](#).¹¹
- ▶ Help babies and toddlers explore STEM ideas during everyday routines. For example, try STEMIE's activities for [mealtime](#) and [bath time](#) to find fun ways to build learning into daily life.²⁴
- ▶ Explore STEM concepts and processes during everyday routines and play with our [Early Intervention Cards](#).⁴¹



A GUIDE TO...

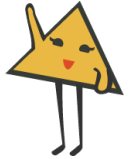
ADDRESSING STEM MYTHS

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MYTH: STEM is only for boys.



FACT: Girls are just as interested in STEM as boys



Dr. Jessica Cantlon, a professor of developmental neuroscience at Carnegie Mellon University in Pittsburgh, studied the brains of young children. She looked at 500 children between the ages of 6 months and 8 years and found that even as babies, boys and girls were equally interested in number-related ideas.⁴²

Two international tests that measured how well older children did in math, science, and reading showed that girls scored just as well—or even better—than boys.⁴³

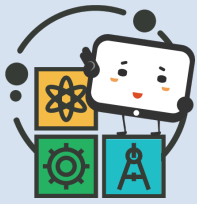
SOURCES:

42. [Math Myths: Are Boys Really Better at Math?](#)

43. [Myths and Misperceptions: Reframing the narrative around women and girls in STEM](#)

WHAT CAN I DO?

- ▶ **Follow and support your child's interest** in STEM! When they show curiosity or ask questions, help them keep learning by offering more chances to explore.
- ▶ Use science and math words with all children while you play and go through daily routines. For example, make snack patterns, count blocks while building, or describe what your child is doing as they explore. For more ideas, check out STEMIE's [Daily Routine Explorations](#).²⁹
- ▶ Read books about girls and women doing STEM activities. Author Andrea Beaty has many children's books with girls as the main characters doing STEM. Try [Storybook Conversations: Rosie Revere, Engineer](#)³⁶ or look at STEMIE's curated list of books about [Women Innovators in STEM](#).⁴⁴



A GUIDE TO...

ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

MYTH: Learning language and reading is more important than learning STEM.



FACT: All areas of a child's development are important and connected. STEM builds skills like memory and self-control that support reading and writing.



All parts of a child's development are important and connected. STEM, language, and literacy support each other and can be learned together. For example, during story time, adults can ask open-ended questions, pose problems, and talk about STEM ideas with children. These conversations help children build their STEM vocabulary and knowledge while also supporting their language and literacy development.⁴⁵

STEM and literacy use many of the same language skills. Words about position and time—like 'more,' 'less,' 'bigger,' 'smaller,' 'next,' and 'later'—are not only part of math, but also help children understand what they read. These shared language skills show how STEM learning supports all kinds of learning.⁴⁵

STEM skills—like counting, problem-solving, and sticking with a task—are just as important as learning to read and write. These skills help children succeed in school and are connected to executive function, which includes flexible thinking, memory, and self-control. Executive function plays a big role in school success, and STEM activities help children develop these important thinking skills.⁴⁶

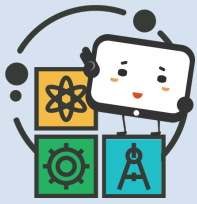
SOURCES:

45. [STEMIE Mythbuster Series #2](#)

46. [Early STEM Matters: Providing High-Quality STEM Experiences for All Young Learners](#)

Continue to next page
for **What Can I Do?**





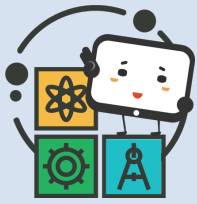
A GUIDE TO...

ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

WHAT CAN I DO?

- ▶ Instead of asking yes/no questions, ask open-ended questions to help children think more deeply and build vocabulary. For example, ask “What do you think will happen next?” or “How did you figure that out?” See [A Guide to Asking Open-Ended Questions](#) for more examples.¹⁶
- ▶ Explore [STEMIE’s Learning Trajectories](#) to understand how STEM skills grow over time and how to support them in everyday activities.²⁴
- ▶ Use [A Guide to Dialogic Reading](#) to talk with children about STEM topics during story time. This method also offers ways to include children with disabilities.⁴⁷ To get started, check out [Storybook Conversations](#) for tips on how to add STEM words and ideas into shared reading time, a research-backed way to support early language and thinking.³⁶
- ▶ Looking for books about STEM? Check out STEMIE’s [Curated List of Books](#) with STEM themes for young children.⁴⁴
- ▶ Read our Blog: [Mythbuster Series #2](#) to learn how reading and STEM go together, how dialogic reading supports all children (with and without disabilities), and how to include math in everyday life at home.⁴⁵
- ▶ Read our Blog: [What Predicts Success in STEM... and School?](#) to learn how to build STEM skills across all areas of learning.⁴⁸



A GUIDE TO...

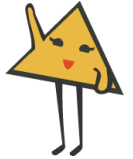
ADDRESSING STEM MYTHS

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MYTH: You can always tell when a child has a disability.



FACT: Not all disabilities can be seen.



Some disabilities affect the body, language, thinking, or brain, but they might not be easy to see. These are often called ‘invisible’ disabilities. Some examples are developmental language disorders, autism, hearing loss, vision loss, and attention-deficit disorders.⁴⁹

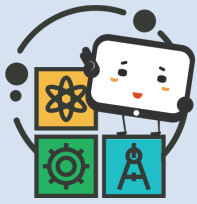
By getting to know each child’s strengths and interests, adults can respond in ways that support the child. They can make adaptations to activities, materials, or the environment so that every child has an equitable opportunity to take part in learning and feel included.

SOURCE:

49.[Reimagining Special Education for Those With Invisible Disabilities](#)

WHAT CAN I DO?

- ▶ **Think about your own beliefs and assumptions** about children with disabilities. Children with “invisible” disabilities or behaviors that make learning harder may need adaptations or extra support to take part in STEM learning opportunities.
- ▶ Access [A Guide to Adaptations](#) to learn about the different kinds of support children with disabilities might need to be fully included in STEM learning opportunities.³
- ▶ Check out [A Guide to Teaching Practices](#) for more ways to help all children join in and learn during STEM activities.⁴
- ▶ Use [A Guide to Dialogic Reading](#) to talk with children about STEM topics during story time. This helps young children with disabilities build thinking and learning skills.⁴⁷ To get started, check out [Storybook Conversations](#) for tips on how to add STEM words and ideas into shared reading time, a research-backed way to support early language and thinking.³⁶
- ▶ Watch videos from STEMIE and the Kansas Deaf-Blind Project to learn how to [adapt storybook reading](#) for children with vision loss.⁵⁰



A GUIDE TO...

ADDRESSING STEM MYTHS

Cultivate STEM learning opportunities for ALL young children throughout their daily routines and activities in any environment.

MYTH: Children with disabilities can't do STEM. They will always need help.



FACT: All children—no matter their ability, culture, race, gender, age, or family income—can learn and succeed when adults set high expectations and provide appropriate supports.



All young children can learn, and they learn best when adults believe in them and expect them to do well. Research shows that when children with disabilities are included in learning with their peers and given the support they need, they can grow, learn, and reach their full potential.

All children—no matter their ability, including invisible disabilities, culture, race or ethnicity, including children from minoritized groups, gender, age, including infants and toddlers, or family income—can take part in STEM learning. Children are naturally curious and eager to explore the world around them. They can build strong STEM skills when adults provide fair, inclusive, and positive learning experiences.

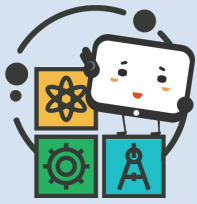
Children with disabilities can enjoy STEM learning at home, at school, or in the community when they get support from caring adults. When adults set high expectations for STEM learning, children are more likely to believe in themselves and feel confident in what they can do.

SOURCE:

40. [STEMIE Mythbuster Series #1](#)

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What Can I Do?





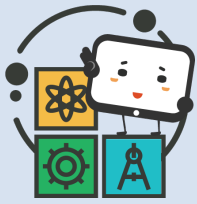
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WHAT CAN I DO?

- ▶ **Think about your own beliefs** about culture, race, and ability, and be aware of unfair systems that continue to keep some children from getting equitable opportunities to learn.
- ▶ **Follow your child's lead** by supporting what they enjoy and what they're good at.
- ▶ Think about how you can adapt the space, materials, or teaching to make sure all children can join in and enjoy STEM learning. For more tips, see [A Guide to Adaptations](#)³ and [A Guide to Teaching Practices](#).⁴
- ▶ Watch STEMIE's [Why Inclusion](#) video series to learn why including all children—those with and without disabilities—is important and how it helps everyone grow and learn together.¹³
- ▶ Explore STEMIE's curated book list about [innovators with disabilities in STEM](#).⁴⁴
- ▶ Visit [STEMIE](#) to find professional learning and helpful guides.⁵¹
- ▶ Watch the [STEM Starts Now](#) video to learn why STEM is important for children with disabilities.⁵²



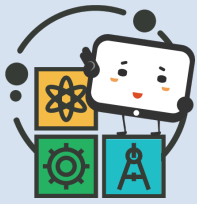
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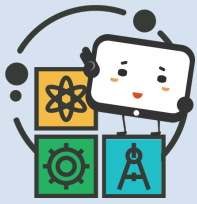


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