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Description automatically generated with medium confidenceWays to Help Students in Math if You’re Not a Math Teacher

**Tip Sheet**



**What to do:** Work with school-day staff to familiarize yourself with current approaches for teaching math as well as strategies for helping students with their math assignments. You want to make sure you understand terminology and concepts. Then, use these strategies and tips to support students.

**Why it matters:** Students pick up on our verbal and nonverbal clues more readily than we think. We don’t want to pass along any uncertainty or anxiety to them. Having strategies and resources ready to meet math challenges is a significant first step to success.

# Methods to Reduce Math Anxiety

**Do You Have Math Anxiety? Find Out!**

If you have math fears, you’ll want to make sure you don’t pass them on to your students. Use the **Math Anxiety Self-Assessment and Autobiography** to gauge your level of math anxiety.

Here are some ideas you can use to confront math myths, fears, and stereotypes to help you and your students manage math anxiety and build confidence in their ability to learn math. Anyone can use these strategies. It just takes awareness and time to put them into action.

## But I’m Not a Math Teacher!

You don’t have to be a math whiz to help students! If you work or volunteer in an out-of-school time program, here are some things you can do:

* Be prepared for the math concepts you’ll work on with students. Your confidence (or anxiety) will carry over to them.
* Work with school-day teachers to provide targeted homework help and reinforce key concepts through games and other high-interest activities.
* Learn about the Math MUSTs (an easy acronym for messages, understandings, skills, and thrills) and look for ways to use these strategies in your program.
* Use specific ideas and resources that can help such as the [Khan Academy’s free online courses, lessons, and practice tests](https://www.khanacademy.org/) and [youcubed](https://www.youcubed.org/resources/jo-boaler-enquiry-based-learning-mathematics/).
* Draw on your life experiences in using math for hobbies, personal goals, and everyday tasks like comparison shopping and cooking. You know more than you think you do!
* Help students see ways they already know and use math every day, without realizing it.
* Help students make connections between concepts such as the link between addition and multiplication or the relationship between fractions, decimals, percents, and ratios.
* Look for patterns in math — they may be in shapes, colors, and numbers. Seeing the patterns can sometimes make solving problems much easier.
* Provide fun activities to help students and families experience math success and connect math to their goals and interests. Positive experiences with math can help rewire students’ brains and short-circuit math anxiety.
* Encourage students to explain how they arrived at a correct response. The other students are likely to learn something, and you might, too!
* Enlist the enthusiasm and know-how of community volunteers and partners to provide support for math.
* Give yourself a pat on the back for seeking additional guidance. Two pats if you discuss what you learn about math anxiety with a colleague!

# 10 Common Sense Things Your Math Teacher Probably Forgot to Tell You

Share one of these ideas with students when the time is right and see how they react.

* Math is supposed to make sense.
* There’s often more than one way to solve a problem.
* Creative people use math.
* Math is about finding patterns and making connections.
* Math symbols are a shorthand way to communicate ideas (e.g., fire + hand = burn).
* Using manipulatives, pictures, and drawings helps you visualize quantities and relationships.
* People use math ideas in a variety of ways at school, at work, and in everyday life.
* Mistakes are learning opportunities.
* Discussing and collaborating with others on math isn’t “cheating.” It’s a good way to learn, and it prepares you for the workplace, where teamwork is expected.
* In real life, there’s no “answer key” with the correct answer to every question.

# Three Things to Know About Math Education Today

Maybe it’s been years since you took algebra and you’ve heard that math instruction has changed, but you’re not sure what’s different. You don’t need a crash course in math education to help students with math anxiety, but your uncertainty might make you anxious or hesitant to talk with teachers and others about math. Don’t worry. Here are the main things to know:

1. Graphical user interface, website

   Description automatically generated**There’s more focus these days on teaching math concepts (“how math works”) instead of just teaching formulas (“how to work math problems”).** Memorizing formulas isn’t a bad thing, of course! But researchers and educators have found that students are better able to tackle new problems — whether in daily life or in math class — if they have a conceptual understanding of math rather than relying mostly on memorized formulas if they don’t understand why and how those formulas work. Math teachers try to help students go beyond learning math *procedures* like division to also understanding the *concept* of division. They encourage students to talk and write about their problem-solving approach as a way to clarify their thinking, learn from mistakes, consider various problem-solving methods, and build conceptual understanding.
2. **Each State decides what math standards to use, and these standards guide teaching and assessments.** State math standards tell teachers what students should understand and be able to do at each grade level. Schools use the State standards when they decide what to teach, and State math assessments are aligned with the standards. You don’t have to memorize the standards to help students. But it does help to be familiar with the standards so you know what school-day math teachers mean if they say a student is “not meeting standards.”
3. **Math (and math education) has its own vocabulary.** Suppose a math teacher emails to say, “if your program can help with students’ productive disposition, it would help.” Would you know what the teacher means? You could always ask or look online. Or you could look in the Math Glossary (available in the Learning Recovery Math Toolkit on the [21st CCLC NTAC website](http://www.21stcclcntac.org)), which defines *productive disposition* as “the inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy.” So, the math teacher hopes you can find ways to make math seem interesting, relevant, and doable. Use the glossary as a quick reference. Then follow up with the math teacher to make sure you understand the request and get any other information and resources you may need.

*Do not worry about your difficulties in mathematics.  
I assure you mine are still greater.*

— Albert Einstein

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