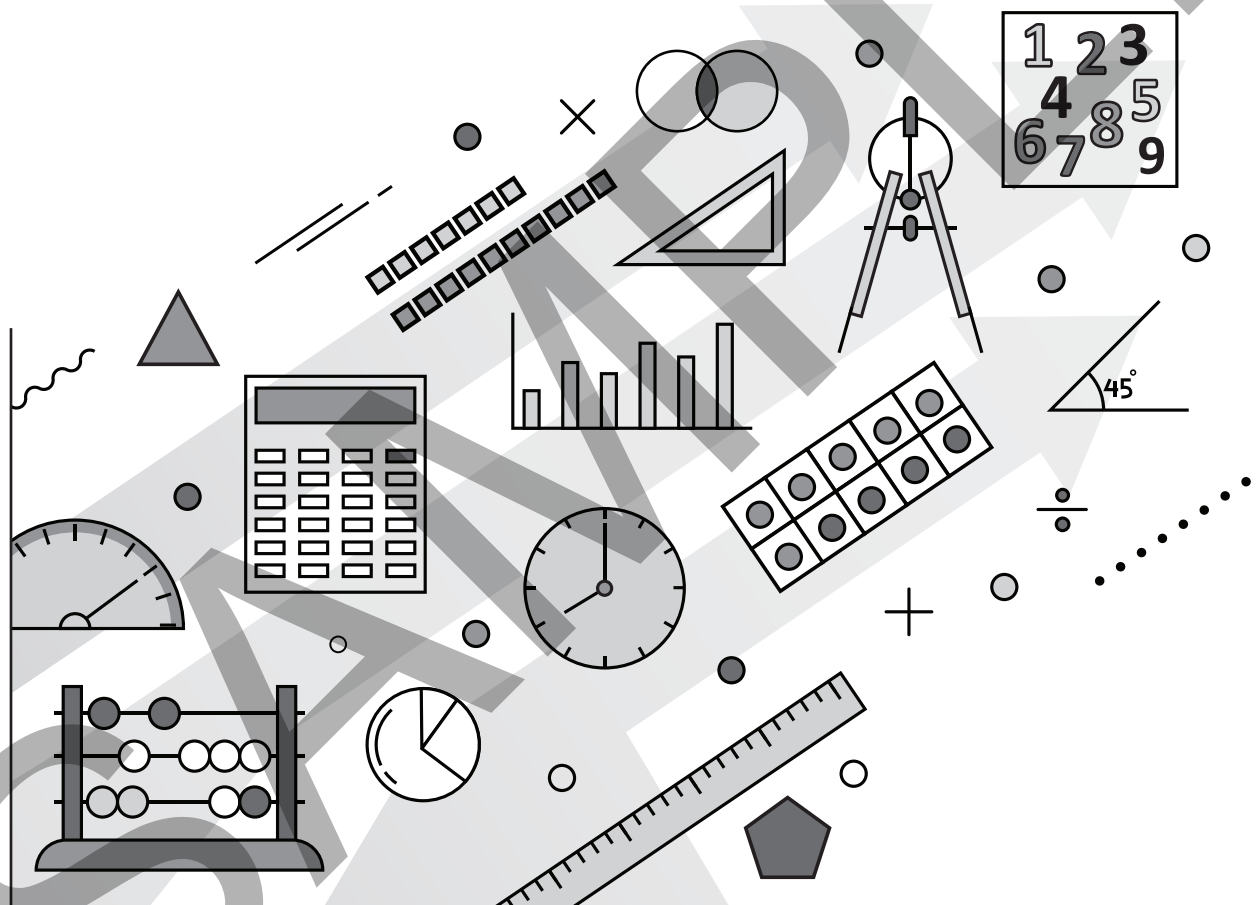


# Let's Do the Math

Engaging Families in Your Mathematics Program



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## Making the Case for Family Involvement With Math

According to the U.S. Bureau of Labor Statistics, jobs in the fields of science, technology, engineering and math (STEM) are expected to grow 10.8 percent between 2021 and 2031. The Bureau also reports that jobs in healthcare, an industry that relies heavily on STEM skills, are predicted to grow 15 percent by 2029. In contrast, the projected growth rate for all other careers is just 4.9 percent.<sup>1</sup>

However, only 20 percent of high school graduates are prepared for college coursework in STEM. And during the past 15 years, students in the U.S. made up only 10 percent of the world's science and engineering graduates.<sup>2</sup>

Not only is math one of the STEM subjects—it's also an essential component of all the other STEM subjects. And STEM and healthcare workers aren't the only ones who use math. Nearly every job requires math. Furthermore, math is important in everyday life, whether we are budgeting, understanding data in the news, or managing our time.

Clearly, preparing students to fill the jobs of the future is an important task for educators. But educators can't do it alone. That's where families come in. Research shows that family engagement in math improves students' math grades and test scores, as well as their confidence in math.<sup>3,4</sup> Specifically:

**Only 20 percent of high school graduates in the U.S. are prepared for college coursework in STEM.**

### Positive school-home partnerships improve math achievement

- **Family engagement activities**—such as parent workshops, math activities in school, math nights, classroom newsletters and math progress reports—improve family support for school and family partnerships. This results in a higher percentage of students proficient in math on state achievement tests.<sup>5</sup>
- **Math homework that involves demonstrating** and discussing math skills with a family member is associated with higher percentages of students scoring at or above proficiency on standardized math achievement tests.<sup>6</sup>
- **The use of game packets and other math activities** by families with students at home is associated with higher percentages of students attaining proficiency on math achievement tests.<sup>6</sup>

### Family engagement reduces math anxiety

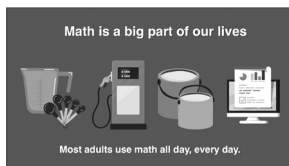
**Math anxiety** has long been demonstrated to negatively affect student achievement. Family support of math learning at home reduces math anxiety and is associated with improved student math performance, particularly on more difficult math such as word problems and algebraic reasoning.<sup>7</sup>

## Presenter's Script

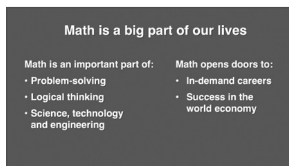
This presenter's script provides suggested wording if you wish to personally narrate the *Let's Do the Math: Ways You Can Build Your Child's Math Skills* PowerPoint presentation found in the online portal. You are, of course, free to modify the script to make the words your own, adding or deleting information as you choose. You may make changes in the presentation as well. Please note, however, that under the resource kit license, you may use the modifications only for your own school presentation use.



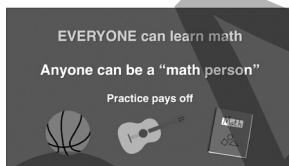
**Slide 1**  
(Opening slide, no narration.)



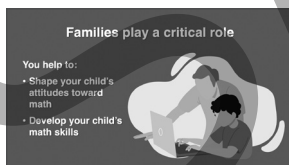
**Slide 2**  
Thank you for being here today and for taking an interest in your child's school success. Math is a big part of our lives. **[+]** Most adults use math all day, every day. Whether we're **[+]** preparing a recipe for our family, **[+]** filling the car with gas, **[+]** figuring out how much paint we'll need for a project around the house or **[+]** completing a report at work, we're using math.



**Slide 3**  
Math is important for our children as well. **[+]** It teaches students how to solve problems **[+]** and think logically. **[+]** Also, math is the basis for understanding many other subjects, including science, technology and engineering. **[+]** And when students leave school, math opens doors to many **[+]** satisfying and well-paying careers—careers that will be **[+]** important if our country is to remain competitive in the world economy.



**Slide 4**  
Everyone can learn math. But sometimes, students feel discouraged or anxious when they struggle with a math concept. And they decide they're just not good at math. The truth is, **[+]** anyone can be a "math person"! **[+]** Practice pays off, too. Just as musicians or athletes practice their skills every day, so must students who are learning math.



**Slide 5**  
That's where you play such an important role. As a parent, you **[+]** help to shape your child's attitudes about math. **[+]** You can make sure your child develops the skills and attitudes that are needed to be successful in this critically important subject.



## Invite Families to Your Math Event

Here is a sample invitation you can send to families inviting them to attend your math event or any meeting that highlights the importance of having strong math skills. This will be an opportunity to discuss ways you can work together to ensure their child's math success. A customizable version of this resource, which you can adapt to your needs, is available in the online portal.

(School Name)

Dear families,

Experts agree that having strong math skills is critical for school success. And in today's competitive global economy, it is more important than ever for students to have a solid foundation in math. We want your child to be successful and we're proud of the math program we are implementing at our school.

Please join us at our upcoming Family Math Night. You'll have an opportunity to enjoy fun, hands-on activities with your child. We will also share strategies for boosting those important math skills with simple activities you can do with your child at home.

You play an essential role in your child's school success. With your support, we can help your child discover the excitement of math and achieve academic success.

We look forward to seeing you!

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Place: \_\_\_\_\_

Sincerely,

## Math Is All Around Us

We all use math every day to help us make sense of the world around us. Even very young children are pretty impressive little mathematicians. They use geometry to recognize the shapes of a stop sign, a building block or a slice of pizza. A great way to showcase how your students are learning and practicing math is to hold a family math night that explores the math in your surroundings.

### Get the word out

- **Send out invitations and emails.** Distribute flyers and post posters. If you will be highlighting the math found in specific locations in your community, such as the grocery store or post office, try to post information there as well.
- **Have students design personal invitations** to send home to families.

### Hold a planning session

- **Schedule a meeting to plan the event.** This type of event might work best conducted at grade level with presentations in each classroom.
- **Use “Math Is All Around Us” as a theme.** Have each grade present the math they find in one area, such as: in the neighborhood, at home, at the post office, at the grocery store, in nature, on the sports field, in meteorology, in winter, in the animal world, etc. There are endless possibilities.
- **Have each class present its discoveries,** such as: finding shapes and patterns around the neighborhood, using fractions in the kitchen, managing money while shopping, exploring Fibonacci numbers in fruits and vegetables, identifying spirals in spiderwebs or fractals in snowflakes, charting weather patterns and making predictions, using the concept of symmetry to examine leaves or create cityscapes. The math connection to our world is boundless.

### Start the event

- **Thank everyone for attending** and play the PowerPoint presentation included with this kit. Following a brief discussion, direct families to their classrooms where they can explore math in the world around them.
- **Use this opportunity to show families** how they can support math concepts in everyday settings. From looking at shapes of traffic signs to comparing prices at the supermarket, simple things families can do with their children every day reinforce important math skills.

### Continue learning

Thank families for supporting your math program and encourage them to continue to practice math at home. Check the family handouts in Section 6.



## Encourage Families to Do Math Every Day

Math is everywhere. And when families involve their children in doing everyday math at home—calculating expenses, figuring out time needed for travel, dividing a dish into equal portions—the kids learn that math is an essential part of life. Motivate families to do math every day with their children by sending home this log. A customizable version, which you can adapt to your needs, is available in the online portal.

(School Name)

Dear families,

We're doing a class project to discover how many ways we can use math in our daily lives. We need your help! For a week, help your child find opportunities to use math at home. The possibilities are endless—measure recipe ingredients, graph the colors of cars in a parking lot, look for patterns, estimate how much popcorn will fill the bowl. Please have your child fill in this log and return it to school next Monday.

Remember, math is everywhere!

Thanks!

Ways We Used Math at Home	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	



## Use a Variety of Platforms to Reach All Families

Families are more likely to get involved when they are aware of what's happening at your school, and of ways they can help their children at home. Here are ways to make the most of your school website, parent portal, social media platforms, email and text messaging app to communicate the importance of math.

### Your school website

If a family has never been to your school, your school website may be the first point of contact. Make sure it's up to date and easy to navigate. To engage families with your math program, post:

- **Parent tips.** Families want to help their children, but they may be uncertain about what they should be doing to help with math. Tips about supporting homework, motivating math learning, relieving math anxiety and doing everyday math at home will equip families to actively participate in their children's math education. Use the tips found on the family handouts in Section 6, or the eTips directly following these pages.
- **Math-related articles.** Post articles from your newsletter, such as those in Section 7, or have students or volunteers write articles about the math events held at your school or district. You can also share links to other published articles about math.
- **Links to helpful math websites and games.** Encourage students to go online to look for help solving homework problems or learning concepts. And don't forget the fun! Link to games they will want to play on their own or with family members.

### Class websites

Families look at your website for one reason: to find information that concerns their children. Encourage teachers to create—and update—class websites so families know what is going on in the classroom. Consider including:

- **Information about the curriculum.** A class website is a great place to explain to families the benefits your curriculum offers their children.
- **Homework.** List all upcoming assignments, and provide digital copies of handouts if possible. Definitions of the math concepts and vocabulary words will prepare families to support their children's learning. See the sample "What's New in Math" chart in this section.



# Persistence: The Key to Math Success

It's sometimes easier to give up on a tough job than it is to push through and complete it. However, giving up is not going to get your child very far in life—or in math! Successful students don't quit when math gets difficult. They know that they must persist until they have solved the problem. Here are some ways to help your child develop the persistence needed to succeed:

## Boost self-confidence

Show that you believe in your child's math ability by saying things like "That math homework looks challenging, but I know you'll figure it out." Your confidence will rub off on your child.

## Notice progress

Praise your child for working hard—not just for the final result. Say, "You're really coming along with your math homework," and "That wasn't easy, but you worked until you finished!" Your praise and acknowledgment will encourage your child to keep going!

## Turn mistakes into lessons

Children learn through trial and error. They try something, figure out what they did wrong, try again, do a little better and try again ... until they get it right. That's how your child learned to talk, walk and write, and it's the key to learning math, too!

So when your child makes a mistake on a math test, ask, "What might you do differently next time?" "What did you learn that can help you in the future?"

## Be a role model

Let your child see you persist when things aren't easy. Don't put off challenging tasks at home or work. Instead, talk to your child about how you are going to accomplish them. Say things like, "Today, I am going to work until I get this project finished." Then keep your word and actually finish it!

## Encourage goal setting

Working toward goals can help your child persevere past any obstacles. To develop achievable goals:

- **Ask about your child's goals for math.** *I want to score above 85% on every math test this quarter.*
- **Ask what your child would need to do to achieve that goal.** *I should spend more time on my math homework and ask the teacher for extra help.*
- **Write down the steps your child plans to follow.** *I will spend 20 minutes every night on math and I will stay after school once a week for extra help.*

## Celebrate success

When your child finishes a challenging task, do something special to celebrate. Go to the park, play a fun game or cook a special dinner together. Remind your child that persistence was the key to success!



## Offer Tips to Families of Math Strugglers

When a student struggles in math, families often panic. They feel frustration and bewilderment because they want to help their child, but they aren't sure what to do first. Reassure families and show them the steps to take to get their child back on track.

### Your child is struggling in math—now what?

If your child is one of many students who struggle with math, don't panic. By working closely with the teacher, you'll be able to get your child back on track and on the way toward math success. Just follow these three steps:

- 1. Identify the problem.** Talk to your child's teacher. Together, try to figure out exactly why your child is struggling in math. Does your child need to brush up on math facts? Practice a specific math process or concept? Slow down and double-check work to avoid careless errors?
- 2. Make a plan.** Once you and your child's teacher have identified the problem, it's time to create a plan of action. Discuss:
  - What you can do at home.
  - What support is available at school.
  - When you should touch base again.
- 3. Be supportive.** As your child works with you and the teacher to improve math skills, don't overlook the importance of being supportive. Be sure to handle matters privately and be positive. Let your child know that it's important to keep trying, and that you believe your child will succeed.

*If your child continues to struggle in math despite your and the teacher's best efforts, ask what the next step is. It's important to rule out learning disabilities and other problems.*