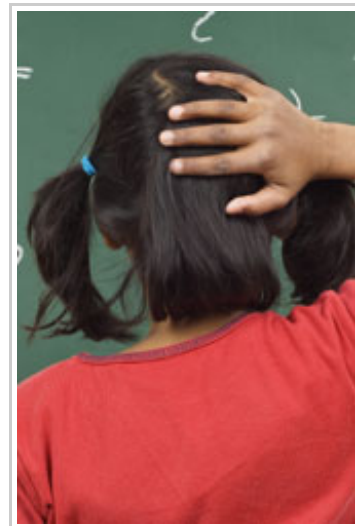


How to Help Every Child Find Success in Math

Many students believe that math is an inherited ability – either they have the math gene, or they don't. But recent research shows that inborn talent might not be as important as we think. In the long run, the most successful students are often those who work the hardest, not those with the highest IQ's. These students believe that that perseverance, not an innate gift, is the key to achievement.



In her book *Mindset, The New Psychology of Success*, Carol Dweck argues that a positive mindset is what makes some students push themselves when others give up. Students with a “fixed” mindset believe that they were born with a certain set of talents. They see challenges as a sign that they've reached the limit of their natural ability, and they stop trying. But students with a “growth mindset” believe that there are no limits on their potential, and view challenges as a chance to learn and improve. They know that their intelligence can be built through experience and effort, and are not held back by the idea of inborn restrictions.

Geoff Colvin delivers a similar message in his book, *Talent is Overrated*. He demonstrates that success is almost always the result of what he calls “deliberate practice,” a concentrated effort to improve one's skills through focused effort. Inborn talent might make a difference when a subject is first tackled, but years later it's the hard workers who are the most successful. Math teacher Kim Callan agrees: “It is rare for a hard-working student to fail my class.”

Parents play a key role in cultivating a child's mindset. Without positive role models, children can succumb to the idea that if something's not easy, it's not worthwhile. Here are some **DOs** and **DON'Ts** about helping your child learn that math, like life, is less intimidating if we cultivate the right mindset.

1. **DO** tell your child that anyone can succeed in math. Remind him that even Einstein struggled at first: when he was nine, his teacher told his father that no matter what profession Einstein chose, he would never succeed.
2. **DON'T** make excuses for your child. I've heard several parents say, in front of their children, “I was never any good at math.” That gives the children permission to give up, to believe that math is beyond some people's reach.
3. **DO** praise your child when you see hard work pay off. Use specific examples, like, “You really earned the improvement you made on last test. You did an extra practice test and worked with a study partner.” This reinforces the idea that he is in charge of his own success, and emphasizes the importance of improvement over perfection.
4. **DON'T** compare your child's performance to her peers. This sets up unrealistic measures of success, and takes away from the message of personal improvement.
5. **DO** use failure as a chance to learn. If your child does poorly on a test, talk about a time when you struggled. Recount what steps you took to do better. Help him make a study plan for the next test: make flash cards, visit the teacher to review quiz mistakes, and raise his hand when he doesn't understand the answer to a homework problem.
6. **DON'T** go crazy if he fails a test: you'll miss your chance for a teachable moment. Remind him that challenges are our best chances to learn and grow. See if he can make up the test or do test corrections for extra points. Encourage him to let go of the past and focus on the next opportunity to work hard and improve.
7. **DO** hire a tutor if things get hard. Colvin shows that an important part of deliberate practice is having an experienced mentor to keep a student on the right course. Math tutors know how to teach and practice time-tested problem-solving techniques. Look for a tutor who can help your child but also encourages independent effort.
8. **DON'T** get into a homework battle. If your student enjoys working with you, then by all means keep it up. But if studying together causes a fight, it's time to bring in a professional. Otherwise, the interpersonal

tension will get in the way of learning. If you can't hire a tutor, see if your student can work with the teacher after school.

9. **DO** make sure that your child is placed in an appropriate level of math. Work with your child's teacher to find the class that best corresponds to your child's readiness. Children thrive when they are placed at a level that is neither too difficult nor too easy. "Putting a child in a math class that is too hard is like throwing a non-swimmer into a pool and asking them to do laps," says Callan. "If you don't want them to drown, you first need to teach them to float and tread water."
10. **DON'T** insist that your child be placed at a higher level than the teacher recommends. Many children are being pushed by their parents to take advanced classes like Algebra at an age where their brains are not developmentally ready. In those cases, no amount of hard work can make them successful.
11. **DO** talk about the importance of character. Find occasions to praise your child's resilience, curiosity, and persistence. These are qualities that really drive success, in math class and in life.
12. **DON'T** dwell on your child's natural intelligence. If you tell her she's naturally "good" at math, she'll feel bewildered when things do eventually get hard. Conversely, if you tell her she's "not a math person," she'll have a hard time overcoming that mindset. It's best to avoid all labels and focus on effort instead.
13. **DO** look for examples of famous people who refused to give up. For instance, Michael Jordan was cut by his high school varsity basketball team. Undeterred, he got up at 6AM every day to practice on his own. When he made his college team, his coach remarked was struck by how he worked harder than anyone else. Basketball didn't come easily to Michael Jordan: he earned every point he ever made.
14. **DON'T** miss the chance to speak up when you hear a story about a "natural talents." For instance, if you hear someone mention Serena Williams' or Mozart's inborn genius, be sure to mention the thousands of hours of practice they put in with their fathers from a very early age.

Having the right mindset is critical to success. Children need to believe in their ability to overcome challenges through concentrated effort. If you place your child in the right math class and encourage her to work hard, there's no limit to what she will be able to accomplish.