



***“Why do I have to
learn math anyway?”***

**3 Ways to Explain the
Importance of Math to
Your Children**

YUP STUDENT SUCCESS TEAM

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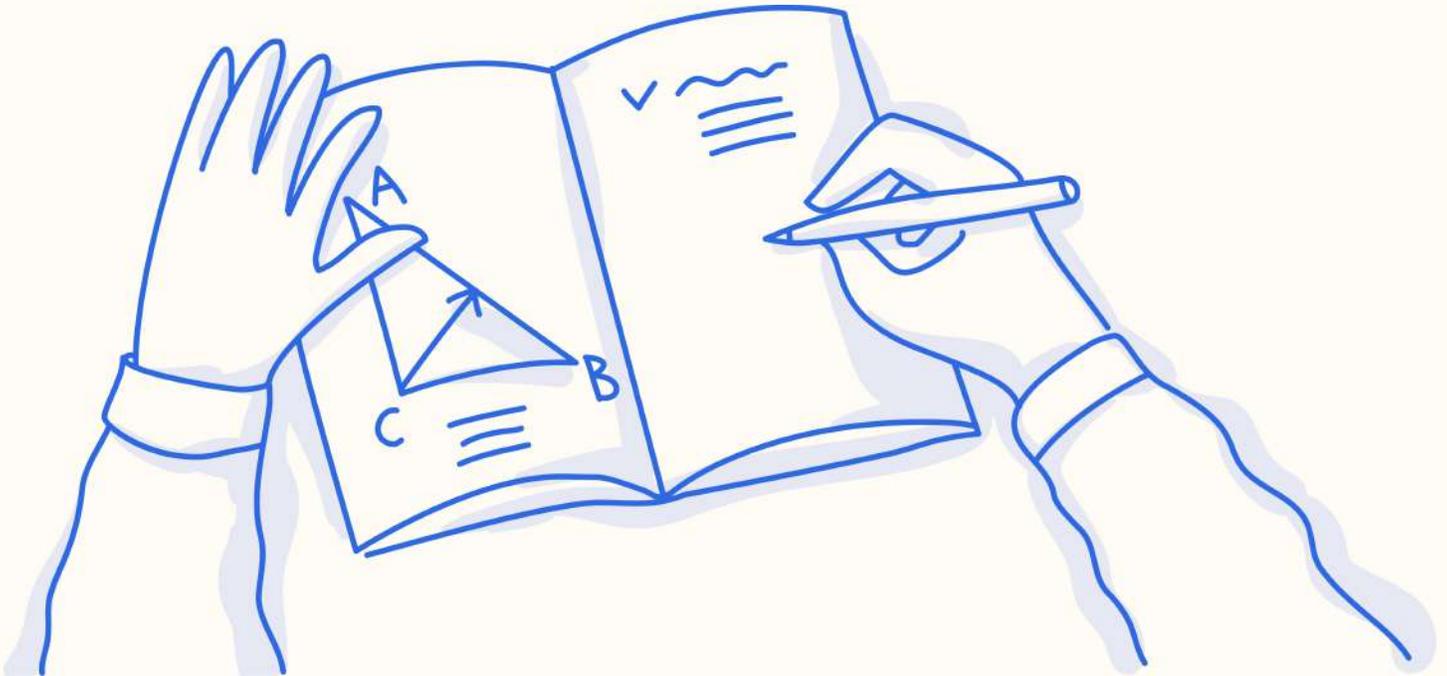


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EXECUTIVE SUMMARY

Parents get hard questions from their children every day. This white paper will outline several responses to one of them: “*Why do I have to learn math anyway?*” Our goal is that parents will be able to use these responses to help their children feel more motivated and confident when approaching math. In addition, this paper will share a few of the ways that Yup’s tutoring app can aid in the development of these important math skills.

Yup is an education technology company that provides students with access to expert math tutoring right when they need help, over the student’s smartphone or tablet. Yup is deeply invested in the long-term academic success of students, whether they need a lot of support or a supplementary tutoring resource.

INTRODUCTION

Let’s go back to when you were in school. Picture it, you’re sitting in your middle school algebra class. Your teacher has just assigned two pages of math problems from your textbook for homework. You’ve never really been a “math person.” In fact, let’s say you like language arts or art more. “*Why do I have to learn all of this*

math, anyway?” you ask your parents later that night while finishing your problems at the table.

This is still a common scenario for today’s students. They’re told they have to take math classes in middle school, high school, and typically in college as well. But, why? Parents are left to come up with their own answers. “*You need math for your career,*” or “*You need math to get ahead in life!*” These are accurate, but they could do with more context and specifics.

What will you say when your child asks you why they have to learn math? Yup has you covered.

3 WAYS PARENTS CAN ANSWER THIS QUESTION

1. “**Math improves your critical thinking!**”

Math requires thought, problem-solving skills, and the ability to consider many different factors¹. While some math learned in traditional school settings isn’t always utilized in the workplace², it does offer plenty of opportunities for students to practice the skills necessary to

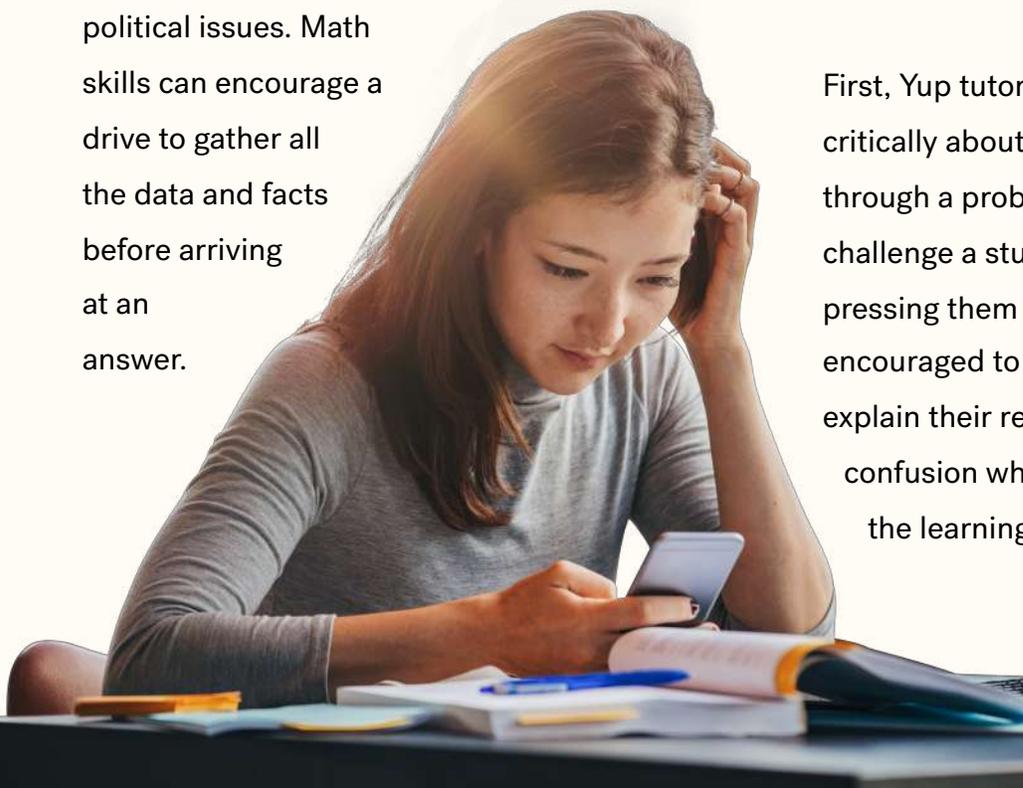


be better critical thinkers. Many school districts today have adopted a focus on STEM education and digital literacy. Young people who are exposed to STEM and digital literacy skills are better able to pose and solve problems about the world, collaborate with others to find solutions, and communicate in a way that articulates their opinions and values. They're better able to identify a problem clearly and then apply sound methods to synthesize a solution.

2. "Math sets you up for independence and adult decision-making!"

Students more proficient in math are better prepared to budget finances, make informed purchases, and save for the future. These skills are essential for independent adult life.

Since math requires so much critical thinking, students will also be better able to participate in discussions around social and political issues. Math skills can encourage a drive to gather all the data and facts before arriving at an answer.



Parsing through and considering different options and approaches helps students prepare for fruitful and informed discussions with others.

3. "Math will grow your confidence in other areas!"

Students who are taught to embrace their mistakes in math develop confidence³. Instead of seeing these mistakes as failures, students take advantage of them as learning opportunities. When students feel confidence in one academic area, they can apply that same feeling of mastery and accomplishment to other subjects and other parts of their lives.

WHY YUP

Yup's math tutoring app deliberately facilitates opportunities for students to develop their decision-making and communication skills.

First, Yup tutors promote students to think critically about their work. Tutors guide students through a problem, asking questions that challenge a student's thinking and gently pressing them for knowledge. Students are encouraged to show their work at every point, explain their reasoning, and articulate their confusion when tutors are not able to bridge the learning gap. Students consider different

criteria in order to make a thoughtful decision around a problem. Tutors don't simply tell students which method to use, but work with students to identify different strategies.

Yup also understands that students appreciate independence. The very nature of Yup's app provides students with this, as they can choose when and where to access tutoring. They don't have to schedule their time around a tutor or when their parents are able to help them. They can become involved in extracurricular activities, get home, and open up Yup to get full support on their math homework.



With independence comes the ability to explain concepts to others. Yup tutors encourage students to explain their thought process during sessions. Tutors are evaluated on whether they pull information from a student. Our tutors are evaluated on how successfully they can pull information from students and gauge their understanding of a concept.

Students are better able to explain concepts accurately if they are confident about their level of knowledge on a particular subject. To build confidence in students, Yup practices a Growth Mindset approach to tutoring—that is, the belief that abilities and skills can be developed with determination and practice.⁴ Yup tutors understand that there is no such thing as innate ability, and that some students need more practice and support than others to master a subject. They develop Growth Mindsets by using positive language with students. For example, instead of “*that’s incorrect*”, Yup tutors might say “*you’re on the right track, why don’t we try this?*”

CONCLUSION

Whether your child is in elementary school or college, there are a slew of reasons why it’s important for them to understand math. We hope that this paper helps parents begin discussions with their children about the importance of math in critical thinking, independent decision-making, and building more confidence.

CITATIONS

¹ Koeno Gravemeijer, Michelle Stephan, Cyril Julie, Fou-Lai Lin, & Minoru Ohtani, “What Mathematics Education May Prepare Students for the Society of the Future?”,

*International Journal of Science and Mathematics
Education (2017) 15(1),105-123.*

² Ibid

³ Noah Heller, "How can educators help students gain confidence in mathematics and see themselves as “math people”?,” *Digital Promise*, August, 2019.

⁴ Dweck, Carol S.. *Mindset: The New Psychology Of Success*. (New York : Ballantine Books, 2008)