

# Make Math your Happy Place!



Grades 4-12



**+1 MATH**  
puts millions of  
questions and solutions  
at your fingertips.

Get your game on with +1Math App for Desktop, Tablet and Mobile Phone

## +1 MATH Executive Summary

There is a math crisis in this country:

- Only 26% of U.S. 12th grade students are proficient at grade level<sup>1</sup>
- The U.S. currently ranks 30th internationally in math proficiency<sup>2</sup>

While we can debate its cause, we can't deny that the United States has a math problem.<sup>3-6</sup>  
The question now is how to fix it.

### WHY IT MATTERS

Math proficiency is critical to our children's' futures as the STEM-oriented job market grows. Jobs in computer programming, UI and game design, mobile communications, architecture, building, and all of the sciences, among others, require mathematical prowess. U.S. students are falling behind the competition, and as the marketplace for talent becomes global, companies can easily search elsewhere.

Math proficiency needs to be addressed early in a child's education. Since math builds on itself, students who struggle early usually continue to struggle. Learning math is similar to learning a language: without solid foundations, everything afterwards is unstable.

### WHY STUDENTS STRUGGLE

One of the leading reasons our students struggle so much with math is the way the subject is taught. This is not the fault of teachers or administrators, but rather a breakdown in the system.

Most students in the U.S. learn math in a linear fashion. For example, students are shown how to do specific percent problems. They practice on those exact questions; then they take a test with only questions they've seen before. Next, students move on to ratio. They're shown how to do certain ratio problems, assigned homework with only those questions, and then given a test with only problems they've seen before.

**This testing technique doesn't actually teach kids how to do math: it teaches them how to parrot specific operations.** Students never learn how to use their knowledge, so they're unable to apply it to new types of questions. This causes a lot of trouble on standardized tests, as well as on national and international tests of proficiency, because standardized tests are made up of questions designed for students to apply their knowledge to new sets of problems.

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## WHY STUDENTS STRUGGLE *continued*

In addition, students never learn how math works together – for example: the relationship between ratio and percent. Students instead learn math in a piece-by-piece fashion that gives them the impression that math is random, or at best has unlimited rules for unlimited, disconnected types of problems. This memorization-type of learning is easy to forget, as we can attest to from preparing students for standardized tests for over 16 years. Students who see how math works together can easily adapt to new types of questions. Students who see math as disconnected struggle mightily. The difference between a linear and a holistic understanding of mathematics is akin to the difference between looking at a maze from inside the maze versus looking at a maze from up above it. There's just no comparison.

## MEETING KIDS WHERE THEY ARE

Kids love technology. Ask 100 parents and 99 will tell you that their children just want to be online all day -- whether it's on a smartphone, a tablet or a computer. Whether this is good for kids or not is a debate for another time. It is, without question, the reality.

Knowing this, it's important to meet kids *where they are*. If we want them to learn math, we need a program they can do *online*, that's at least partly gamified and appealing to their sense of play.

There is a very popular app now called *Trivia Crack*. Students are obsessed with this game and spend their time battling their friends over questions on science, history, sports, entertainment, geography, and art. There's no big secret to this game, but it's brilliant because it meets students where they are, and the result is a slew of kids learning about art and geography.

## OUR PROGRAM: +1 MATH

The +1 Math desktop and mobile app follows this same formula. Our goals in creating +1 Math are:

- to create a gamified, skill-building program kids will want to play
- to give parents and teachers an easy tool to use with kids
- to provide students with a mastery of math that will pay off in school, on standardized tests, and in real life

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## Personalized Skill-Building with +1 MATH

- **+1 MATH is not a teaching tool.**

We know there are good teaching tools out there. We also know that there are plenty of good math teachers in schools across the country (as we said earlier, the problem with math is not the teachers). In fact, we've found resistance among some teachers for online teaching tools, as they fear that administrators will use them to replace experienced teachers and reduce salaries. What's more, it's clear that just teaching math to students isn't enough. Students use online teaching programs but still struggle. More is needed.

- **+1 MATH is a tool for mastery.**

With our program, a student will be able to enter any math exam prepared and confident. By using +1 Math, students learn valuable problem recognition and problem application skills: the two most important and overlooked qualities for success on standardized tests.

- **+1 MATH lets students, parents or teachers create personalized, multi-subject quizzes.**

Using the +1 Math program, a teacher can simply and easily create a personalized, 25-question quiz for a student in under a minute! Even class tests can be personalized. For example, if a particular student struggled earlier on exponents, and the class has moved on to ratios, the teacher can add two or three exponent questions to only that student's test, to make sure he or she has usable knowledge of exponents.

The program grades quizzes and gives feedback on students' strengths and weaknesses across any time period. This allows teachers, students, and parents to see what is working and what isn't.

- **+1 MATH has tens of millions of questions, across all topics and all levels for Grades 4-12.\***

Students can design quizzes to match their needs, without the guilt or shame that so often comes with feeling behind in a subject. The questions have hints and demand the types of application skills students need for standardized tests.

*\*4th – 8th grade will be released in 2016. 9th – 12th grade will be released the following year.*

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- **+1 MATH is Easy to Use.**

A parent or a student can create a multi-subject worksheet or quiz with 20 different types of questions at all different levels in under a minute. They don't need to hunt-and-peck and do one question at a time. A parent can create a worksheet for a child simply and quickly. Later, with the click of one button, the same parent can check his or her child's progress and results. With other programs, this just isn't possible.

- **+1 MATH is gamified.**

Students are given points, trophies and badges the more they practice, and they can use those points to "purchase" online objects to decorate their screen. If they want, they can compete against other students in their region or nationally to see how they compare.

## OUR COMPETITION -- WHAT IS MISSING

Our competition presents math questions in roughly the same way students see them in school. It's no surprise they produce the same poor results.

**+1 Math** presents problems *the way they will appear on standardized tests*. Our program helps students develop the problem recognition and application skills they need for true mastery of math. **+1 Math** also pinpoints exactly where students need help and gives them the questions they need to improve.

As professional tutors, we have the luxury of using the commercial math programs currently available and seeing why they're not having an impact.

*Khan Academy*, for instance, is a great teaching tool. If a student needs to learn probability, he or she can learn it there. The problem is that this knowledge doesn't become usable knowledge, and students often forget the material before their exams.

Part of the problem with *Khan Academy*, *IXL*, and *Mathdrills* is that these programs present students with one type of question at a time. Students want to practice ratio, so they click on a button and get a ratio question. They may get a worksheet of ten questions (in the case of Mathdrills), but these are all ratio questions. This helps students learn how to solve ratio questions *when they know that they're facing a ratio question*.

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## OUR COMPETITION -- WHAT IS MISSING *continued*

As mentioned above, the problem is that standardized tests and Common Core exams also test problem recognition and application skills. In fact, in our combined 40 years of teaching, we've found that the biggest problem students have on standardized tests is recognizing what type of problem they're facing! The most common wrong answer we see is a blank space and the response: "I don't know how to do this problem." And most of the time, they do know how to do it. They just didn't recognize it, because they have no experience with problem recognition.

We cannot overstate what a huge issue problem recognition is for math students. Always knowing what problem you're facing is similar to playing tennis against an opponent who always tells you where the next shot is going. It doesn't prepare you for the reality of the actual game or exam. The reality when this crutch is removed is what you would expect: a terrible wake-up call.

In addition, students need more to keep them interested in a math program. As we said earlier, for better or worse, kids love games and they love competition. Giving them a math program that delivers both will keep them engaged.

## Projections and Vision: Nationwide by 2025

We see **+1 Math** used as part of the standard curriculum at schools. This way, all students have unlimited practice, along with explanations and detailed feedback, right at their fingertips.

We know this will take time, so to begin, our goal is to get **+1 Math into 500 schools and in 100,000 students' hands by September of 2016**. With this grassroots goal in place, we can improve the percent of students proficient in math at grade level.

### BY THE YEAR 2025:

- **+1 Math** has expanded into schools nationwide
- The percentage of U.S. students proficient in math at grade level doubles
- The United States cracks the Top 10 in worldwide math proficiency

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## GRASSROOTS INVOLVEMENT

We see this program quickly “going viral” from student to student and parent to parent. Once parents see how helpful this program is and how easy it is to implement, they will want to tell other parents in their circle of family and friends to get it.

Helping students from low-income families excel in education and gain scholarships to college is another great reason for people to get involved.

## CAPITAL RAISE AND USE OF FUNDS

To create **+1 Math**, we need \$500,000. This covers coding, design, problem creation and sales for the first year. A rough breakdown is as follows:

- \$120,000 – Coding, Including Maintenance
- \$75,000 – Design and User Interface
- \$80,000 – Question Writing
- \$100,000 – Project Management and Customer Service (for two years)
- \$100,000 – Marketing
- \$25,000 – Server space

The program will start with questions for grades 4-8. We estimate that we’ll sell 10,000 copies at \$60/year, for a total income of \$600,000. After this first year, we’ll expand the program to include grades 9-12.

Within three years, we estimate our sales at 30,000 units, for a profit of over 1.5 million dollars.

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## Links and Reference Materials

- <sup>1</sup> [http://www.nationsreportcard.gov/reading\\_math\\_g12\\_2013/#/](http://www.nationsreportcard.gov/reading_math_g12_2013/#/)
- <sup>2</sup> <http://www.npr.org/blogs/thetwo-way/2013/12/03/248329823/u-s-high-school-students-slide-in-math-reading-science>
- <sup>3</sup> <http://www.theatlantic.com/education/archive/2013/12/american-schools-vs-the-world-expensive-unequal-bad-at-math/281983/>
- <sup>4</sup> <http://www.nytimes.com/2014/07/27/magazine/why-do-americans-stink-at-math.html>
- <sup>5</sup> <https://www.psychologytoday.com/blog/everybody-is-stupid-except-you/201211/us-math-achievement-how-bad-is-it>
- <sup>6</sup> <http://www.theverge.com/2013/12/3/5169722/us-students-lag-behind-math-science-oecd-pisa-report>
- <sup>7</sup> <http://www.prestigeprep.com>



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## Who's Behind the Program

### ELIE VENEZKY

Chief Education & Creative Officer

Co-founder of Prestige Prep tutoring company. 16 years teaching math and test preparation. Best selling author of *Test Prep Sanity*, *Test Prep Sanity for Students*, and *Hack Your Brain*. Venezky has prepared thousands of students for standardized tests.

### PHIL COHEN

Chief Financial & Strategy Officer

Co-Founder and CEO of Prestige Prep tutoring company. Over 20 years experience teaching and mentoring students, including leading Hadassah Young Judea, a national youth movement with 13+ regional offices throughout North America. He has a Masters in Social Work from The New School in New York City.

### SONG HIA

User Experience Expert

Over 10 years experience in tech and product development, including work as an Interactive Producer, Social Media Strategist, Content Strategy Consultant, Product Specialist and Director of Marketing at companies such as *Ignite NYC*, *Percolate Industries*, *Domani*, *Enter New Media* and *ComQi*.

### JORDAN BRENT BAKER

Programmer

15 years experience creating web and mobile applications for non-profits, government, and some of Canada's most prominent media giants. Currently the President of *Scryent*.

### JIM CLARK

Senior Advisor

Founder and CEO of the World Technology Network. Executive Director of *HealthQuake*, President of *Access Point*, and Director of the Non-Profit Sector and National Sector for the Clinton/Gore Presidential Campaign and Transition Team.

### JON BURKHARDT

Designer

MFA from the esteemed *Illustration as Visual Essay* program at SVA. Eight years of experience working on political campaigns in "political technology" and "new media," including designing websites and apps for campaigns and political parties (his work continues to be used by the Democratic party and OFA). Burkhardt has three illustrated books in the works, all of which are scheduled to be published in early 2016.