

OVERVIEW

FOUNDED 1989 | **CURRENT REVENUE** \$765,000

DESCRIPTION: MathPOWER works with students, educators, schools, and community organizations in Boston to improve student achievement in mathematics. Recent studies show that proficiency in advanced mathematics (defined as one year of high school math beyond Algebra II) is the greatest predictor of college completion within four years of high school graduation, yet many students fail to reach this level. MathPOWER leads several initiatives to support the goal that all students will succeed in mathematics, including coaching teachers and providing professional development, staffing afterschool programs that focus on academic support, and running a summer academy. In addition to emphasizing strong math skills, MathPOWER works to build resiliency skills that research has shown are essential in helping students persist toward their goals, including postsecondary education. MathPOWER takes a comprehensive approach to developing proficiency in advanced mathematics and personal resiliency to bring transformational change into the lives of urban youth. MathPOWER envisions a world in which all students achieve competency in advanced mathematics – a gateway to postsecondary opportunities, economic self-sufficiency, and lifelong success.

INVESTMENT OPPORTUNITY: MathPOWER is seeking \$1.08 million over two years to continue its program growth and develop plans for program expansion, including a highly leveraged Train the Trainer program for teacher coaching.

THE NEED

Because mathematical learning is cumulative, early instruction and achievement are important in preparing students for a rigorous curriculum in high school, which propels them on a path to postsecondary success.

- 95% of students who achieve advanced math proficiency complete college within four years of graduating high school.
- Nearly 80% of students who test into remedial math upon entering college never graduate.
- Math skills required by electricians, construction workers, upholsterers and plumbers – traditional “blue-collar” jobs – now match what is necessary to do well in college courses.
- Currently only 20 to 25 percent of minority middle school students in Boston Public Schools achieve Proficient or Advanced scores on the Math MCAS by eighth grade, compared with nearly 55 to 80 percent of white or Asian students, respectively.
- Less than 3 percent of afterschool programs surveyed felt confident in providing help with students’ math homework.

THE OPPORTUNITY FOR SOCIAL IMPACT

The gap in numeracy skills begins in preschool; addressing the issue requires early and sustained intervention.

- Since its founding, MathPOWER has reached over 7,500 students, teachers, and parents in 40 Boston public elementary and middle schools.
- MathPOWER’s programs identify and close gaps in math skills so that students can catch up, stay on track, and feel confident in their ability to learn.
- MathPOWER’s work with educators provides a highly leveraged model for impact. Work with **hundreds** of teachers has the potential to affect **thousands** of students.
- MathPOWER’s activities help develop students’ vision, motivation, and skill sets associated with **resiliency** and “**sustained persistence**” in planning one’s future.
- In 2010, MathPOWER was selected to participate in the Boston Summer Learning Opportunity Program, a collaborative effort to close the achievement gap via innovative summer learning experiences for students.

TWO-YEAR GOALS

- Grow Math*STARS afterschool sites by 33% to four
- Increase coaching and math intervention model to 15% of elementary and middle schools in BPS
- Expand capacity in Summer Academy to maximum of 200 students and open a site for elementary grades
- Develop Train the Trainer programs to leverage math enrichment and intervention programs
- Expand numeracy training programs for early childhood educators
- Build a robust, long-term student tracking system
- Publish research findings and advocate for an expanded approach to math education in schools

WAYS TO INVEST

Financial

- \$20,000 – Place a coach in a school to work with 15 teachers, affecting 300-500 students in the first year
- \$15,000 – Add an on-site director for an afterschool program
- \$1,800 – Support the full tuition for one student in the Summer Academy

In-Kind

- Board member
- Capacity-building support
- Social media expertise

"Math literacy and economic access are how we are going to give hope to the young generation."
–Robert Moses, Founder of The Algebra Project, Civil Rights Activist

SOCIAL INNOVATION IN ACTION – THE MATHPOWER MODEL

MathPOWER collaborates with urban public schools and community-based organizations in greater Boston to promote student proficiency in advanced mathematics. MathPOWER has two main program areas: coaching and professional development for educators, and direct instruction with students. In addition, MathPOWER extracts results from its work to develop research studies and to advocate for more effective approaches to math education.

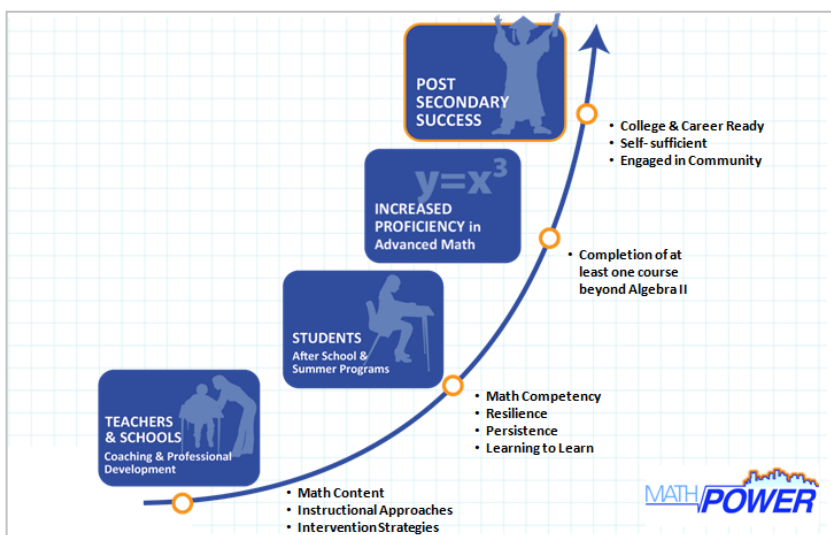
Working with Teachers & Schools: MathPOWER partners with schools to provide coaching to teachers on math content, instructional approaches, and intervention strategies. MathPOWER coaches understand the sequential progression of math concepts as a prelude to mastering more advanced concepts, and they are skilled at utilizing assessment data to improve students' learning. The coaches support teachers in a variety of ways, including:

- Promoting a deeper understanding of the mathematical content being taught
- Assisting teachers in developing a variety of educational strategies to support students' learning of mathematics
- Using assessment results to inform instructional practice
- Enhancing teachers' professional judgment about what students need to learn, what teaching methods to use, and what teachers can learn from students' work

Currently, MathPOWER coaches work in eight schools and provide support to 140 teachers in Boston Public Schools. Levels of support vary across schools; MathPOWER's most intensive coaching model, MathGAINS, provides weekly support to teachers implementing the Math Intervention Program. MathPOWER coaches, who have years of experience working primarily in middle schools, recently expanded their services to include elementary settings with an understanding of the need to prepare students early for success in their middle school years. To further address early gaps in numeracy, MathPOWER has developed and implemented coaching programs for early childhood educators, and it plans to expand these programs in the future.

Working with Students: MathPOWER works directly with students in two types of settings: in partnership with afterschool programs, and in a summer academy. The afterschool program, Math*STARS, focuses on academic support, particularly in mathematics, and it offers structured programs that assist students with developing leadership and resiliency skills. Math*STARS operates in partnership with existing afterschool programs to support and supplement those offerings.

MathPOWER has operated the Algebra Plus Summer Academy, a well-known and successful program for urban students, for more than 14 years. While preparing students to complete algebra in eighth or ninth grade, MathPOWER gradually broadened the Academy's focus to emphasize key mathematical concepts and skills spanning grades six to nine. The classes concentrate on strengthening students' understanding of the math curriculum covered in the recently completed school year. The instruction also lays a strong foundation to prepare students to master the content of the grade they will be entering in the fall. In addition to emphasizing strong math skills, the Academy has expanded its goals to include activities designed to develop students' resiliency skills – which research has shown are necessary for students from underrepresented populations to successfully pursue and complete a college education. The Academy also includes a series of parent workshops to support parents in their efforts to guide their children through school and on to postsecondary education.



Research and Advocacy: MathPOWER brings together results of research in the field with its own program experiences to provide a basis for its advocacy efforts, aiming to continually improve the effectiveness of math instruction. In the coming years, MathPOWER will strengthen its research and advocacy through:

- Expanding assessment mechanisms to measure effects on students' learning of mathematics
- Presenting results of MathPOWER's research at conferences and workshops
- Making greater use of its website for promoting outcomes and advocating for more effective interventions
- Disseminating best practices, including the role of coaching in supporting a math intervention model
- Creating training and instructional materials to support replication of key programs

TEAM AND GOVERNANCE

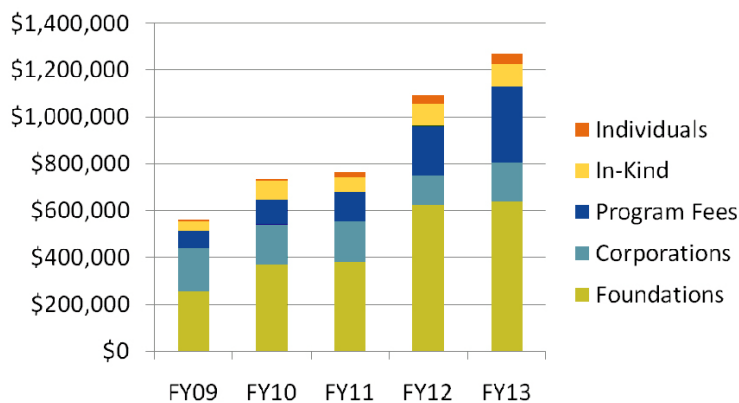
Executive Director Dr. Cathy L. Livingston brings extensive experience in literacy and math instruction, as well as academic administration at the postsecondary level. Prior to joining MathPOWER in 2006, she was the Chief Academic Officer at Quinsigamond Community College in Worcester, where she secured and managed a multimillion-dollar Title III grant that enabled the institution to create more successful pathways for students to strengthen their basic education in math and reading. Other key staff include Laurie Speranzo, Lead Coach; Erin Doherty, Director of Afterschool Programs; and Nick López, Office/Operations Manager. MathPOWER's Board of Directors is led by Robert Gittens, Vice President of Public Affairs at Northeastern University, and it is comprised of a diverse group of business and education leaders. MathPOWER is expanding its board to provide additional expertise and support to the organization.

KEY INVESTORS

- Amelia Peabody Foundation
- Anonymous Foundation
- Dolphin Trust
- Liberty Mutual Foundation
- Linde Family Foundation
- Rands Foundation
- State Street Foundation
- Toyota USA Foundation
- Wellington Management Foundation
- Associated Grant Makers

FINANCIAL SUSTAINABILITY

MathPOWER has benefited from a diverse revenue base, including a revenue stream from program fees. While MathPOWER collects fees for coaching teachers and working with students, it depends on grants and donations to fund a large portion of its work. This is particularly true for the afterschool and Summer Academy programs because parents' low-income levels limit their ability to pay the true cost. Currently, parents pay less than one-third of the actual costs to run these programs. Over the next two years, MathPOWER is seeking an investment of \$1.08 million; a large portion of which will fund the organization's efforts to design and implement replicable models. MathPOWER is at an inflection point and ready to expand through use of the Train the Trainer programs, and it will also create an assistant director position to support program growth and lead research and advocacy efforts. MathPOWER aims to boost revenue by increasing the diversity of its portfolio to include government grants, more fees for service, and a larger donor base. MathPOWER plans to launch its new delivery model in two to three new locations, including an increased presence in Boston Public Schools.



"It is amazing to see the transformation that my son has gone through this summer. He started off not wanting to attend and then began looking forward to MathPOWER. He is leaving this program with a level of confidence that will help him be successful this school year."

—Parent of a MathPOWER Summer Academy student

PERFORMANCE MEASUREMENT

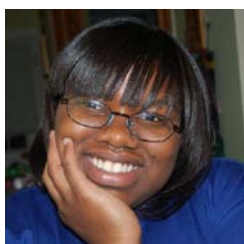
Program Performance and Organizational Health: Below is a summary of the key measures that MathPOWER will track to demonstrate progress, capture lessons learned, and make course corrections as needed. Note: Fiscal year is July 1 – June 30.

	FY 2010	FY 2011	FY 2012 (P)	FY 2013 (P)
Program Performance				
Number of coaching sites	7	8	10	13
Number of math teachers receiving coaching	120	140	150	160
Number of students benefitting from coaching	2,000	2,400	2,500	2,800
Number of students in afterschool programs	200	250	300	320
Number of afterschool program sites	3	3	3	4
Number of students attending summer academy	160	180	220	280
Number of summer academy sites	1	1	1	2
Number of early childhood sites trained	5	10	20	40
Organizational Health/Capacity-Building				
Hire an assistant director/program staff	--	--	Search & hire 1 AD	Search & hire 1.5 FTE
Enhance program and operational evaluation tools	--	--	Plan and launch	Implement
Board expansion		--	8-10 members	
Design the Train the Trainer program and supporting materials for expansion	--	--	Design program model/launch in 2-3 sites	Expand the model in 2-3 sites
Total revenue	\$740,000	\$765,000	\$1,090,000	\$1,270,000

SOCIAL IMPACT

MathPOWER uses the metrics below to measure its effect on students and teachers. It is developing enhanced evaluation tools to provide a deeper understanding of its effect on coaching and its out-of-school programs. In addition, MathPOWER plans to develop a system so it can track its students' progress over the long-term.

Indicator	FY2010
Students: Resiliency Skills	
% of Math*STARS students who learned to make meaningful relationships with peers and adults	95%
% of students who agree that the tutors and mentors are caring adults who understand their interests and goals	76%
% of students who indicate plans to attend college	85%
Students: Math Competency	
% of students who confirmed that Math*STARS is helping them do better in school	88%
% of students who demonstrated alternative strategies to solving math problems	98%
Teachers: Math Content and Instructional Approaches	
% of teachers stating that their math competence was strengthened by working with MathPOWER coach	93%
% of teachers who learned to adapt lessons to address student needs	70%
% of teachers stating that their professional judgment was enhanced by working with the coach	69%
** Students whose teachers receive Math Intervention Program support improve math scores at five times the average BPS rate.	



Success Story: Narcissa

Narcissa started her journey with MathPOWER in 2008, when she was a rising eighth grader in the Algebra Plus Summer Academy. She struggled in math and in forming positive relationships with her peers and teachers, coming off as angry and obstinate, and had trouble making friends. Narcissa completed the academy that summer and joined the Math*STARS afterschool program. Over the course of a school year, Narcissa worked with MathPOWER tutors and mentors to feel comfortable asking for help, strengthen her numeracy and math problem solving skills, and practice conflict resolution techniques. Since then, Narcissa has worked as the Academy's Office Assistant and is a peer mentor on Math*STARS' Youth Advisory Board. She is currently earning As in high school advanced math courses and has a goal of becoming an OB/GYN.