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# Math Corps

Minnesota State Senate  
Education Finance Committee.

February 9, 2023



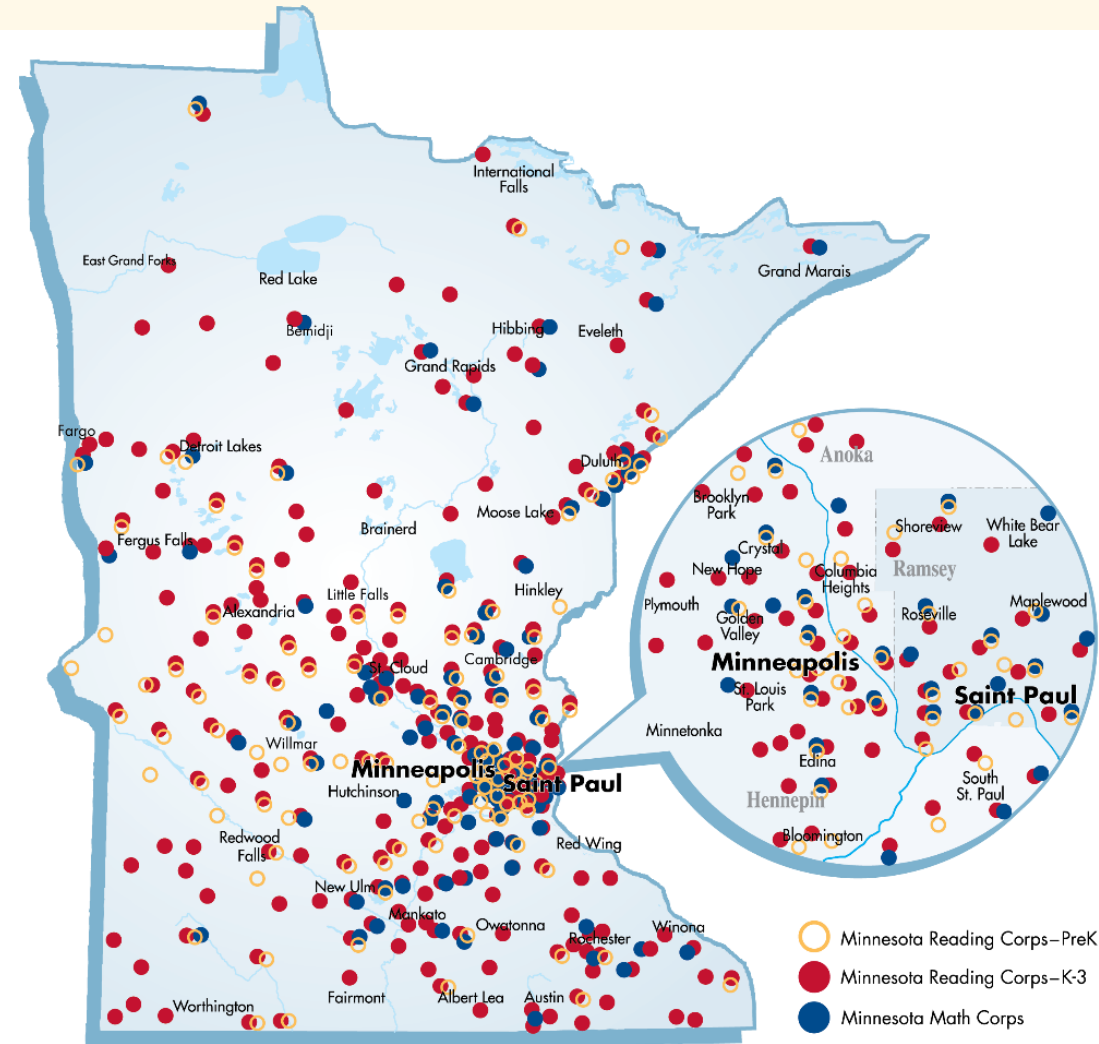
**ServeMN**

The Power of AmeriCorps.  
The Power of You.

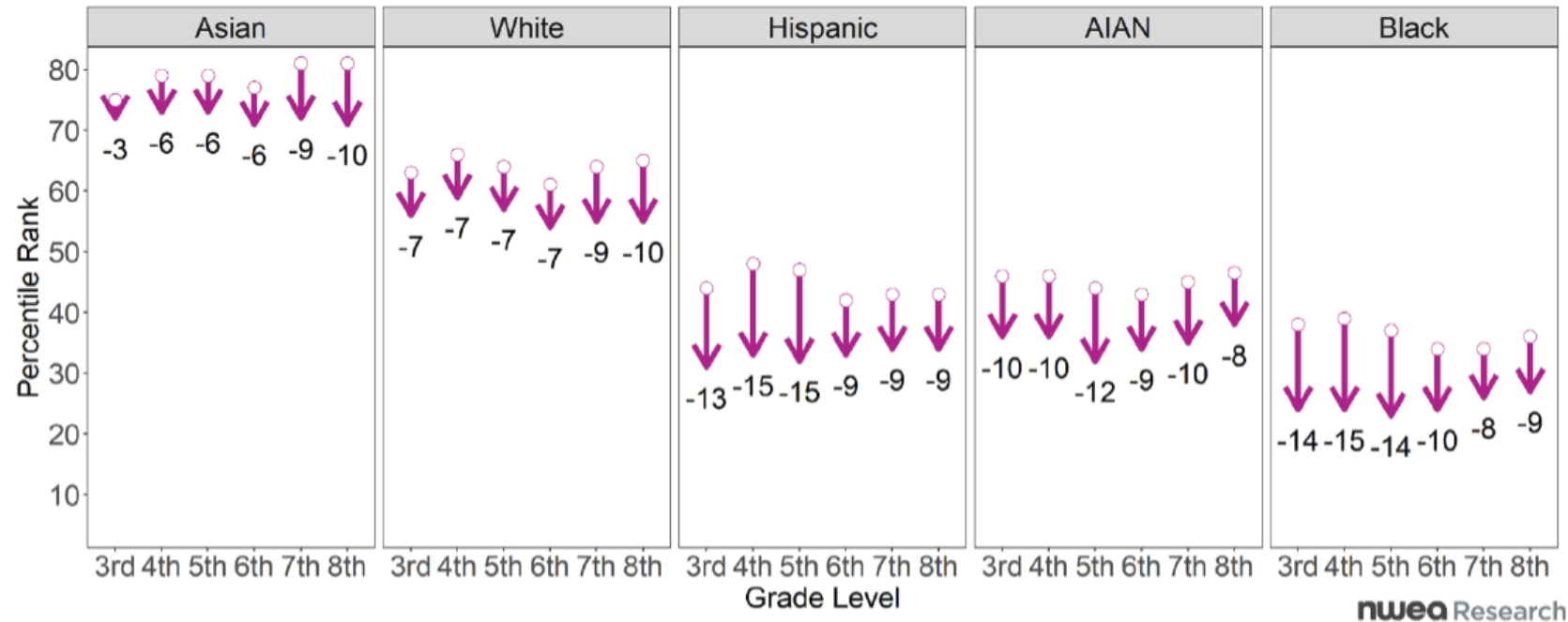
# Statewide Reach of Math Corps and Reading Corps

## Math Corps (Blue) Partner Sites

- 160+ sites
- 180+ tutors
- 4,000+ students tutored
- Statewide



# Math Scores Before and During the Pandemic



Note: The circles represent the median percentile rank for the pre-pandemic (fall 2019) cohort; the arrow tip represents the median percentile rank for the fall 2021 cohort; and the value outside the arrow indicates the change in median percentile rank between fall 2019 and fall 2021.

# Math Corps: Learning Science

## Addition Battle

**Grade and Unit:** 2.3  
**Difficulty Level:** 2  
**Objective:** Add up to four two-digit numbers using strategies based on place value and properties of operations.

**Materials:** 4 dice, whiteboards, markers, erasers  
**Key vocabulary:** Tens, ones, regroup/exchange, sum

### Intervention Sequence

**Explanation:**  
Today we will practice adding 3-4 numbers.  
*Skip explanation and modeling once students have a strong understanding of the activity.*

Today we will **draw lines to represent tens**. Draw a line. And we will draw dots to represent ones. Draw a dot. You will each roll dice to create 3 numbers that you will add together. The number that you get when you add your numbers together is called the sum. Whoever has the greater sum wins that round.

**Model:**  
First, you will each roll 2 dice to pretend I rolled 3 and 6. I could write 36. Student response: 63, so I'll keep drawings. I'll draw 3 dots to show

Next, let's pretend I rolled two 5 to show 5 tens (draw). Next, I will roll a 4. What number should I write?

Last, I will add all these numbers together. Because 12 is 10 or more, I need to carry it out, and drawing an additional ten. I added a 10 (write). Now I am left with 2 tens and 4 ones.

Next I'll count the tens. If we did 3 tens and 4 ones, we can write 34. I'll add those numbers first. To do that, I'll add them (cross off 5s). I get 17 (cross off 1). Because I'm working in tens place and the 1 in the hundreds place.

Grade: 2, Unit: 3, Lesson: Addition Battle  
Difficulty Level: 2

**Guided Practice:**  
Let's do one together. This time we'll add the same numbers just for practice. You'll take turns rolling the die and writing the biggest number you can with each digit. Hand whiteboards and dice to students. Guide students through the process of writing, representing, and adding the same 3-4 numbers.

**Independent Practice:**  
Let's play again, but this time you will roll and add different numbers independently. Whoever has the largest sum wins! Have students each (1) Roll 2 dice (2) Write their 1<sup>st</sup> number (3) Draw their number (4) Repeat this process to create the next 2-3 numbers (5) Add their numbers together. (6) Compare their sums. Have students roll at the same time for each number so you can monitor the numbers they are writing.

**Closing:**  
Today we learned how to find the sum of 3-4 numbers. End the session with specific praise to students, using one of these sentence stems (1) I noticed that you.... or (2) You did an excellent job with.....

**Correction Procedure**  
If a student makes an error: Let's look at that again. If you're unsure of what type of error a student made: Can you explain your thinking?  
• **Problems with understanding:** (1) Clarify what the student did correctly, (2) ask questions to guide the student toward the correct answer, (3) provide modeling and additional practice.  
• **Problems with computation:** Prompt student to self-correct. If they cannot, model and provide correct response.

Use effective materials

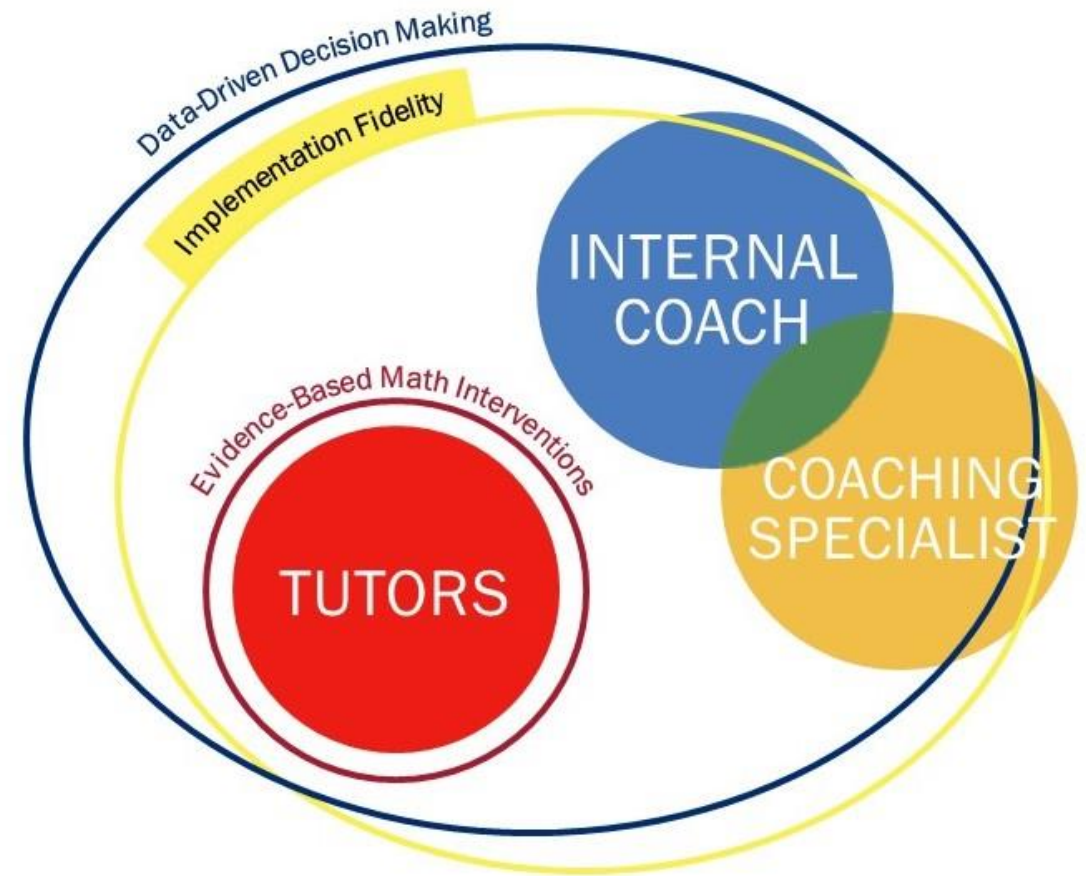
Focus on high-yield skills

Use effective teaching practices

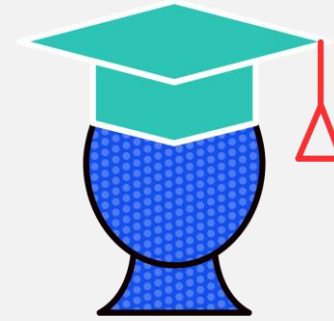
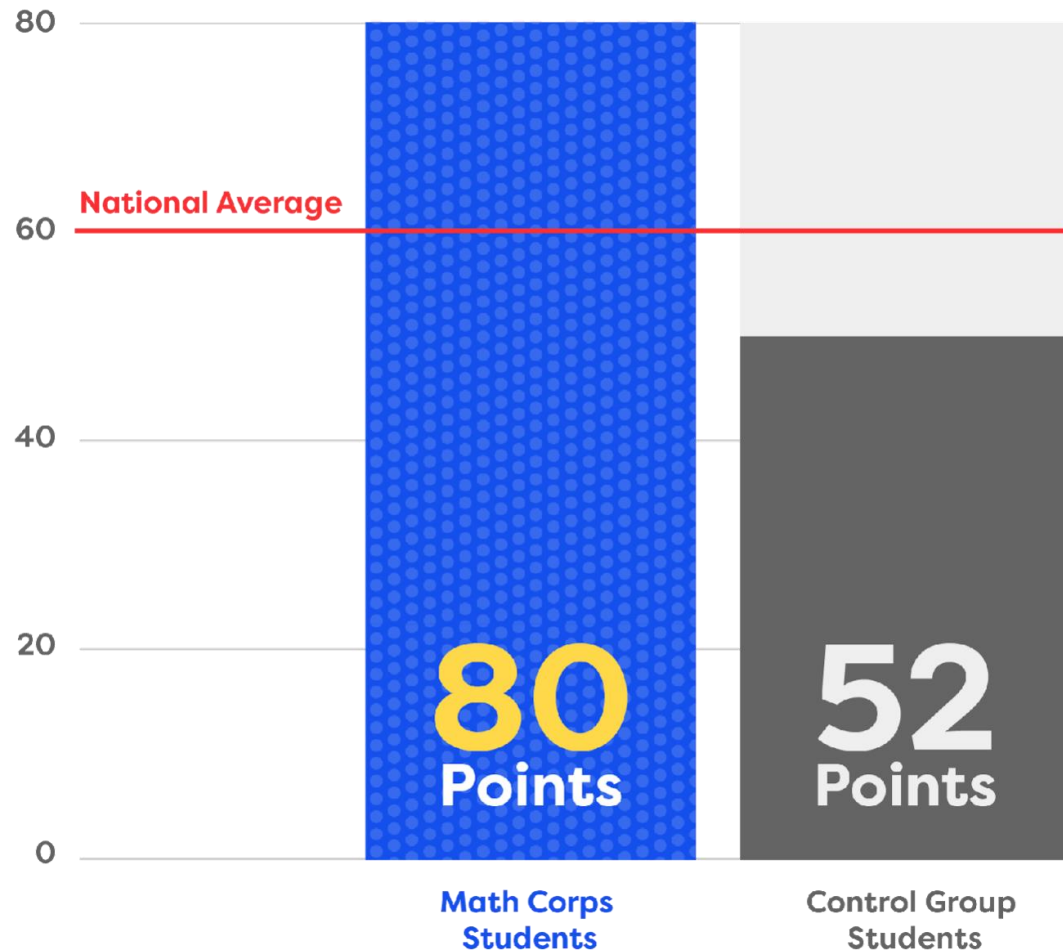
Foster joy and confidence in math

# Math Corps: Implementation Science

- ✓ Efficient learning groups
- ✓ Sufficient dosage
- ✓ Effective coaching structure
- ✓ Fidelity Forms
- ✓ Data Driven



# Math Growth



**Math Corps students  
outperform national  
average growth**

scoring 28 points higher  
than the comparison group.



# Value to State



- ✓ 100% of teachers say Reading Corps and Math Corps have a positive impact on students
- ✓ 95 % of teachers say Reading Corps and Math Corps increased students' confidence in reading or math
- ✓ Nearly half of our tutors will pursue a career in education (and 9 in 10 note that they gained powerful instructional skills)

# Math Corps Return on Investment

## THE VALUE OF OUR IMPACT

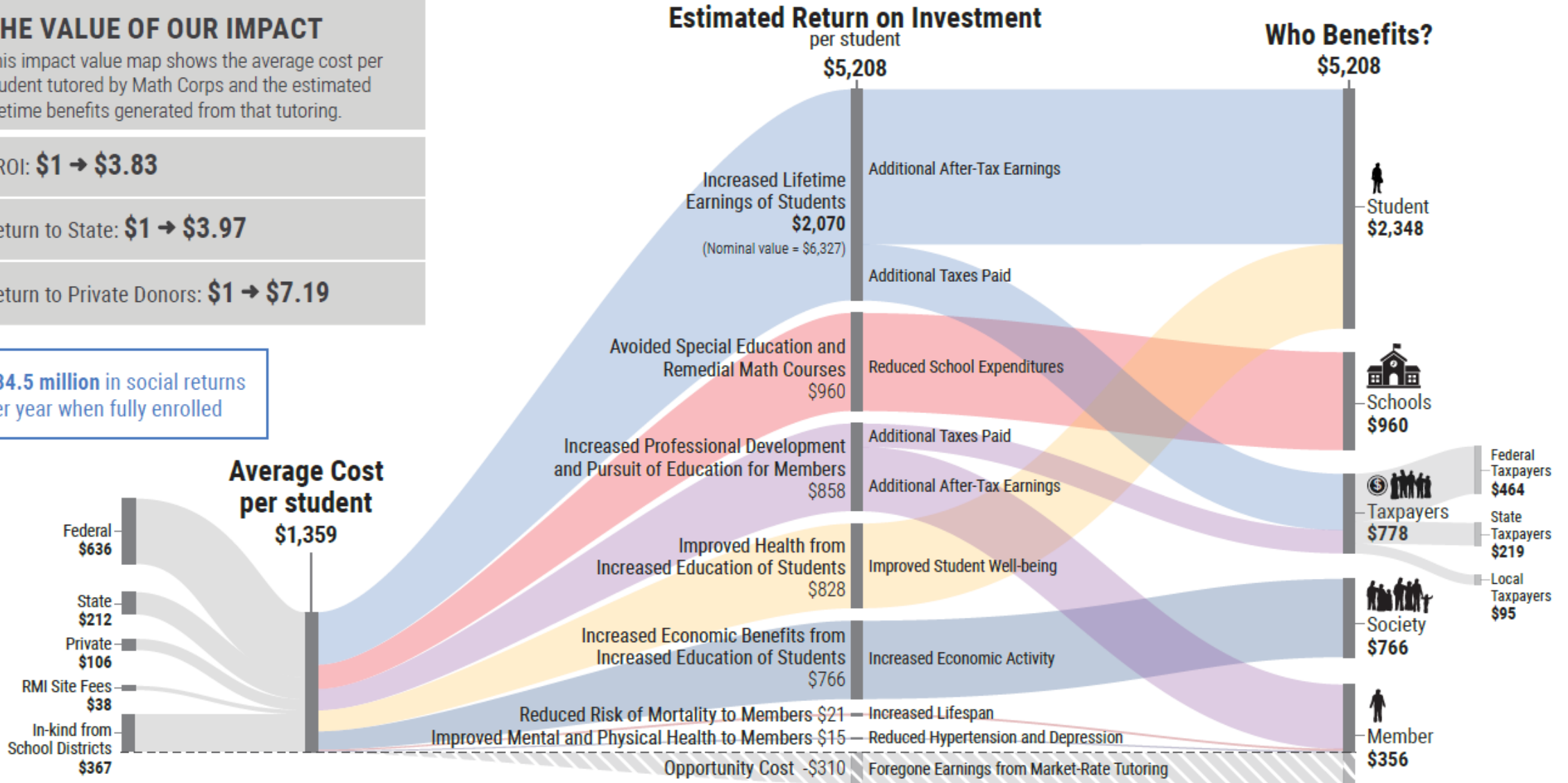
This impact value map shows the average cost per student tutored by Math Corps and the estimated lifetime benefits generated from that tutoring.

SROI: **\$1 → \$3.83**

Return to State: **\$1 → \$3.97**

Return to Private Donors: **\$1 → \$7.19**

**\$34.5 million** in social returns per year when fully enrolled





# National Recognition for Math Corps

“ Its high-quality research proves its effectiveness, and it is committed to expanding to meet the urgent need for effective support on the ground in schools. ”

— Nancy Madden, Johns Hopkins University, **Proven Tutoring**

“ We appreciate and applaud the program's use of data, in which tutors, coaches, and teacher collaborate to assess student progress and make beneficial intervention adjustments, and even determine when students no longer require support. ”

— Matthew Kraft, Brown University, **National Student Support Accelerator**

## National Recognition for Math Corps

“ Low success in math is linked to outcomes in education, income and career attainment. **ServeMinnesota is tackling how to support students from marginalized backgrounds** access supplemental math support. Math Corps focuses on addressing that specific gap by providing evidence-based supplemental math support in a highly accessible way: making it free (by leveraging federal AmeriCorps funding) with tutoring integrated into the school day.”

— Duke University's Fuqua School of Business

# Keven Tell

## Sanford Middle School teacher

“I majored in chemistry at Carleton, and found a job in the corporate world and just didn’t like it. A friend of mine was serving with Reading Corps and told me to give it a try. I served a year and then wanted to try Math Corps, because I’m more of a science guy. It was great to be in a school and see how it works. Wanting to be a teacher was always lurking under the surface for me, and being part of the school community tipped me over the edge. **Serving with Reading Corps and Math Corps is a really great introduction to what it’s like to work with kids all day, every day.** Plus, it’s a cool opportunity to see what schools are like now – they’ve evolved a lot even since I’ve been there, which isn’t all that long ago. I got to see a lot of different teachers teaching, and it helped form what I would want to do as a teacher. I also learned that I really like working with middle schoolers – their own personalities are coming through and they still have a lot of excitement for school. **My AmeriCorps education award helped me get my teaching license, as well as pay back my student loans.** Serving with Reading Corps and Math Corps helped move me to the next level. Today, I’m a sixth grade science teacher at Sanford Middle School in the Minneapolis Public Schools District!”



## Kimberly Le

Edison High School teacher



Kim had a degree in math and a few years' experience in retail management. She was curious about teaching but needed to build skills and earn money for graduate school. Math Corps was a perfect transition. She served two years at American Indian Magnet School in St. Paul and completed her teaching license at the University of Minnesota. She now teaches math at Edison High School in Minneapolis.

## Angela Schanley-Miller

King Elementary special education teacher

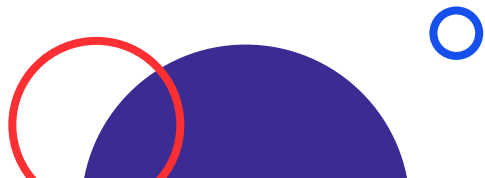


As a paraprofessional, Angela's colleagues encouraged her to apply for Math Corps. While tutoring, she earned her K-6 teaching license at Bemidji State University. "I left myself open for collaboration with staff, and that opened doors professionally." She now teaches at King Elementary in Deer River.



# Opportunities for Reading Corps & Math Corps members

- ✓ Individualized career counseling to pursue careers in education
- ✓ Intentional focus on supporting our BIPOC and American Indian members' career aspirations
- ✓ Building Greater Minnesota educator pathway
- ✓ Developed Grow Your Own teacher pathway program for AmeriCorps members to help reduce barriers to becoming teachers



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# Math Corps

A Strategic Initiative of  
ServeMinnesota.

Contact David Parker, Ph.D. –  
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**ServeMN**

The Power of AmeriCorps.  
The Power of You.