An Evaluation of Michigan Education Corps Math Corps

ANNUAL EVALUATION REPORT

2024-2025

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Executive Summary

MEC Math Corps is an AmeriCorps program that provides schools with Interventionists (also called members or Tutors) to support math development for students in grades K through 8. MEC Math Corps Tutors are trained to provide research-based math support and to administer assessment protocols. Interventionists are supported by a multi-level coaching model that includes site-based and external coaches. Full-time Tutors serve 22-24 students for 90-100 minutes each week. MEC Math Corps uses standard-protocol interventions and is supplemental (tier 2) to the core math instruction provided at each school. The goal of MEC Math Corps intervention is to raise individual students' math skills so that they are on track to meet or exceed state math proficiency standards.

The MEC Math Corps evaluation addresses these broad questions with data collected during the 2024-25 school year.

1. What is the scope of the MEC Math Corps program?

Forty-two MEC Math Corps Tutors served a total of 1,234 students across 37 schools. Tutors served the most students in fourth grade (354 students) and the fewest in third grade (40 students).

2. To what extent was the MEC Math Corps program implemented as intended?

MEC Math Corps coaches observed Tutors delivering interventions throughout the school year. These observations allow for coaches to build on the tutor's formal training and to help Tutors improve their implementation of the MEC Math Corps model. The results of the observations show interventions were conducted with high levels of mean fidelity (>95% accuracy) and in accordance with their established evidence base.

On average, students in grades K-3 received 59 minutes of tutoring per week across 12 weeks. Students in grades 4-8 averaged 62 minutes of tutoring per week across 20 weeks. Tutor absences and "other" were the most common reasons for missed tutoring sessions.

3. To what extent did participating students improve their math skills?

Tutors administer the Mathway assessment – a measure of student whole and rational number understanding and algebraic reasoning – to identify eligible students, and track student progress during intervention. Tutors also administer a multi-skill math fluency assessment that includes addition, subtraction, multiplication, and division math facts.

Results from Mathway show 83% of students demonstrated growth in their math skills, indicating an increase in their likelihood of meeting grade-level benchmarks. Also, 72% of students made growth on the Fact Fluency measure.

When asked in a survey about the impact of the program on students, 100% of Interventionists, Internal Coaches, and Administrators, and 92% of Teachers agreed or strongly agreed that MEC Math Corps had a positive impact on students.

4. How did serving as an MEC Tutor impact their skills and knowledge related to education and their future career goals?

Of Interventionist respondents to an end-of-year survey, 79% indicated they would recommend serving in the MEC Math Corps to others, and 86% of respondents agreed MEC Math Corps had a positive impact on them personally. Additionally, 79% agreed or strongly agreed that their service increased their knowledge and skills related to education. These results indicate MEC Math Corps makes a noteworthy contribution to the education career pipeline in the communities where Tutors serve.

5. MEC will work with participating schools to include aggregate program data in the school improvement planning process and applicable data sets.

Of those Administrators who responded, 35% indicated that MEC Math Corps was in their MICIP plan, 38% indicated MEC Math Corps was not in their MICIP plan, 12% indicated "I don't know," and 15% said it was not applicable. Of those Internal Coaches who responded, 29% indicated yes, 33% indicated no, 29% indicated they did not know, and 9% indicated not applicable. There is a growth opportunity for MEC and partner school to ensure MEC Math Corps is included in their MICIP plans.

6. MEC will work with participating schools to include MEC program data in the school's multi-tiered system of supports (MTSS) implementation and monitoring data sets; and,
7. MEC program staff will work with school districts, intermediate school districts, and MDE staff to refine the role of the MEC program within overall MTSS processes.

End-of-year survey results indicate the following:

Question 1: My site uses MEC Math Corps data to inform and monitor our multi-tier system of supports (MTSS) implementation for numeracy/math.
Of Administrators, 77% strongly agreed or agreed with this statement and 23% indicated no opinion.

Of Teachers 79% strongly agreed or agreed with this statement, 8% indicated they disagreed and 13% indicated no opinion.

Of Internal Coaches who responded, 75% strongly agreed or agreed with this statement, 13% indicated they disagreed, and 13% indicated no opinion.

Question 2: MEC Math Corps is integrated into our MTSS at my site.
Of Administrators, 92% strongly agreed or agreed with this statement and 8% indicated no opinion.

Of Teachers, 75% strongly agreed or agreed with this statement, 8% indicated they disagreed, and 17% indicated no opinion.

Internal Coaches who responded, 71% strongly agreed or agreed with this statement, 25% disagreed, and 4% indicated no opinion.

There are numerous touchpoints with multiple stakeholders throughout the year including progress reports to Principals/Administrators, in-person staff visits 1-2x month, onsite Tutor evaluation, etc.

MEC will provide a statement of work, which includes a timeline of the project, and budget summary, and a budget detail for progress monitoring and continuous improvement of program implementation.

These were provided to Kellie Flaminio, Department Analyst/Early Literacy Grant Coordinator, Office of Educational Supports, and Superintendent Koenigsknecht, CCRESA, on October 11, 2025.

MEC will provide trainings for newly identified schools as the programs expand.

Please see Appendix C for MEC Math Corps trainings for all participating schools.

Introduction

MEC Math Corps Overview

MEC Math Corps is an AmeriCorps program that provides schools with Tutors (also called Interventionists or Members) serve as AmeriCorps Members providing Tier 2 math intervention for students in grades 4-8. MEC Math Corps Interventionists are trained to provide research-based math support and to administer assessments.

The MEC Math Corps model aligns with Response-to-Intervention (RTI) or Multi-Tier System of Supports (MTSS), which are two descriptions of a framework for delivering educational services effectively and efficiently.[1] The key alignment features are:

- Data-driven decisions with reliable and valid screener assessments to identify students who are at-risk for poor math outcomes
- Evidence-based interventions
- Formative assessment
- High quality training in program procedures, coaching, and observations to support fidelity of implementation

In an MTSS framework, data are used for screening students for program need, and monitoring student progress toward achieving academic goals. Eligible students (defined as students below state proficiency expectations) are determined potential candidates to receive supplemental MEC Math Corps support also called Tier 2 support.

MEC Math Corps is focused on improving student skills in foundational math content areas focusing on numbers, numerical operations, and algebra—skills identified by the National Mathematics Advisory Panel (2008) as essential to overall math success. Tutoring is provided through standard-protocol interventions and is supplement to the core (Tier 1) math instruction provided at each school. The ultimate goal of tutoring is to raise individual students' math skills so that they are on track to meet or exceed state math proficiency standards.

[1] Burns et al., 2016

Overview of the Evaluation

The MEC Math Corps evaluation addresses several broad questions. The evaluation report is organized around each of these questions using data that are collected throughout the school year and are recorded by MEC Math Corps. Program administrators collect data about tutors and schools, including survey responses. Tutors collect data about student dosage and math outcomes. Coaches collect specific details about Interventionist implementation of interventions. These data are used to answer the following questions:

1. What is the scope of the MEC Math Corps program?
2. To what extent was the MEC Math Corps program implemented as intended?
3. To what extent did participating students improve their math skills?
4. How did serving as a Tutor impact their skills and knowledge related to education and their future career goals?
5. MEC will work with participating schools to include MEC program data in the school's multi-tiered system of supports (MTSS) implementation and monitoring data sets.
6. MEC program staff will work with school districts, intermediate school districts, and MDE staff to refine the role of the MEC program within overall MTSS processes.
7. MEC will provide a statement of work, which includes a timeline of the project, a budget summary, and a budget detail for progress monitoring and continuous improvement of program implementation.
8. MEC will provide trainings for newly identified schools as the programs expand.

1. What is the scope of the MEC Math Corps program?

Schools and Interventionists

MEC Math Corps partners with schools and districts to implement the program. MEC Math Corps program staff and participating schools recruit community members to serve as MEC Math Corps Interventionists (i.e., Tutors) through AmeriCorps. Tutors commit to serving a set number of hours per week (e.g., full-time AmeriCorps members complete 1,200 hours of service). Tutors receive a living allowance, benefits, and on-going coaching by a school Internal Coach and an MEC Coaching Specialist throughout their service term.

Upon completion of service, members receive a Segal AmeriCorps Education Award that can be used to pay education costs at qualified institutions of higher education, for educational training, to repay qualified student loans, or assist with other expenses associated with post-secondary education.

Table 1 shows the number of participating schools, Coaching Specialists, and Interventionists that served during 2024-25.

Table 1. Schools, Coaches, and Tutors

Program	Schools	Coaching Specialists	Tutors*
Grade K-3 Math Corps	6	2	6
Grade 4-8 Math Corps	31	3	36
Total	**37**	**3****	**42**

***Defined as having entered tutoring minutes for at least one student in the Math Corps data management system.*
*** Both K-3 Math Corps Coaching Specialists also provided support to 4-8 Math Corps.*

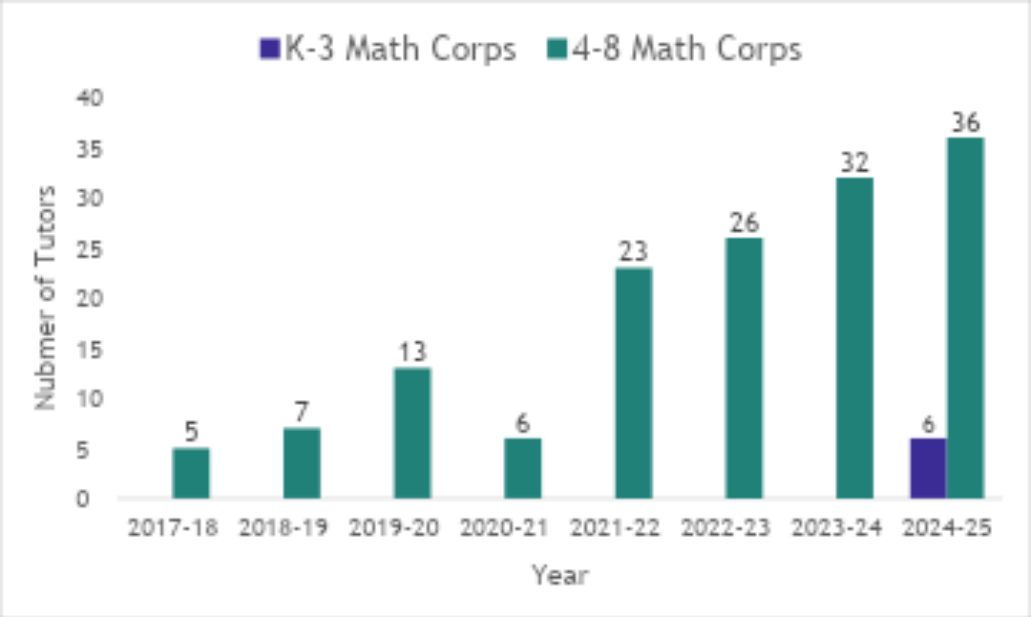
MEC Math Corps Tutors receive training through an online Learning Management System (LMS). The intensive, information-filled courses on the LMS provide foundational training in the research-based math interventions employed by MEC Math Corps. The courses teach the skills, knowledge, and tools needed to serve as Interventionists. Interventionists are provided a detailed program manual and online resources that mirror and supplement the contents of the manual (e.g., videos of model interventions and best practices). Both the manual and online resources are intended to provide Tutors with just-in-time support and opportunities for continued professional development and skill refinement. Additional training is provided throughout the Tutors' service term.

In addition to extensive training, MEC Math Corps provides Tutors with multiple layers of supervision to ensure integrity of program implementation. Schools identity a staff member to serve as an Internal Coach, who is typically a math specialist, or Title I Teacher, to serve as immediate on-site supervisor, mentor, and advocate for Tutors. The Internal Coach's role is to monitor Interventionists and provide guidance in MEC Math

Corps's assessment and intervention implementation. As the site supervisor, the Internal Coach is a essential component of the supervisory structure.

MEC Coaching Specialists provide both Interventionists and Internal Coaches with expert support on math instruction and ensure implementation integrity of MEC Math Corps program elements. In addition to these two coaching layers, a third layer of MEC AmeriCorps Program support provides administrative oversight for program implementation to schools participating in MEC Math Corps. The number of Tutors serving varies by program year based on a number of factors including Tutor recruitment, Tutor types (i.e. full-time or part-time), school interest, Tutor retention, and available public and private funding. Figure 1 displays the number of Tutors who served each year of the program.

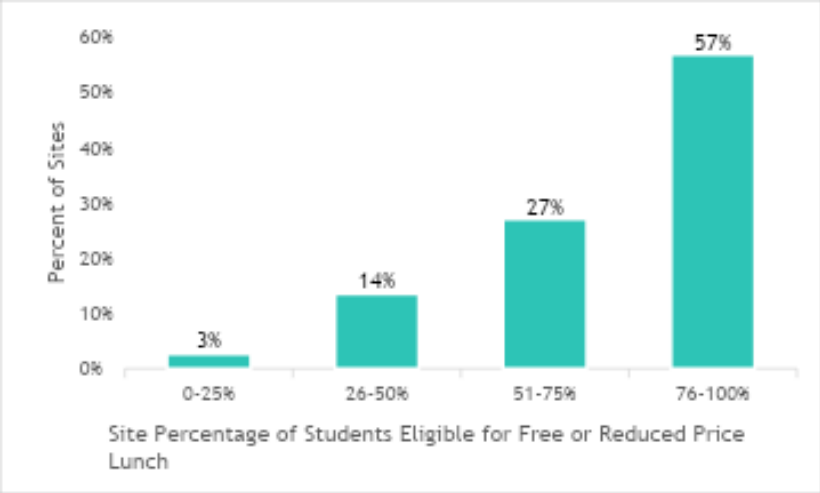
Figure 1. Number of Tutors by Year



School Characteristics

MEC Math Corps strives to serve students and schools that would benefit the most from Tier 2 math intervention. The percentage of students at the school who are eligible for the federal free and reduced-price lunch (FRPL) can be a useful indicator. Students from families with incomes at or below 185 percent of the Federal poverty level are eligible for free or reduced-price meals. Figure 2 shows the distribution of Math Corps schools based on their school level FRPL percentage. Of participating schools, 84% have a F/RPL percentage of 50%+.

Figure 2. Schools by Student Eligibility for Free/Reduced Price-Lunch Program



Students Tutored

Students are identified as good candidates for Math Corps participation based on Math Corps benchmark scores, school data, and teacher recommendations. After identifying eligible students, the tutor works with their Internal Coach to select which students will be served, called the tutor's "caseload". Coaches set the caseload using a number of factors such as the school's schedule and other services available to eligible students.

The number of students on a caseload depends on the Tutor's service commitment and if they are serving students in the grades K-3 or 4-8. Tutors serving in the K-3 Math Corps program work with students in pairs. Full-time Tutors aim to serve a minimum of 24 students at a time while part time tutors serve a minimum of 18 students. In the grades 4-8, Tutors work with students in pairs or groups of three. Full-time tutors aim to serve 24 or more students at a time while part-time Tutors serve 12 students.

Table 2 displays the number of students served by grade across all schools.

Table 2. Number of Students Tutored

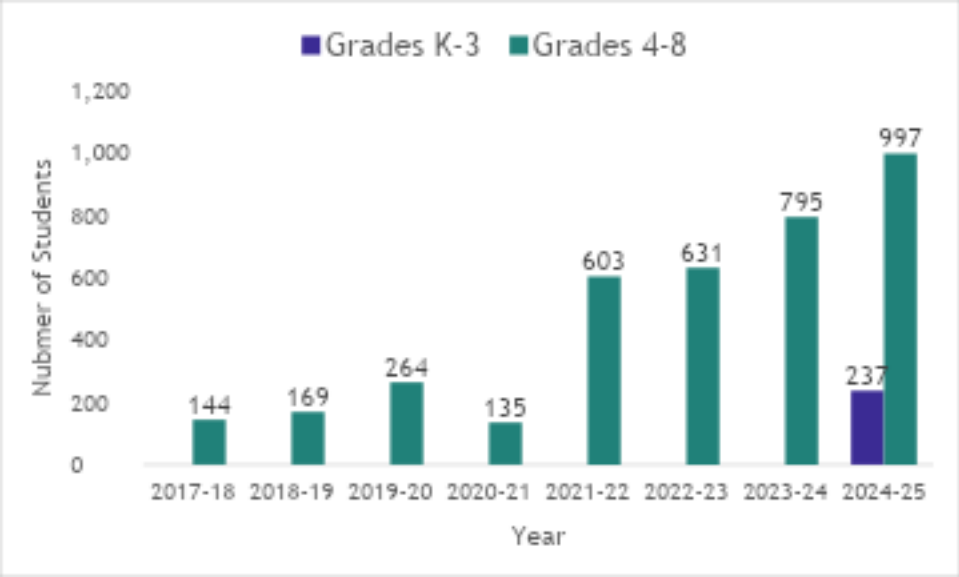
Grade	Number of Students
Grade K-3 Total	**237**
Kindergarten	64
First	65
Second	68
Third	40
Grade 4-8 Total	**997**
Fourth	354
Fifth	255
Sixth	175
Seventh	122
Eighth	91
Total	**1,234**

The number of students served varies by program year based on many factors including tutor recruitment and retention, tutor service terms (i.e. full-time or part-time), whether students are receiving intervention in pairs or groups of three, and the frequency of students exiting/graduating from the program.

Figure 3 displays the number of students who were tutored each year of the program. Note the number of students

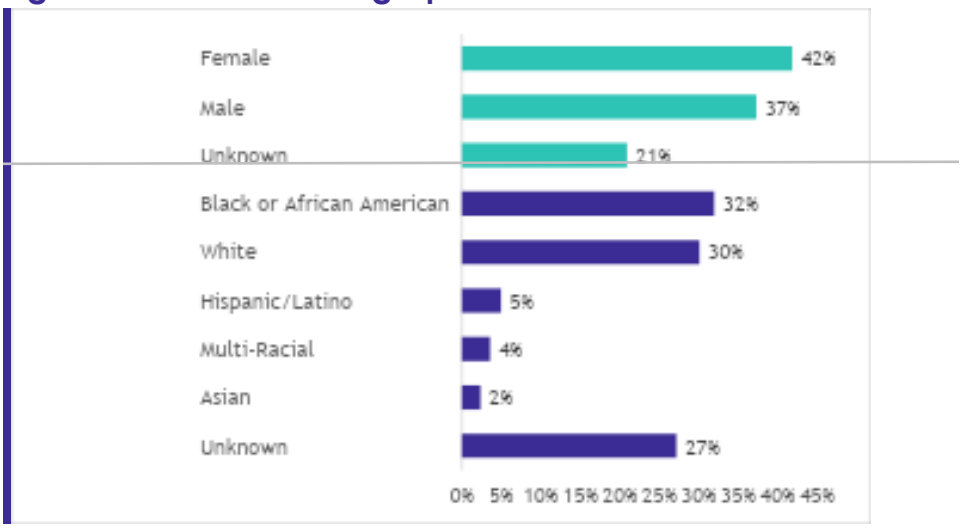
served in 2019-2022were significantly impacted by the COVID-19 pandemic.

Figure 3. Number of Students Tutored by Year



MEC Math Corps Tutors record demographic information of students they serve, which allows evaluators to disaggregate student outputs and outcomes by important demographics to ensure the program is having an equitable impact. The information is also used in various reports to describe the students participating in the program. Figure 4 shows slightly more female students than male students received tutoring, and Black or African American and White were the largest racial/ethnic groups participating in the program.

Figure 4. Student Demographics



2. To what extent was the MEC Math Corps program implemented as intended?

Tutor Fidelity

Ensuring accurate, effective implementation is a core principle of Math Corps. Both types of coaches—Internal Coaches and Coaching Specialists—provide tutors with expert support on math instruction and ensure implementation integrity of Math Corps program elements through ongoing monitoring and observation. During coaching sessions Math Corps Coaching Specialists and Internal Coaches discuss student selection for service, track student progress for data-based decisions, and observe tutors delivering interventions. The observations allow coaches to build on a tutor's formal training and to help tutors improve their implementation of the Math Corps model. Coaches are expected to observe tutors delivering interventions at least once each month to ensure fidelity to the interventions effective instructional processes.

During coaching sessions, coaches complete a fidelity checklist for each intervention they observe. The checklist includes the important steps for accurate completion such as introducing the lesson and modeling how to complete problems. After completing observation coaches enter the number of checklist items that the tutor delivered correctly into the online Math Corps Data Management System (MCDMS). The percent fidelity is then calculated by dividing the number of items delivered correctly by the total number of items.

Table 3 displays the total number of fidelity checks completed and the average intervention fidelity by grade level program. Interventions were delivered with high fidelity, indicating the program was implemented in accordance with its evidence base.

Table 3. Intervention Fidelity

Program	Total Checks Collected	Fidelity Range	Average Fidelity	Fidelity Standard Deviation
Grades K-3	49	73-100%	95.0%	7.9%
Grades 4-8	269	64-100%	96.9%	5.5%

Interventionist Fidelity

During coaching sessions, coaches complete a fidelity checklist for each intervention they observe. The checklist includes essential steps for accurate administration, e.g., lesson introduction and modeling problem completion.

After completing an observation, coaches enter the number of checklist items that the tutor delivered correctly into the online MEC Math Corps Data Management System (MCDMS). The percent fidelity is then calculated by dividing the number of items delivered correctly by the total number of items.

Table 4 shows the average number of students served per tutor. The last column of the table shows the percentage of tutors who met or exceeded their caseload expectations for at least 80% of the weeks they served in the program.

Of grade 4-8 Tutors 81% consistently met their caseload expectation serving an average of 28 students per tutor throughout the year. Grade K-3 Tutors were not able to consistently meet their caseload. However, Grade K-3 Tutors had a large number of students exit from the program which led to Tutors serving an average of 40 students this year.

Table 4. Tutor Caseloads

Program	Number of Tutors	Average Total Students Served per Tutor	Percentage of Tutors Meeting Caseload Expectation
Gr K-3	6	39.5	0%
Gr 4-8	36	27.8	81%

Student Dosage

Tutors in the grades K-3 program strive to work with each student on their caseload for 20 minutes each day, five days per week with tutoring delivered in pairs. Tutors in the grades 4-8 program work with students for 90 minutes per week in pairs or groups of three students. Tutors record each student's daily minutes in the online MCDMS.

Table 5 and Table 6 show the total number of tutoring sessions and the average number of sessions, weeks, and minutes per week students received in each grade. Students received a substantial number of tutoring sessions with Grade K-3 students receiving an average of 59 minutes per week across 12 weeks, and Grade 4-8 students receiving an average of 62 minutes per week across 20 weeks.

Table 5. Tutoring Dosage by Grade

Grade	Students Tutored	Total Tutoring Sessions	Average Tutoring Sessions per Student	Average Tutoring Weeks per Student	Average Tutoring Minutes per Week per Student
Grade K	40	1,164	29.1	9.7	60.4
Grade 1	64	2,055	32.1	10.6	57.8
Grade 2	65	2,632	40.5	13.4	59.1
Grade 3	68	2,348	34.5	11.6	57.8
Total	**237**	**8,199**	**34.6**	**11.5**	**58.6**

Table 6. Tutoring Dosage by Grade

Grade	Students Tutored	Total Tutoring Sessions	Average Tutoring Sessions per Student	Average Tutoring Weeks per Student	Average Tutoring Minutes per Week per Student
Grade 4	354	16,697	47.2	21.9	63.0

Grade 5	255	11,253	44.1	21.9	59.7
Grade 6	175	5,194	29.7	15.9	63.6
Grade 7	122	3,642	29.9	16.0	60.1
Grade 8	91	2,819	31.0	16.3	59.9
Total	**997**	**39,605**	**39.7**	**19.6**	**61.6**

Tutors also record the reason a scheduled tutoring session was not delivered. Tutors are able to indicate if a session was missed for each of the following reasons: student absence from school, tutor absence from school, tutor receiving training, tutor administering an assessment to the student instead of delivering an intervention, or other for any reason not provided. Table 7 and Table 8 display the percentage of days tutoring sessions were delivered along with the rate of each missed tutoring session reason. Tutor absences was the most common reason for missed sessions in Grade K-3 while "other" was the most common reason for missed sessions in Grade 4-8.

Table 7. Tutoring Attendance by Grade

Grade	Session Attended	Tutor Absent	Student Absent	Assessing Student	Tutor Training	Other
Grade K	68%	10%	8%	7%	0%	7%
Grade 1	69%	12%	7%	7%	0%	6%
Grade 2	67%	11%	7%	7%	0%	7%
Grade 3	60%	14%	8%	7%	0%	10%
Total	**65%**	**12%**	**7%**	**7%**	**0%**	**8%**

Table 8. Tutoring Dosage by Grade

Grade	Session Attended	Tutor Absent	Student Absent	Assessing Student	Tutor Training	Other
Grade 4	69%	8%	7%	3%	1%	12%
Grade 5	69%	10%	7%	3%	0%	11%
Grade 6	65%	9%	13%	2%	0%	10%
Grade 7	64%	10%	14%	2%	0%	9%
Grade 8	65%	9%	12%	3%	0%	11%
Total	**68%**	**9%**	**9%**	**3%**	**0%**	**11%**

Lesson Completion

Math Corps delivers intervention in the form of instructional lessons which vary in number from 20 in eighth grade to 39 in sixth grade. Each lesson focuses on a particular skill (ex. Multiplication Concepts & Strategies) and content builds across the lessons (ex. addition lessons come before multiplication lessons). See Appendix B for more information on the Math Corps lesson research base. Students are required to demonstrate mastery—defined as 85% correct on a brief informal assessment of lesson content—before advancing to the next lesson. Progression through the lessons is essential for students to receive

instruction in and reach mastery of critical math concepts.

Table 9 displays the average number of lessons students completed in each grade and the average number of weeks students spent on each lesson. On average, third grade students completed the most lessons while seventh grade students completed the fewest lessons.

Table 9. Lessons Completed per Student

Grade	Average Lessons Completed	Average Weeks per Lesson
Grades K-3 Total	**17.6**	**0.9**
Grade K	14.5	1.0
Grade 1	17.6	0.8
Grade 2	16.5	0.9
Grade 3	20.5	0.8
Grades 4-8 Total	**9.0**	**2.7**
Grade 4	9.4	2.7
Grade 5	9.0	2.7
Grade 6	9.0	2.4
Grade 7	7.9	2.8
Grade 8	8.4	3.0
Total	**10.3**	**2.2**

3. To what extent did participating students improve their math skills?

Tutors administer an assessment called Mathway to participating students during three seasonal benchmark windows. The assessment content aligns with state and national curricular standards related to whole and rational number understanding as well as algebraic reasoning. Mathway is specific to each grade and consists of 23 to 34 items that increase in difficulty. The web-based assessment provides information on overall student performance for evaluation and can be disaggregated by intervention units for intervention decision-making.

Tutors also administer a fact fluency assessment in conjunction with Mathway. This one-minute multi-skill probe includes basic addition, subtraction, multiplication, and division math facts. Students who score below the fact fluency benchmark of 30 problems correct per minute receive math fact practice during at least one tutoring session each week. See Appendix A for details on assessment procedures and research base.

Student Performance on Mathway

Table 10 displays Mathway assessment data for participating students who received 6 or more weeks of Math Corps tutoring. Overall, 83% of students demonstrated growth in their math skills, indicating an increase in their likelihood of meeting grade-level benchmarks. The last column shows 51% of students improved their Mathway performance by at least 20 percentage points, which

is associated with a 2-times or greater increase in their odds of meeting grade-level benchmarks.

Table 10. Mathway Growth for Participating Students

Grade	Number of Students with Two Benchmarks	Average Growth in Percentage Points (Standard Deviation)	Percentage Making Growth	Percentage Making 20 Percentage Point Growth
Grades K-3 Total	**182**	**42.6% (23.0%)**	**95.6%**	**85.2%**
Grade K	28	45.3% (22.5%)	100.0%	89.3%
Grade 1	52	37.6% (23.3%)	96.2%	86.5%
Grade 2	60	43.6% (21.5%)	93.3%	86.7%
Grade 3	42	45.4% (24.9)	95.2%	78.6%
Grades 4-8 Total	**808**	**19.3% (20.4%)**	**79.7%**	**42.9%**
Grade 4	310	25.8% (20.9%)	87.4%	59.4%
Grade 5	232	14.0% (18.4%)	75.4%	28.0%
Grade 6	133	17.9% (19.3%)	76.7%	42.9%
Grade 7	76	14.9% (20.6%)	73.7%	32.9%
Grade 8	57	14.6% (19.2%)	70.2%	28.1%
Total	**990**	**23.6% (22.8%)**	**82.6%**	**50.7%**

Student Performance on Fact Fluency

Tutors administer a one-minute fact fluency assessment to track student progress on basic math fact skills and determine if students should receive fact fluency support during tutoring. Table 11 displays the average fact fluency score collected before tutoring begins and the final score of the program year. 72% of all students improved their fact fluency performance during tutoring. Grade 8 students averaged the greatest growth with the average student increasing their score by 4.2 items correct.

Table 11. Fact Fluency Average Growth

Grade	Number of Students with Two Scores	Average Initial Score (Standard Deviation)	Average Final Score (Standard Deviation)	Average Growth (Standard Deviation)	Percent Making Growth
Grade 1	43	0.9 (1.1)	2.8 (2.0)	1.9 (2.0)	72.1%
Grade 2	60	3.1 (3.0)	6.2 (4.2)	3.1 (3.3)	71.7%
Grade 3	46	3.4 (2.9)	7.5 (4.5)	4.1 (5.2)	80.4%
Grade 4	309	4.3 (3.8)	8.4 (6.1)	4.1 (4.8)	78.3%
Grade 5	228	7.8 (5.7)	11.3 (7.4)	3.5 (5.3)	71.1%
Grade 6	118	8.6 (5.9)	12.3 (8.2)	3.7 (6.8)	61.9%
Grade 7	74	9.6 (6.9)	13.5 (8.7)	3.9 (6.4)	63.5%

Grade 8	54	10.6 (7.2)	14.8 (9.4)	4.2 (8.1)	66.7%
Total	**932**	**6.2 (5.6)**	**9.9 (7.4)**	**3.7 (5.4)**	**72.0%**

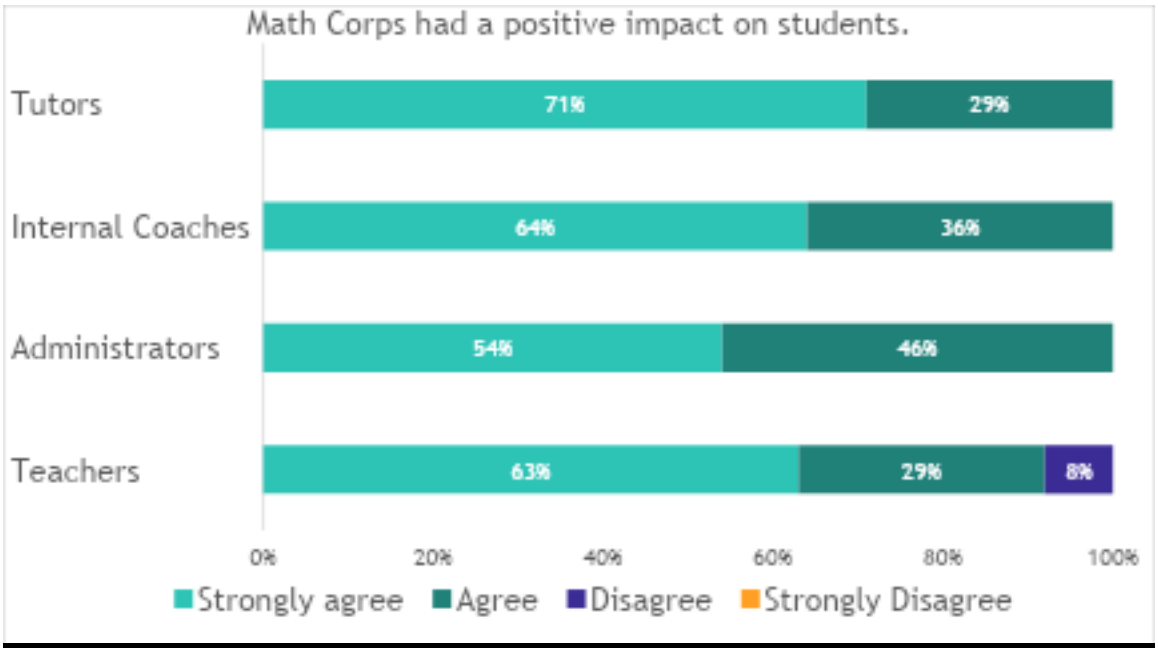
Note: Includes students with 6 or more weeks of tutoring.

Perceptions of Student Performance

In the spring of each program year, MEC Math Corps evaluators distribute an online survey to tutors, Internal Coaches, school administrators, and classroom teachers of students participating in MEC Math Corps. The survey asks a wide-range of questios regarding experiences with MEC Math Corps and potential impact of the program.

Figure 5 displays the percentage of respondents who agreed or disagreed that Math Corps had a positive impact on students. The survey results are notably positive with 100% of tutors, Internal Coaches, and administrators and 92% of teachers agreeing or strongly agreeing that MEC Math Corps had a positive impact on students.

Figure 5. Survey Results on Student Impact



4. How did serving as a tutor impact their skills and knowledge related to education and future career goals?

While supporting student math development in students is the primary goal for the program, MEC Math Corps also strives to provide tutors with an overall positive experience, and prepare them for any future career they might

pursue, especially careers in the education field. MEC Math Corps evaluators distribute a survey to tutors in the spring of each program year. The survey asks tutors a series of questions on their experience in MEC Math Corps and the impact the program had on them, their students, and their school. Survey results are used to evaluate the program's impact on the tutors themselves.

Service Experience

A common practice in surveys is to ask the respondent if they would recommend the program to others, as one's willingness or unwillingness to recommend encompasses the overall experience of serving in MEC Math Corps.

Figure 6 shows that 79% of tutors would recommend serving as a member of Math Corps. These results suggest most tutors had a positive experience while serving in Math Corps.

The survey also asked tutors if serving in Math Corps had a positive impact on them personally. Figure 7 shows that 86% of tutors agree or strongly agree service had a positive impact on them, demonstrating the positive personal impact of serving.

Figure 6. MEC Tutor Satisfaction

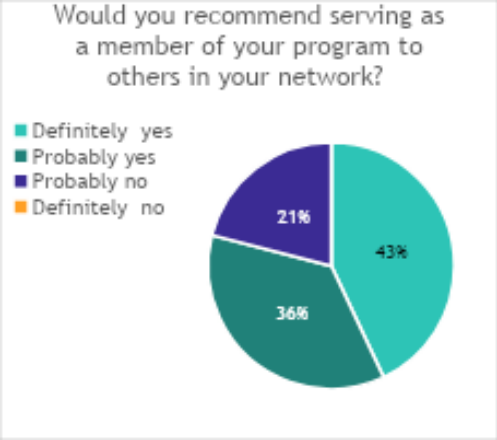
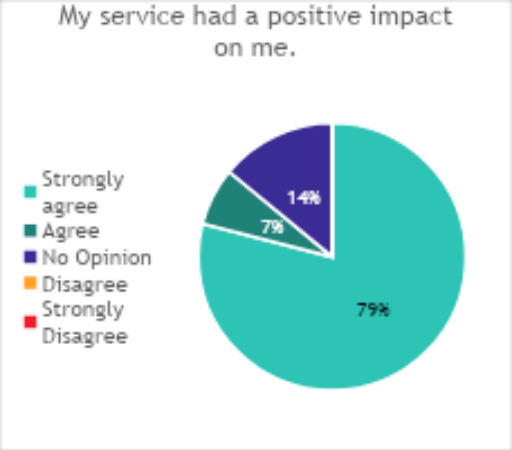


Figure 7. Impact on MEC



Skill Development and Future Careers

MEC Math Corps strives to support tutor professional development through the training, coaching, service experience, and other professional development support provided by the program. Specifically, MEC Math Corps aims to increase the teacher and school staff pipeline in communities through our tutors pursuing careers in education after their service. To evaluate these outcomes in the short term, the spring survey asks tutors to respond to questions related to their increased knowledge and skills as well as plans to pursue a career in education.

Figure 8 shows that 79% of respondents agree or strongly agree that their service increased their knowledge and skills related to education, demonstrating the

program is having a positive impact on many tutors in this area. Figure 9 displays tutor responses related to the likelihood they will pursue a career in education as a result of their service in Math Corps. 7% of respondents answered that they are very likely to pursue a career in education as a result of their service and 14% responded that they are likely to do so. These results indicate Math Corps likely contributes to the education career pipeline in the communities where tutors serve.

Figure 8. MEC Tutor Increased Knowledge and Skills

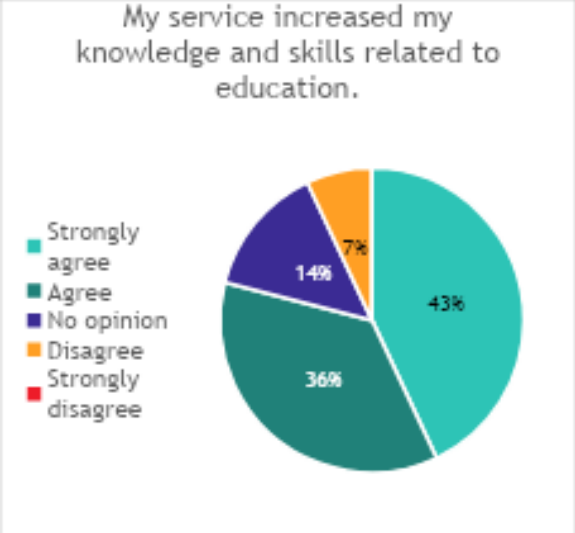
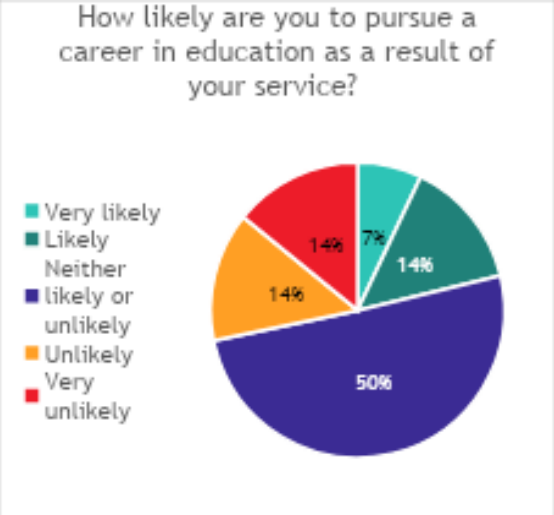


Figure 9, MEC Tutors Pursuing Careers in Education



5. MEC will work with participating schools to include aggregate program data in the school improvement planning process and applicable data sets.

This is evaluated through an end-of-year survey asking this question specifically of Administrators and Internal Coaches*: Is MEC Math Corps in your MICIP plan for 2024-2025?* Respondents answer on a Likert scale of Strongly Agree, Agree, No Opinion, Disagree or Strongly Disagree. Of those Administrators who responded, 35% indicated that MEC Math Corps was in their MICIP plan, 38% indicated MEC Math Corps was not in their MICIP plan, 12% indicated "I don't know," and 15% said it was not applicable. Of those Internal Coaches who responded, 29% indicated yes, 33% indicated no, 29% indicated they did not know, and 9% indicated not applicable. There is a growth opportunity for MEC and partner school to ensure MEC Math Corps is included in their

MICIP plans. There is a significant decrease in the percentages of Administrators who indicated MEC Math Corps was in their MICIP plan. While it's unknown why there is a decrease, this indicates a growth opportunity for ensuring Administrators and Internal Coaches are informed participants in the MICIP process and/or MICIP plans.

MEC staff have worked closely with a variety of stakeholders to develop specific guidance for schools on how to include MEC Math Corps in the MICIP process and School Improvement Plans. These stakeholders included ISD School Improvement Consultants, the Michigan Department of Education, and building administrators. Guidance is provided to every school and updated regularly. MEC will continue to revise and share guidance with participating schools to support MEC Math Corps documentation in partner schools' MICIP plans and processes.

6 & 7. MEC will work with participating schools to include MEC program data in the school's multi-tiered system of supports (MTSS) implementation and monitoring data sets; and, MEC program staff will work with school districts, intermediate school districts, and MDE staff to refine the role of the MEC program within overall MTSS processes.

To respond to these, MEC used survey results and the number of opportunities MEC staff had meetings or discussions with stakeholders specific to the role of MEC within overall MTSS processes.

Survey Results

The most direct assessment of this outcome is through the annual survey. The annual survey is sent electronically to all school Principals/Administrators, Internal Coaches, and Classroom Teachers who have students who participated in MEC Math Corps. The survey includes specific statements asking the degree to which these stakeholders agree MEC Math Corps is an integral part of the school's MTSS. Responses are on a Likert scale of Strongly Disagree, Disagree, No Opinion, Agree or Strongly Agree.

Question 1: My site uses MEC Math Corps data to inform and monitor our multi-tier system of supports (MTSS) implementation for numeracy/math.

Of Administrators, 77% strongly agreed or agreed with this statement and 23% indicated no opinion.

Of Teachers 79% strongly agreed or agreed with this statement, 8% indicated they disagreed and 13% indicated no opinion.

Of Internal Coaches who responded, 75% strongly agreed or agreed with this statement, 13% indicated they disagreed, and 13% indicated no opinion.

Question 2: MEC Math Corps is integrated into our MTSS at my site.
Of Administrators, 92% strongly agreed or agreed with this statement and 8% indicated no opinion.

Of Teachers, 75% strongly agreed or agreed with this statement, 8% indicated they disagreed, and 17% indicated no opinion.

Internal Coaches who responded, 71% strongly agreed or agreed with this statement, 25% disagreed, and 4% indicated no opinion.

We are pleased to see that over three-quarters of Administrators, Internal Coaches, and Teachers are aligned in their responses, sites are using data for making decisions within their MTSS math frameworks, and that MEC Math Corps is integrated into math MTSS frameworks. We are concerned with responses indicating no opinion or disagreement, or responses that seem to "contradict" each other. For example, of Administrators 92% indicated that MEC Math Corps was integrated into their school's Math MTSS framework; however, only 77% indicated they use MEC Math Corp data to inform and monitor MTSS. This may be due to a lack of common language or shared understanding for implementing MTSS, i.e., do our sites have the same understanding and definitions of MTSS as with which MEC Math Corps operates? Further, are all staff involved in MEC Math Corps also involved in MTSS at their sites? One would assume yes; but, it is possible for "siloes" to develop – even unintentionally - and there is not collaboration and communication across stakeholders. MEC staff will continue working with partner sites to ensure there is clear, shared understanding on what a comprehensive definition of MTSS implementation fully entails in which data use is a necessary, but not sufficient for full MTSS implementation. Successful student outcomes in MEC Math Corps as a tier 2 intervention is integral to how well a school's MTSS framework and resource allocation supports all students (tier 1) and students who need intensive supports (tier 3).

Coaching Sessions & Other Touchpoints
There are numerous touchpoints with multiple stakeholders throughout the program year. The individuals involved vary based on the purpose for the meeting; however, the majority of conversations center on student outcomes, MEC Math Corps fidelity, and integrating MEC Math Corps to supplement core curricula. For example, Coaching Specialists and Internal Coaches meet with MEC Interventionists monthly to review each progress-monitoring graph for students receiving intervention. They identify strengths and concerns, analyze the reasons for success or lack thereof, develop a plan (may include maintaining the intervention, making an intervention change, or adding an additional

intervention), discuss fidelity data, and determine a timeline for next steps. This process is referred to as problem solving. Further, coaches discuss the impact of core math instruction on all students and how students are selected as needing MEC Math Corps tier 2 support. Coaches also discuss factors impacting MEC Math Corps student progress such as attendance and behavior, which may require different, additional intervention.

MEC program staff provide summary progress reports with in-person meetings specifically targeted to school Principals/Administrators to engage them in program effectiveness within their MTSS math frameworks in the fall and winter. The reports include program outcomes including Internal Coach involvement, and a SMART goal set in the fall by Coaching Specialists and Internal Coaches for on-going strengthening of program implementation. Most goals focus on increasing fidelity checks and dosage.

All MEC staff have regularly scheduled, in-person visits to schools occurring multiple times throughout the school year. As a result, there is usually an MEC staff person at the school site at least 1-2 times per month. Depending on the purpose of the visit, staff connect with the Administrator, the Internal Coach, and Interventionists.

All MEC Interventionists are required to have a mid-year evaluation conducted by an MEC staff and the Internal Coach at the site. Detailed survey information from Internal Coaches and Tutors are gathers, and MEC staff have in-person site visit to review the information and discuss any concerns. Tutors also participate in in-person "huddles" with peers and MEC program staff 2-3 times per year.

MEC staff are frequently asked to present to administrative teams, ISDs, School Boards, etc. who are not current partners but are interested in implementing MEC programs. It is emphasized that MEC Math Corps is a tier 2 supplement intervention most effective for students whose math skills are just below grade level. MEC Math Corps programming meets the definition of an evidence-based intervention.[2] By starting the conversation of partnership with schools early and emphasizing what MEC Math Corps does and does not do (e.g., doesn't supplant core instruction, is not intensive, tier 3 intervention), we significantly increase the likelihood of fidelity and effective integration of MEC Math Corps into MTSS math frameworks.

8. MEC will provide a statement of work, which includes a timeline of the project, and budget summary, and a budget detail for progress monitoring and continuous improvement of program implementation.

[2] E.g., www.proventutoring.org. Contact Holly Windram for specific research studies demonstrating both efficacy and effectiveness of MEC Math Corps for diverse populations of learners in diverse settings: hwindram@hopenetwork.org

These items were provided to Kellie Flaminio, Department Analyst/Early Literacy Grant Coordinator, Office of Educational Supports, and Superintendent Koenigsknecht, CCRESA, on October 11, 2025.

MEC will provide trainings for newly identified schools as the programs expand.

Please see Appendix C for MEC Math Corps Trainings for all participating schools.

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Burns, K.M., Jimerson, S.R. VanDerHeyden, A. M., & Deno, S.L., (2016). Toward a unified Response-to-Intervention model: Multi-tiered systems of support. In S.R. Jimerson, M.K.

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Codding, R. Nelson, P. M., Parker, D. C., Edmunds, R., & Klaft, J. (2022). Evaluation of a math tutoring program implemented with community support: A systematic replication & extension. *Journal of School Psychology*.

The National Mathematics Advisory Panel. (2008). Reports of the task groups and Subcommittees. Washington, DC: U.S. Department of Education

Parker, D. C., Nelson, P. M., Zaslofsky, A., Foegen, A., Kaiser, P., Kanive, R, & Heistad, D. (2019). Evaluation of a Math Intervention Program Implemented with Community Support. *Journal of Research on Educational Effectiveness.*

Appendix A: Assessment Procedures and Research Base

Math Corps uses two assessments to track student progress throughout the year – Mathway and Fact Fluency. Mathway is a web-based assessment with content that aligns with state and national curricular standards related to whole and rational number understanding as well as algebraic reasoning. Mathway is specific to each grade and consists of 23 to 34 items that increase in difficulty. The assessment is predictive of student performance on nationally adopted achievement tests and evidence supports its use as a tool for determining Math Corps eligibility and when tutoring can be removed.

Student progress on math facts is assessed using multi-skill Fact Fluency assessments that include basic addition, subtraction, multiplication, and division math facts. The Fact Fluency assessments are short duration, timed tests; students are given one minute to work through problems. Tutors score the Fact Fluency assessments by determining the total number of problems correct within the one-minute time limit and compare the number correct to the Math Corps benchmark of 30 problems correct in one minute.

Mathway and Fact Fluency Administration Schedule

Fall Aug. 14-Sept. 29	Winter Jan. 2-Feb. 2	Spring Apr. 22-May 24
Benchmark All Students	Progress Check Active Students	Benchmark All Students

Selection of Research for Mathway Assessment

- Hall, G.J. & Nelson, P.M. (2022). Mathway: A formative assessment tool for Math Corps. *National Science and Service Collaborative*.

Selection of Research for Fact Fluency Assessment

- Foegen, A. (2000). Technical adequacy of general outcome measures for middle school mathematics. Diagnostique, 25, 175–203.
- Foegen, A., & Deno, S. L. (2001). Identifying growth indicators for low-achieving students in middle school mathematics. Journal of Special Education, 35, 4–16.

Appendix B: Intervention Research Base

MEC Math Corps delivers intervention in the form of instructional lessons, which vary in number from 20 in eighth grade to 39 in sixth grade. Lessons use one of several intervention components to improve targeted subskills required to work effectively with whole and rational numbers. The first component includes conceptual-based instruction using the Concrete, Representational, Abstract (CRA) approach. The second component focuses on procedural accuracy and includes direct instruction followed by supervised practice with Cover, Copy, and Compare (CCC). The third component uses Cognitive Strategy Instruction (CSI) to support development of the skill for word problem solving.

Intervention components were applied in a sequence for each skill. For example, in 5th grade students first receive CRA to better develop the conceptual basis for adding and subtracting fractions with dissimilar denominators; then receive CCC to become efficient at accurately applying the corresponding computational strategies; and then receive CSI to be able to solve word problems involving fractions with unlike denominators. Students are required to demonstrate mastery—defined as 85% correct on a brief informal assessment of intervention content—before advancing among the intervention components. Students also receive short duration fact fluency practice using Explicit Timing weekly to improve the use and selection of efficient strategies that students already know to encourage automaticity.

For each intervention component sources of empirical evidence for intervention effectiveness are listed below.

Selection of Research in Support of Conceptual-Based Intervention

- Agrawal, J., & Morin, L. L. (2016). Evidence-based practices: Applications of concrete representational abstract framework across math concepts for students w/ mathematics disabilities. Learning Disabilities Research & Practice, 31(1), 34-44.
- Witzel, B. S., Mercer, C. D., & Miller, M. D. (2003). Teaching algebra to students with learning difficulties: An investigation of an explicit instruction model. Learning Disabilities Research & Practice, 18(2), 121-131.
- Flores, M. M. (2010). Using the concrete-representational-abstract sequence to teach subtraction with regrouping to students at risk for failure. Remedial and Special Education, 31(3), 195-207.
- Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools. NCEE 2009-4060. What Works Clearinghouse.
- Carbonneau, K. J., Marley, S. C., & Selig, J. P. (2013). A meta-analysis of the efficacy of teaching mathematics with concrete manipulatives. Journal of Educational Psychology, 105(2), 380.

Selection of Research in Support of Cover, Copy, Compare

- Skinner, C. H., Turco, T. L., Beatty, K. L., & Rasavage, C. (1989). Cover, copy, and compare: A method for increasing multiplication performance. School Psychology Review.
- Poncy, B. C., Skinner, C. H., & Jaspers, K. E. (2007). Evaluating and comparing interventions designed to enhance math fact accuracy and fluency: Cover, copy, and compare versus taped problems. Journal of Behavioral Education, 16(1), 27-37.
- Codding, R. S., Eckert, T. L., Fanning, E., Shiyko, M., & Solomon, E. (2007). Comparing mathematics interventions: The effects of cover-copy-compare alone and combined with performance feedback on digits correct and incorrect. Journal of Behavioral Education, 16(2), 125-141.
- Skinner, C. H., McLaughlin, T. F., & Logan, P. (1997). Cover, copy, and compare: A self-managed academic intervention effective across skills, students, and settings. Journal of Behavioral Education, 7(3), 295-306.
- Stocker Jr, J. D., & Kubina Jr, R. M. (2017). Impact of Cover, Copy, and Compare on fluency outcomes for students with disabilities and math deficits: A review of the literature. Preventing School Failure: Alternative Education for Children and Youth, 61(1), 56-68.
- Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). Assisting Students Struggling NCEE 2009with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools. -4060. What Works Clearinghouse.

Selection of Research in Support of Cognitive Strategy Instruction

- Montague, M. (1997). Cognitive strategy instruction in mathematics for students with learning disabilities. Journal of learning disabilities, 30(2), 164-177.
- Hutchinson, N. L. (1993). Effects of cognitive strategy instruction on algebra problem solving of adolescents with learning disabilities. Learning Disability Quarterly, 16(1), 34-63.
- Montague, M., & Dietz, S. (2009). Evaluating the evidence base for cognitive strategy instruction and mathematical problem solving. Exceptional Children, 75(3), 285-302.
- Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J. R., & Witzel, B. (2009). Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools. NCEE 2009-4060. What Works Clearinghouse.
- Carr, Martha, Gita Taasoobshirazi, Rena Stroud, and James M. Royer. "Combined fluency and cognitive strategies instruction improves mathematics achievement in early elementary school." Contemporary Educational Psychology36, no. 4 (2011): 323-333.

Selection of Research in Support of Fact Fluency Practice

- Nelson, P. M., Burns, M. K., Kanive, R., & Ysseldyke, J. E. (2013). Comparison of a math fact rehearsal and a mnemonic strategy approach for improving math fact fluency. Journal of School Psychology, 51(6), 659-667.
- Nelson, P. M., Parker, D. C., & Zaslofsky, A. (2016). The relative value of growth in math fact skills across late elementary and middle school. Assessment for Effective Intervention, 41, 184-192.
- Van Houten, R., & Thomas, C. (1976). The effects of explicit timing on math performance. Journal of Applied Behavior Analysis.

Appendix C: MEC Math Corps Training and Internal Coach Empower Hour

Date	MEC Math Corps	
	Cohort 1	
8/14/23	AC Training/SKO/LMS Modules	Zoom/LMS
8/15/23	Zoom/LMS Modules/in-person social gathering	Zoom/LMS/Radisson Hotel Lansing
8/16/23	In-person practice day	Radisson Hotel Lansing
8/17/23	Zoom/ LMS Modules	Zoom/LMS
8/18/23	Zoom/ LMS Modules	Zoom/LMS
8/21/23	Zoom/LMS/Corps Day	Zoom / LMS
8/22/23	Members report to school	School Site
	Cohort 2	
8/28/23	AC Training/SKO/LMS Modules	Zoom/LMS
8/29/23	Zoom/LMS Modules/in-person social gathering	Zoom/LMS/Radisson Hotel Lansing
8/30/23	In-person practice day	Radisson Hotel Lansing
8/31/23	Zoom/ LMS Modules	Zoom/LMS
9/1/23	Zoom/ LMS Modules	Zoom/LMS
9/5/23	Zoom/LMS/Corps Day	Zoom / LMS
9/6/23	Members report to school	School Site
	Cohort 3	
10/23/23	AC Training/SKO/LMS Modules	Zoom/LMS
10/24/23	Zoom/LMS Modules	Zoom/LMS
10/25/23	In-person practice day	Radisson Hotel Lansing
10/26/23	Zoom/ LMS Modules	Zoom/LMS
10/27/23	Zoom/LMS/Corps Day	Zoom/LMS
10/30/23	Members report to school	School Site
	Cohort 4	All Virtual
1/15/24	AC Training/SKO/LMS Modules	Zoom/LMS
1/16/24	Zoom/LMS Modules	Zoom/LMS
1/17/24	Zoom/LMS Modules	Zoom/LMS
1/18/24	Virtual Practice Day	Zoom
1/19/24	Zoom/LMS/Corps Day	Zoom/LMS
1/22/24	Members report to school	School Site

MICHIGAN EDUCATION CORPS

Empower Hour Monthly Call Calendar

Date	Time	Topic(s)*
August 16th and 30th	9:00 AM - 11:00 AM	MEC Kick-off Training and program year expectations
September 20, 2023	7:45 AM – 8:45 AM 3:00 PM - 4:00 PM	Assessment data, intervention selection, teacher buy-in
October 18, 2023	7:45 AM – 8:45 AM 3:00 PM - 4:00 PM	Member support and monthly observations
November 14, 2023** (MEMBERS JOIN CALL)	7:45 AM – 8:45 AM 3:00 PM - 4:00 PM	Looking at data and student growth; barriers
December 2023	NO MEETING	NO MEETING
January 17, 2024	7:45 AM – 8:45 AM 3:00 PM - 4:00 PM	Looking at fidelity and fit
February 21, 2024	7:45 AM – 8:45 AM 3:00 PM - 4:00 PM	Program Alignment
March 20, 2024	7:45 AM – 8:45 AM (only option)	Remaining Diligent
April 2024	NO MEETING	NO MEETING
May 15, 2024 (MEMBERS JOIN CALL)	7:45 AM – 8:45 AM 3:00 PM - 4:00 PM	EOY Wrap-Up

*Topics subject to change

**November call will occur on Tuesday, November 14 due to many schools closed on Wednesday, November 15