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BALTIMORE CITY  

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PUBLIC SCHOOLS

200 EAST NORTH AVENUE  
BALTIMORE, MD 21202

Data From Schools

July 5th 2022

6/5/2022

Good afternoon OOA,

You will find attached to this document several studies to help you understand the work we do with Title 1 children.

**Here's a bit of context to help your review.**

1. We are currently a successful vendor for Baltimore City Schools, most recently approved for PQS Extended Learning Services 2021-1, with a total budget of \$2,250,000 to be used in the next three years. (Under Simplify Math Engagement Center LLC)
2. We are a small, (under 500K in revenue in 2021), local (Baltimore County) based, certified minority owned (# 21-001) woman owned business that is 3 years old in August 2022.
3. Our specialization is in mathematics which is a key area of focus and interest for Baltimore City Schools. We most recently met with members with the Office of Teaching and Learning - specifically - Kerry Steinbrenner (Teaching and Learning Coordinator for Mathematics) and Matt Barrow, (Coordinator of Multi-tiered Systems of Support). Ms. Steinbrenner expressed she is getting requests for math help and based on our data, she suggested that we market our services to schools in the city that have needs in math and English.
4. Given your October 15th 2021 ESSA Consolidated Strategic Plan, our work addresses many of the identified priorities - specifically Expanded Enrichment Opportunities, Algebra Readiness in the Middle School for the Summer and School Year, Small Group Targeted Intervention, and increasing pedagogical knowledge with your math teachers. In these categories which you will read, we have quantifiable evidence of our effectiveness through both student scores as well as teacher/parent/student feedback.
5. We are a young, small, local company doing very good work in Baltimore City and would like to expand our work to ensure we use the funding the city has allotted. **Your existing staff from Teaching and Learning requested that we work together to provide the support and data required to help them with continued ESSA funding.**

Please feel free to give me a call or contact me directly if you have any questions. I'm eager and excited to present some of our good work to you for your review.

Warmest regards,

*Tong Ling (Phyllis) Hillwig*

Phyllis Hillwig EdD  
CEO and Founder  
Simplify Math Engagement Center LLC (DBA Eureka Learning)  
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**Study 1: Math and Science Preparation for Test of Essential Academic Skills  
(TEAS Prep for Nursing School Entrance)**

We will need to hire the three secondary English teachers for both camps. They will work from June 29- August 7, 2020. It is possible to pay a one-time flat fee for the teachers to ensure they are paid in a timely manner. It is proposed that we will contract each teacher at a flat fee of \$2500.00 for the combined Summer camps.

have spoken with Dr. Anderson regarding the continuation of Dr. Hillwig 's contract until August 30, 2020, which will conclude the PEMSS funding period. Dr. Hillwig will provide the math academic support for the 2-week PEMSS Summer camp as well as the five-week Summer Melt Camp. Dr. Hillwig's contract will be funded under the Summer Melt Camp August 2020- September 2020. Please let me know the process to move this request forward.

We will need to hire the three secondary English teachers for both camps. They will work from June 29- August 7, 2020. It is possible to pay a one-time flat fee for the teachers to ensure they are paid in a timely manner. It is proposed that we will contract each teacher at a flat fee of \$2500.00 for the combined Summer camps.

Targeted Students	Seniors, part of the GEAR Up program on the Allied Health Track
School	Edmondson WestSide High School
Partners/Funders	Morgan State University Department of Nursing
Description of the Study/Intervention	<p>Morgan State purchased ATI TEAS (Test of Essential Academic Skills) electronic test prep tool to help Edmondson seniors interested in allied health to test into nursing programs of their choice. Approximately 20-25 seniors were in a class that had students working through the online assessment preparation platform starting September 2019. The class was not graded and was supplemental to support their trade interest.</p> <p>Within a few weeks, it was evident to the Morgan State team that the students were not making progress with the technology tool purchased. The scores remained unchanged and the students were not engaged with the material, finding it too difficult despite the videos and the personalized support. The average test score among the group in math and science was less than 30% proficiency. Anticipating the lack of student progress would have negative implications to their grant, Morgan State hired Eureka! (known then as Simplify Math Engagement Center) to run in-person, small group intervention to support the math and science content found on the</p>

	<p>TEAS test. The Eureka team (3 tutors and a lead) came consistently for 1.5 hours 2x a week for a total of 10 weeks during the fall of 2019 and part of 2020 until schools were shut down for COVID.</p> <p><b>Intervention:</b> Eureka took the topics from the TEAS prep course and outlined key skills required to master those topics. Prior to each session, students would take a pre-quiz (3-5 questions) to determine skill-level. The students then broke into groups of 4-5 rotating 15 minutes between 4 stations (fluency, problem-solving, test prep strategies, content/concept review). For example, if Ratio and Proportion was a key topic, student groups would have 3-5 questions on ratio topics similar to ones on the TEAS test. They would then go through rotations of finding ratios (fluency), working on word problems with ratios, practicing problems from the test that have ratios, and then reviewing what a ratio was conceptually). At the end of the session, students took a post-test quiz (similar 3-5 questions) to determine whether they have mastered the skills that were part of the pre-test. Each session had prior as well as new skills to test mastery and understanding. While there were science supports as well, the majority of the focus was on math.</p> <p><b>Results:</b> Of the 20 students, 9 of them came consistently and worked through the intervention with the Eureka team. For those that came, their TEAS test-prep scores were significantly higher than without the intervention. Most of them with an average score in both math and science no less than 78% proficiency.</p> <p>The Morgan State team as well as the Edmondson leaders were so impressed, they hired Eureka to continue with them over the spring, summer, fall and to date, we still work with Edmondson students. As a result of the work, we started working with University of Maryland School of Nursing to perform similar activities.</p>
Quantifiable Data and Evidence of Growth Summary	Students in the study (n=20-25) Students consistent with Eureka Intervention (n=9) average pretest scores prior to intervention (30%) average pretest scores of those consistently coming (78%)
Contact for Further Validation of the Study	<p>Maija Anderson - Assistant Professor, Director of Nursing, School of Community Health &amp; Policy <a href="mailto:maija.anderson@morgan.edu">maija.anderson@morgan.edu</a></p> <p>Mia Fisher - Math Department Chair <a href="mailto:MFisher01@bcps.k12.md.us">MFisher01@bcps.k12.md.us</a></p> <p>Stacey Royster - Vice Principal, Edmondson Westside High School <a href="mailto:SVRoyster@bcps.k12.md.us">SVRoyster@bcps.k12.md.us</a></p>
Dates of Study	October 2019 - January 2020

<p>Other Factors to Consider</p>	<p>Most of the pre and post-test quizzes were done on paper (because it was math and we wanted to see their work) and we did not keep student records electronically after the program for student privacy reasons. Because we were a vendor to Morgan State and not part of Edmondson Westside staff, we didn't have access to the cumulative test scores that were in an electronic database at the school. If you contact the school, they may have their pre and post-test scores to verify our averages and records.</p> <p>Of the 20-25 students in the class, 9 that were consistent but the rest were consistently late, absent, or inconsistent with respect to attendance and therefore were not counted in our post-test reporting. If the class was a requirement for graduation, we believe that more students would have improved with the intervention.</p>
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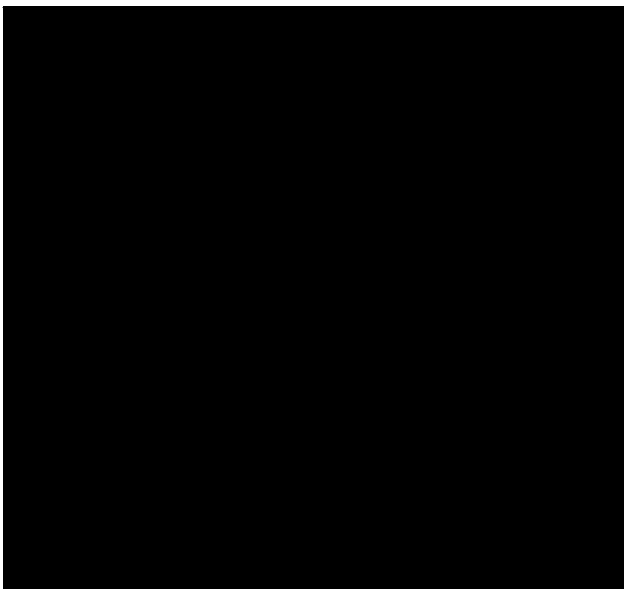
## Study 2: YouthWorks - Summer College and Career Readiness

Targeted Students	Graduated Seniors - YouthWorks Program- College Readiness
School	Edmondson WestSide High School
Partners/Funders	Morgan State University Department of Nursing
Description of the Study/Intervention	<p>Upon the success of the fall TEAS prep program, Morgan State asked Eureka to support a five-week summer program (College Readiness) for recent graduates to participate in small group virtual math and English review, anticipating the students will need to have a minimal Accuplacer score to test out of developmental English and Math courses if entering college or trade.</p> <p>Approximately 20 5th/6th year seniors were invited to participate in the camp from mostly Edmondson Westside High School and a few from Douglas High School. About 15 attended regularly working in small groups based on ability. The groups were fluid, so that if a student was strong in one topic, they moved to another group working on the same topic but at a deeper level.</p> <p><b>Intervention:</b> The students participated 3 hours each day, two days a week for 5 weeks. The first 1.5 hours was dedicated to math, the other 1.5 to English. Each student was in one of three small groups (5-7 students in a group) and logged on virtually with an assigned tutor. The tutoring team went through the topics required for success in Accuplacer math focused skills, fluency, problem-solving, and test-taking strategies.</p> <p><b>Results:</b> Most of the students stayed on the five week summer program and developed a strong relationship with the tutors and the other students in the group.</p>
Quantifiable Data and Evidence of Growth Summary	<p>Due to the fact that the camp was entirely virtual, and the program leaders did not want the graduates to think of this as 'school' but an optional prep class to get them ready for college, we did not have a pre and post-test instrument to use for measurement of student growth. However, we did provide a student survey and their results (screenshots) are below. For the full survey results, please contact <a href="mailto:phyllis@eureka.com">phyllis@eureka.com</a> and I will send you the entire excel file.</p>
Contact for Further Validation of the Study	<p>Joice Stokes-James (retired) main coordinator for the program.  Majja Anderson - Assistant Professor, Director of Nursing, School of Community Health &amp; Policy <a href="mailto:majja.anderson@morgan.edu">majja.anderson@morgan.edu</a></p>

Dates of Study	July 2020 - August 2020
Other Factors to Consider	While we did also complete English/reading intervention the only student survey available was the math one. Based on lessons learned, we would include a pre and post-test to document gains.

Full Name

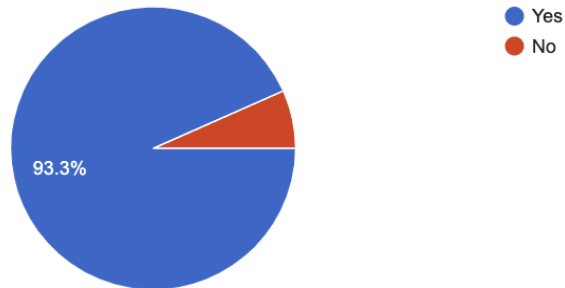
15 responses



Would you recommend this experience to a friend?

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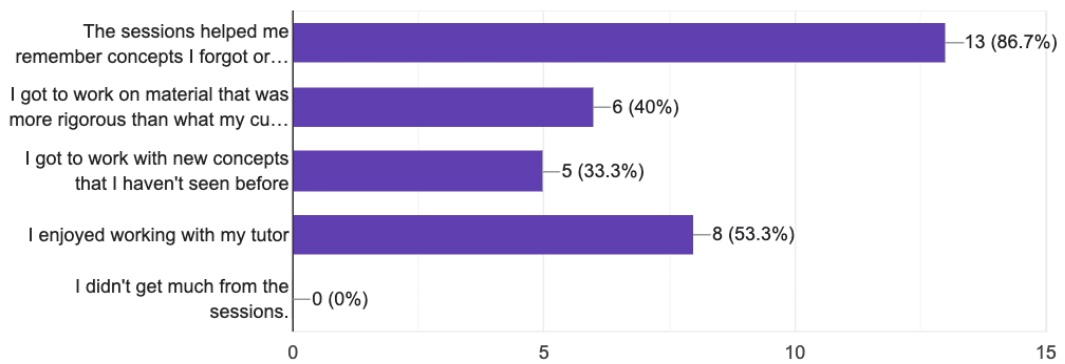
15 responses



What did you get most out of the sessions? Check all that apply.

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15 responses

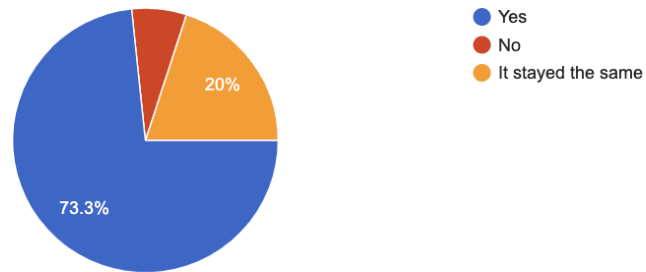




Did your confidence in math increase after coming to these sessions?

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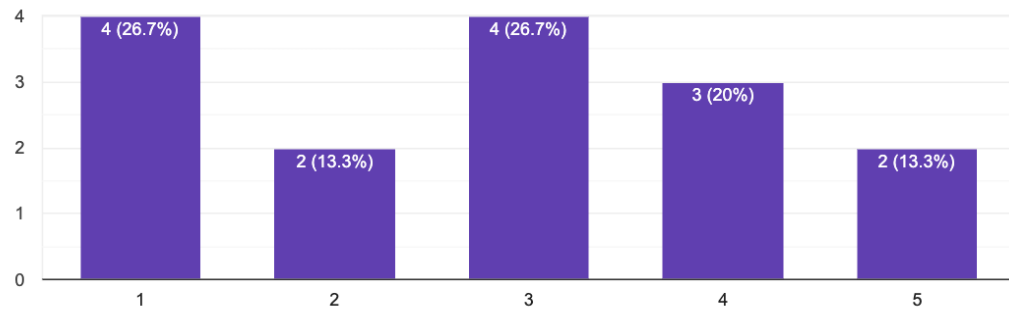
15 responses



Did you use Khan Academy to practice your skills in math?

 Copy

15 responses



Please share any other feedback you'd like us to know.

15 responses

- N/A
- Maybe don't go over stuff again if nobody said they needed it.
- I honestly think it was a great five weeks, I don't have any feedback.
- Jamal Jackson Jr
- I have learned more and I am more confident with tests, quizzes and the s.a.t. now.
- I've really enjoyed working with my tutor these past weeks he's been really helpful and patient with me .
- i was very satisfied with my learning experience, the teachers made learning the new concepts a very smooth process. and brought concepts i never understood to new and brighter light.
- Just so you know I understand Math for a while so mostly everything you taught us I already knew thank you for the more information you gave me about math.
- The session was great! I was able to review material that I thought I had forgotten. Nikita was a great tutor, I loved his teaching methods.
- I just want to thank you guys for all the help, I needed it. Y'all were very helpful.
- none
- Don't be boring
- This program helped prepare me for job interviews and college. It's very helpful.
- It was a really cool experience for me and it definitely helped me a lot.

### Study 3: One-on-One Tutoring for APEX Seniors

Targeted Students	Seniors at risk of not graduating, using APEX Learning tools
School	Edmondson WestSide High School
Partners/Funders	Morgan State University Department of Nursing (Sept 2020-May 2021)
Description of the Study/Intervention	<b>Intervention:</b> Edmondson wanted us to be available for 1-1 tutoring as needed during the school year to provide additional support for those who are at risk of not meeting graduation requirements.

	<p>Initially, we created a schedule for the students and teachers to use, knowing when support was available based on the subject or topic at hand. This worked some of the time, but the majority of the time, the students or teachers/coordinators reached out to use directly to get support for individual students.</p> <p>For the duration of the school year in 2020-2021 we worked with a minimum of 10 students, providing 1-1 tutoring as needed.</p> <p>Our one-on-one tutoring sessions had a few key elements - tutors who were Socratic, relatable, who had content mastery and strong pedagogical training. These are based on research-based best practices in effective tutoring instruction. We used the research below to inform our one-on-one tutoring strategies.</p> <p>Best Practices for Tutoring Strategies  Lepper, M. R., Woolverton, M. (2002) The Wisdom of Practice: Lessons Learned from the Study of Highly Effective Tutors. <i>Improving Academic Achievement</i>, (7): <a href="http://cachescan.bcub.ro/e-book/E2/580695/135-208.pdf">http://cachescan.bcub.ro/e-book/E2/580695/135-208.pdf</a>  Wood, W.B., Tanner, K.D. (2012) The Role of the Lecturer as Tutor: Doing What Effective Tutors Do in a Large Lecture Class. <i>CBE-Life Sciences Education</i>, (11):3-9. <a href="http://doi.org/10/1187/cbe.11-12-0110">http://doi.org/10/1187/cbe.11-12-0110</a>  High-Dosage Tutoring  Safran, S., Slavin R.E., Manko, J. Manekin, S., (2021) Literacy Tutoring for Baltimore: What We Know, Where We Are, and How to Move Forward. The Abell Report. Volume 34, No. 2  <a href="https://eric.ed.gov/?id=ED613417">https://eric.ed.gov/?id=ED613417</a>  de Ree, J., Maggioni, M.A., Paulle, B., Rossignoli, D., Ruijs, N., Walentek, D. (2021) Closing the income-achievement gap? Experimental evidence from high-dosage tutoring in Dutch primary education.  <a href="http://osf.io/preprints/socarxiv/qepe2/download">http://osf.io/preprints/socarxiv/qepe2/download</a>  de Ree, J., Maggioni, M.A., Paulle, B., Rossignoli, D., Walentek, D. (2021) High dosage tutoring in pre-vocational secondary education: Experimental evidence from Amsterdam. <a href="https://osf.io/r56um/download">https://osf.io/r56um/download</a>  Tutor Evaluation  Mostow, J., Aist, G. (2001) Evaluating tutors that listen: An overview of Project LISTEN. <i>The MIT Press</i> (169-234).  <a href="https://psycnet.apa.org/record/2001-10194-006">https://psycnet.apa.org/record/2001-10194-006</a>  Ritter, S., Anderson, J.R., Koedinger, K.R., Corbett, A. (2007) Cognitive Tutor: Applied research in mathematics education. <i>Psychonomic Bulletin &amp; Review</i>, 14(2), 249-255. <a href="http://doi.org/10.3758/BF03194060">http://doi.org/10.3758/BF03194060</a></p>
<p>Quantifiable Data and Evidence of Growth Summary</p>	<p>Based on the information from Ms. Fitzpatrick the coordinator and Stacey Royster, the Vice Principal, over 90% of the students who came to our sessions found them valuable and improved their understanding, raising test and quiz scores.</p>

Contact for Further Validation of the Study	Maija Anderson - Assistant Professor, Director of Nursing, School of Community Health & Policy <a href="mailto:maija.anderson@morgan.edu">maija.anderson@morgan.edu</a> Tamara FitzPatrick - APEX coordinator <a href="mailto:TFitzpatrick@bcps.k12.md.us">TFitzpatrick@bcps.k12.md.us</a> Stacey Royster - Vice Principal, Edmondson Westside High School <a href="mailto:SVRoyster@bcps.k12.md.us">SVRoyster@bcps.k12.md.us</a>
Dates of Study	September 2020 - May 2021
Other Factors to Consider	While the one-on-one tutoring was effective for each student, other than anecdotal information from the students and Ms. Fitzpatrick and Ms. Royster, we did not have exact scores or data on how many points did the students who received tutoring improve from a test/quiz or grade perspective. Many of these students did not come to school consistently and were difficult to track down. Those that did come to their sessions 100% of them reported improved confidence. Ms. Royster wanted to keep us on for the school year 2021-2022 and we will be discussing our continuation with the school for 2022-2023 in July of 2022. The supports were virtual due to COVID which also made it challenging to track the students down for their scheduled sessions.

Tutoring Schedule below before the students went to schedule directly with each tutor.

## TUTOR TIME!

**Attention:** Edmondson WestSide Students! Please come if you need help for tutoring! Make sure you have your login-information ahead of time and the work you'd like to work on!

Zoom Link is the same each time: <https://us02web.zoom.us/j/4763364967>

DATES	TIMES	SUBJECTS	TUTOR Contact
MONDAY	4:00-4:30pm	Math, English, Chemistry, Modern World History	Lauren <a href="mailto:ren@simplifymathcenter.com">ren@simplifymathcenter.com</a>
TUESDAY	3:30-4:30pm	Math, Biology, Probability and Statistics	Clare <a href="mailto:clare@simplifymathcenter.com">clare@simplifymathcenter.com</a>
WEDNESDAY	10:00-11:00am	Math, English	ken <a href="mailto:ken@simplifymathcenter.com">ken@simplifymathcenter.com</a>
THURSDAY	4:00-4:30pm	Math, English, Chemistry, Modern World History Math, Biology Probability and Statistics	Lauren <a href="mailto:ren@simplifymathcenter.com">ren@simplifymathcenter.com</a> Clare <a href="mailto:clare@simplifymathcenter.com">clare@simplifymathcenter.com</a>
FRIDAY	3:30-4:00pm	Math, Computer Science, Physics	charlie <a href="mailto:charlie@simplifymathcenter.com">charlie@simplifymathcenter.com</a>

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**Study 3: High-Dosage Enrichment For PreK and K students**

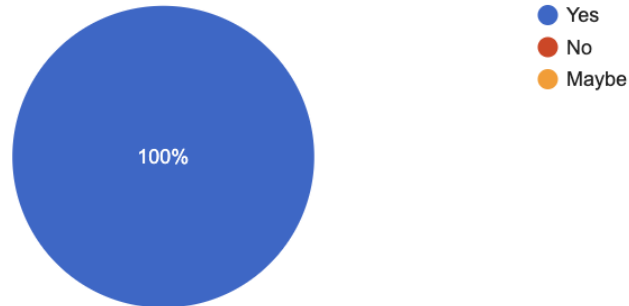
Targeted Students	Grades K and PreK students at grade-level
School	New Song Academy
Partners/Funders	New Song Academy via Professional Development Grant
Description of the Study/Intervention	<p><b>Intervention:</b> Four students from grade K and PreK were provided 25 minutes, 2x a week, virtual intervention for 10 weeks. The students were working on topics beyond their existing grade level -focused on addition and subtraction fluency, to provide additional enrichment for those who did not need remediation. The students also had to do a minimum of 15 minutes a day/3 days a week. At the end of the 10 weeks, the teachers and parents filled out a survey to confirm quantifiable growth with number facts and confidence. The students also reported Khan minutes each week.</p> <p>With the strong results, the school is looking to add this for all their enrichment students grades PreK - 8 for the 2022-2023 school year and is currently fundraising using the SongBird Enrichment model as a differentiator for the school.</p>
Quantifiable Data and Evidence of Growth Summary	100% of the families wanted to continue the program. Both teachers of K and PreK wanted to continue the program and saw measurable gains in test scores and ability. Both sets of students completed at least 50% more time on Khan practicing than expected.
Contact for Further Validation of the Study	Doug Fireside, Principal <a href="mailto:DLFireside@bcps.k12.md.us">DLFireside@bcps.k12.md.us</a> Jayson Green, Executive Director, <a href="mailto:jgreen@newsongclc.org">jgreen@newsongclc.org</a> Taneka Sleeper, Grade Pre-K teacher <a href="mailto:TSleeper@bcps.k12.md.us">TSleeper@bcps.k12.md.us</a> Nicole Ahern, Grade K teacher <a href="mailto:NMahern@bcps.k12.md.us">NMahern@bcps.k12.md.us</a>
Dates of Study	January 2022-March 2022
Other Factors to Consider	The intervention happened during small group center time so that the teachers could continue to work with students that needed more attention.

**Parent Survey Results below.**

### 1. Would you recommend New Song continue the Song Bird Enrichment program?

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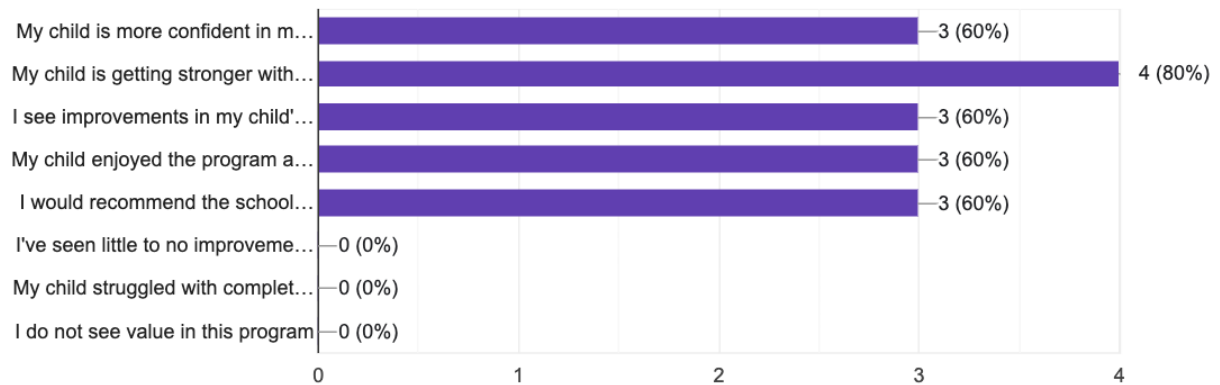
5 responses



### 2. Please check all that apply.

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5 responses



3. What would you tell the leadership, parents, and others in the New Song Community about this program?

5 responses

I would say that it prepares children for more advanced math and problem solving.

The program is helpful to get a head start on the children's learning ability.

The program is awesome!! I love that I get a weekly update on my child's progress.

af

It's very helpful fun and it challenges the children

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4. How can we improve the program?

5 responses

Not sure at this point. It's really been helpful.

Technology and equipment from the school for the homework activities.

I didn't have any challenges with the program. The at home app was very easy to use and very convenient as we were able to log on at time of day to work on Oceans math skills.

ad

I would say switch up to do different activities as far as counting

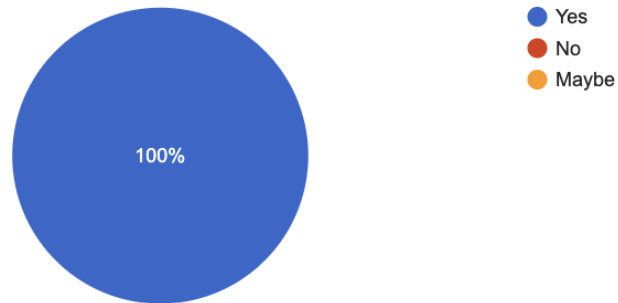
**Teacher Survey Results below.**



1. Would you recommend New Song continue the Song Bird Enrichment program?

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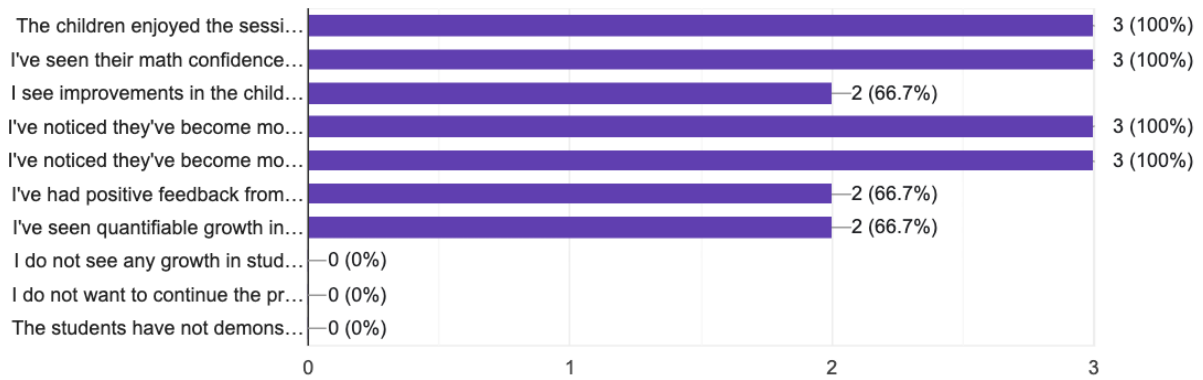
3 responses



2. Please check all that apply.

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3 responses



3. What would you tell the leadership, parents, and others in the New Song Community about this program?

3 responses

They need and should implement this program at part of enrichment for students that are on grade level or above grade level math.

The kids really looked forward to these sessions each week. They were actively engaged each session and love to share what they experience and learn.

The program is helping the students to have fun while learning math skills.

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4. How can we improve the program?

3 responses

Nothing at this current time

Logging on can sometimes be a hassel so maybe coming up with an easier way to log on.

Before the program starts, the students could be shown how to work the tablets.

**Flyer - They are using it for recruiting and fundraising based on the program.**



# New Song

## SongBird Pilot Results

### Program Overview

Four students from both Pre-K and K were selected to receive ten weeks of enrichment during the school day. During this time they worked on math concepts beyond the class curriculum. Children also completed a minimum of 30 minutes a week of Khan Academy practice for a total of 300 minutes outside of school.



# 100%

Teachers and Families  
Recommend Continuing  
the Program

### Practice Highlights

#### Grade PRE-K

- **Average extra practice a week: 513 minutes, 71% above 300 min expectation!**

#### Grade K

- **Average extra practice a week: 755 minutes, 150% above 300 min expectation!**

### Teacher Feedback

- I've seen quantifiable improvements in test scores since the program began.
- They need to implement this program as part of enrichment for students that are on grade level or above grade level math.
- The kids really looked forward to these sessions each week. They were actively engaged in each session and loved to share what they experienced and learned.
- The program is helping the students to have fun while learning math skills.
- They have become more fluent in overall number sense and computation skills.

### Parent Feedback

- My child is getting stronger in concepts beyond what is expected in school.
- The program is helpful to get a head start on the children's learning ability.
- The program is awesome!! I love that I get a weekly update on my child's progress.
- It's very helpful, fun, and it challenges the children.
- I would say that it prepares children for more advanced math and problem-solving.
- I see improvements in their math skills and number sense.

### Study 4: Grades 6-8 Small Group and One-on-One Tutoring in ELA and Math

Targeted Students	Grades 6-8, English and Math
School	Franklin Square Elementary and Middle School
Partners/Funders	University of Maryland Department of Nursing
Description of the Study/Intervention	<p><b>Intervention:</b> At least one math and English tutor came to support teachers at Franklin Square Middle School with a variety of needs - small group intervention, 1-1 tutoring, and whole class teaching.</p> <p>Originally, the intervention was high-dosage tutoring - working in small groups, each of our tutors work with a selected group of students twice a week, developing rapport and focusing on specific content so that we can measure pre and post-intervention results.</p> <p>Due to the needs of the school and teachers, (lack of substitutes, teachers leaving, shortage of staff, classroom challenges) We were asked to triage what the teacher needed that day and time. The teachers and staff found our team tremendously helpful and have asked us to continue our work throughout the school year 2022-2023.</p>
Quantifiable Data and Evidence of Growth Summary	FSMS teachers and staff who have been identified in the report can all attest to their students' growth and our tutor's intervention that produced positive, quantitative results.
Contact for Further Validation of the Study	<p>Each of the teachers noted in the March report should have specific quantifiable evidence of our support. The other person is our program lead, - Dr. Vanessa Fahie, Maija Anderson - Assistant Professor, Director of Nursing, School of Community Health &amp; Policy <a href="mailto:majja.anderson@morgan.edu">majja.anderson@morgan.edu</a></p> <p>She has seen our work at Edmondson Westside and brought us to Franklin Square Middle School for the 2021-2022 school year.</p>
Dates of Study	October 2021-June 2022 (School Year 2021-2022)
Other Factors to Consider	While the original intent was to support a small group of students with high-dosage tutoring, based on the varying needs of the teachers, we as a team, decided to support the teachers in whatever way they needed from us at the time which they found to be the most effective use of our skills. The March progress report shows the varying work being asked of us by the teachers.



## March 2022 Franklin Square Progress Report

### Major Accomplishments this term:

This spring we have found three tutors that have developed strong relationships with both teachers and students. Across the **thirteen visits** that we have made to Franklin Square this month, we have worked on average with about **12 students** per visit. However, this number varies widely. Some days tutors work with upwards of 60 students across all classes, and other days they focus on just a few students. In total, our tutors provided about **80 hours** of additional support in the classroom. Our tutors are very conscientious of providing whatever support is needed for the teacher and we have received positive feedback from the teachers on all of our tutors.

### Selected highlights:

Date	Tutors	Teachers	Notable Achievements / Summary	Approx. Students worked with
3/1	Ellie Seguin	Ms. Lindsey (6th ELA)	Ellie worked with the sixth grade ELA to understand the difference between verbs and other parts of speech. This was an unusual day due to an altercation between a student and the teacher. As a result of the altercation, the teacher left and the tutor took over.	20
3/2	Aszana Lopez-Bell	Ms. Berkeley (6th Math)	Students were working on labeling the dimensions of shapes. Because 8th-grade students were working on iReady, Aszana worked with 6th-grade math.	20
3/3	Aszana Lopez-Bell	Ms. Arrington (7th Math)	Helped to break down a problem with a small group that class was going over.	4
3/3	Ellie	Ms.	In the ELA class, Ellie assisted with helping	10

	Seguin	Thurmon (7 & 8 ELA) Ms. Arrington (7th math)	students decode longer words and focus on reading comprehension.  In the math class, students were working on finding the area of common shapes.	
3/4/22	Aidan Ferro	Ms. Williams (8th math)	Students were working on calculating slope and were getting confused about positive or negative slope. Aidan was able to provide some tricks that helped students better understand the difference between the two.	6
3/8	Ellie Seguin	Ms. Lindsey and Ms. Arrington	Teachers were especially appreciative of their support on this day. Ellie assisted students in editing a narrative writing assignment and helped them focus on creating more complex sentences. In Ms. Arrington's class, students worked on converting fractions to decimals.	8
3/10	Ellie Seguin	Ms. Thurmon and Ms. Arrington	Teachers were vocal about their appreciation of how often the tutor jumps in to support students that need it. Students worked on figurative language in ELA. In math students continued to work on converting between fractions and decimals.	3
3/11	Aidan Ferro	Ms. Williams	Aidan reported that Ms. Williams is very happy with the tutoring support. Particularly some of the one-on-one support with one of her students (Austin). Aidan supported students in solving two step equations.	5
3/15	Ellie Seguin	Ms. Lindsey and Ms. Arrington	Ellie helped students to prepare for a quiz in health class during Ms. Lindsey's class and then helped in another section with a student who was preparing a presentation. In math class, Ellie supported Ms. Arrington's lecture on fractions with additional work written on the board.	10
3/16	Aszana Lopez-Bell	Ms. Arrington	Aszana supported students with word problems during Ms. Arrington's class. In addition, she went to several other classes as it was a half-day and a little less structured than usual.	15
3/18	Ellie Seguin	Ms. Thurmon	Ellie helped proctor a quiz in Ms. Thurmon's class today. Based on what Ellie has seen this	5

		and Ms. Arrington	year in class, the students have really grown as writers in the few months that Ellie has worked with them. In Ms. Arrington's class, the focus was on building independence and confidence in student math skills.	
3/22	Ellie Seguin	Ms. Lindsey and Ms. Arrington	Ellie took the initiative to play a vocabulary game with students during class. This was beneficial as some students were out of class and the lesson was not proceeding forward. In Ms. Arrington's class, Ellie assisted with helping students prepare for the upcoming test.	6
3/24	Ellie Seguin	Ms. Thurmon and Ms. Arrington	Ellie helped students prepare for an upcoming reading comprehension assignment. Students also needed support in essay writing and Ellie helped guide them to stronger essays. In Ms. Arrington's class, Ellie moved into a co-teaching role and helped support the class discussion with example problems on the board and probing questions to help them understand the problems better.	40
3/25	Aidan Ferro	Ms. Williams	Ms. Williams was particularly appreciative of the additional support today as students were reviewing for an assessment. Aidan was able to help students focus on setting up the problem and helped them develop strategies for finding the information they need from the problem they are given.	10
3/29	Ellie Seguin	Ms. Lindsey and Ms. Arrington	Ellie engaged students with more vocabulary practice in Ms. Lindsey's class. In Ms. Arrington's class, they continued to provide support around the room with additional examples and practice questions.	40
3/31	Ellie Seguin	Ms. Thurmon and Ms. Arrington	Ellie worked one-on-one with several students in Ms. Thurmon's class today and assisted them with their current English project. In Ms. Arrington's class, they helped with additional visual aids and one-on-one support.	30

**Study 5: Professional Development of Middle School Teachers for Summer Math Programming using Pre/Post Test and Puzzle Books**

Targeted Students	Grades 6-8 Math
School	Academy of College and Career Exploration
Partners/Funders	STEMBOARD Partnership
Description of the Study/Intervention	<p><b>Intervention:</b> STEMBOARD asked Eureka2 to provide middle school math professional development training to non-math teachers and paraprofessionals. (note: 1 of the 12 taught math). These instructors were hired to work over the summer to prepare students for key middle school math topics. Working with their math lead at the school, we created a pre and post-test that would test the core math skills that are required for grades 6-8 review. In addition to the pre and post-test, the instructors were trained to use visual puzzles to support their instruction.</p> <p>The professional development intervention was a full day. Each of the teachers took the same pre-test the students would take. The teachers then worked through small group rotations to four different stations that covered key topics - number sense, problem-solving, content knowledge, testing strategies.</p> <p>After the completion of the class, the teachers took the post-test the students would take so they see own improvement and understanding of the content. The teachers reported confidence in their math and pedagogy abilities to instruct the 6 week class with students in grades 6-8.</p>
Quantifiable Data and Evidence of Growth Summary	<p>The coordinator of the program sent us the student's pre and post-test scores. The school was happy that regardless of who the teacher was, the students who participated in the summer program consistently improved significantly on their post-test results in a very short timeframe of under six weeks.</p> <p>We also had the teachers who participated in the training to fill out an end of training survey. Both data portions are attached below.</p>
Contact for Further Validation of the Study	<p>Each of the teachers noted in the March report should have specific quantifiable evidence of our support. The other person is our program lead, - John FitzPatrick, who was the summer coordinator and lead: <a href="mailto:fitzpatrick@theaccesschool.org">fitzpatrick@theaccesschool.org</a></p> <p>In addition, all of the teachers who participated in the surveys, the email information is below under 'who has responded.' They will be able to provide additional data on the experience.</p>



Targeted Students	Grades 6-8 Math
Dates of Study	Training was June 2021 - Program implementation by the teachers was in July 2021.
Other Factors to Consider	This is a model of PD that included multiple people from Eureka running small groups and providing the teachers assistance with building their own math and pedagogy skills. Once they were confident, their ability to support the kids was clear based on the pre and post-test results. In this submission, we will include the Pre-post test and the puzzle books used by the teachers and students.

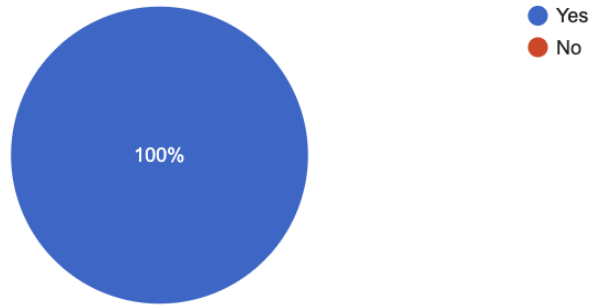
Name	WAIVER	PM PERMISSION	MATH DIAG out of 33	% score	Math POST test out of 32	% Score	% Increase
	x	x	7	21.21%	9	28.13%	32.59%
	x	x	10	30.30%	No Data	No Data	No Data
			3	9.09%	No Data	No Data	No Data
	x		no data	No Data	No Data	No Data	No Data
	x	x					
	x	x	3	9.09%	Did not complete test	Did not complete test	
	x	x	10	30.30%	9	28.13%	-7.19%
			no data	No Data	No Data	No Data	No Data
	x	x	20	60.61%	20	62.50%	3.13%
	x		no data	No Data	10	31.25%	No Data
	x		10	30.30%	8	25.00%	-17.50%
	x	x	5	15.15%	8	25.00%	65.00%
	X		no data	No Data	5	15.63%	No Data
	x	x	17	51.52%	21	65.63%	27.39%
	x		4	12.12%	12	37.50%	209.38%
			no data	No Data	15	46.88%	No Data
	x	x	7	21.21%	16	50.00%	135.71%
	x	x	7	21.21%	13	40.63%	91.52%
	x	x	17	51.52%	24	75.00%	45.59%
	x	x	15	45.45%	No Data	No Data	No Data
	x	x	8	24.24%	7	21.88%	-9.77%
	x	x	12	36.36%	13	40.63%	11.72%
	x - V	x	4	12.12%	7	21.88%	80.47%
	x	x	16	48.48%	25	78.13%	61.13%
	x	x	17	51.52%	21	65.63%	27.39%
<b>Average Math Increase</b>							<b>50.44%</b>

## Summer Teacher Training Survey

Would you recommend this math camp experience to a friend?

 Copy

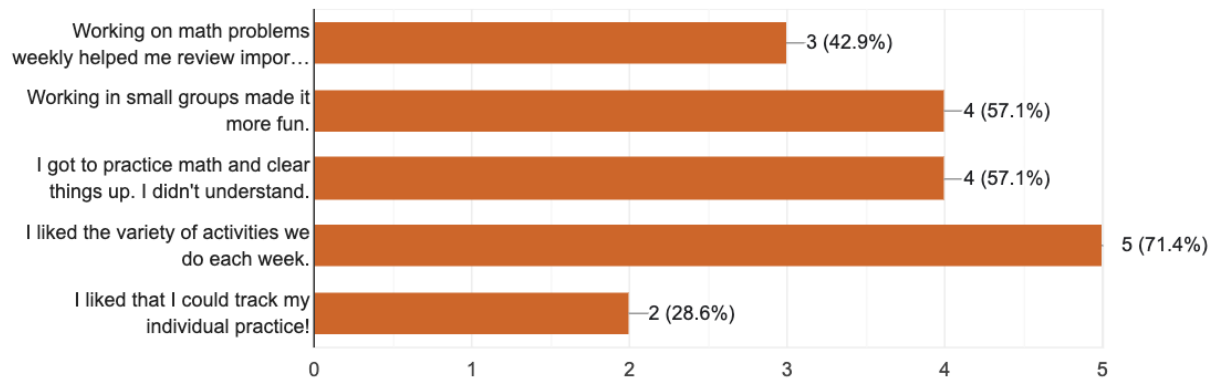
7 responses



2, Check all that applies to you.

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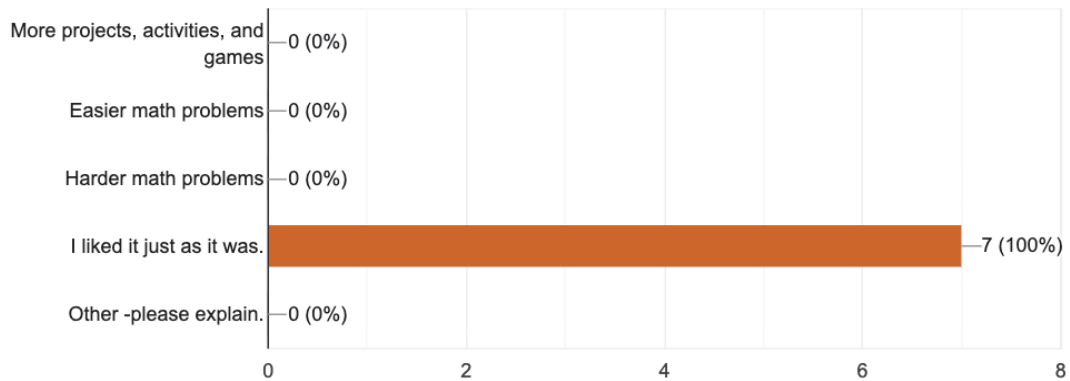
7 responses



### 3. How can we improve the experience?



7 responses



### 4. What was your favorite part of the class?

7 responses

The games

I appreciated the fact that the math team was open to suggestions to the curriculum. I also like the one on one approach that some people needed and the help that was provided. It seems like most of the participants were enjoying themselves and there was little just down time

The games!

I enjoyed the interaction with my colleagues and those involved with the program. I appreciated the one-on-one assistance and proved that I can do math. This gave me more confidence for sure.

Shout out to Aiden for his patience.

The math and fashion interactive workbook

Group activities!

5. Anything else you'd like to tell us to make the experience better?

7 responses

None

Na

It would be nice to have the training take place over more time (like 2 days)

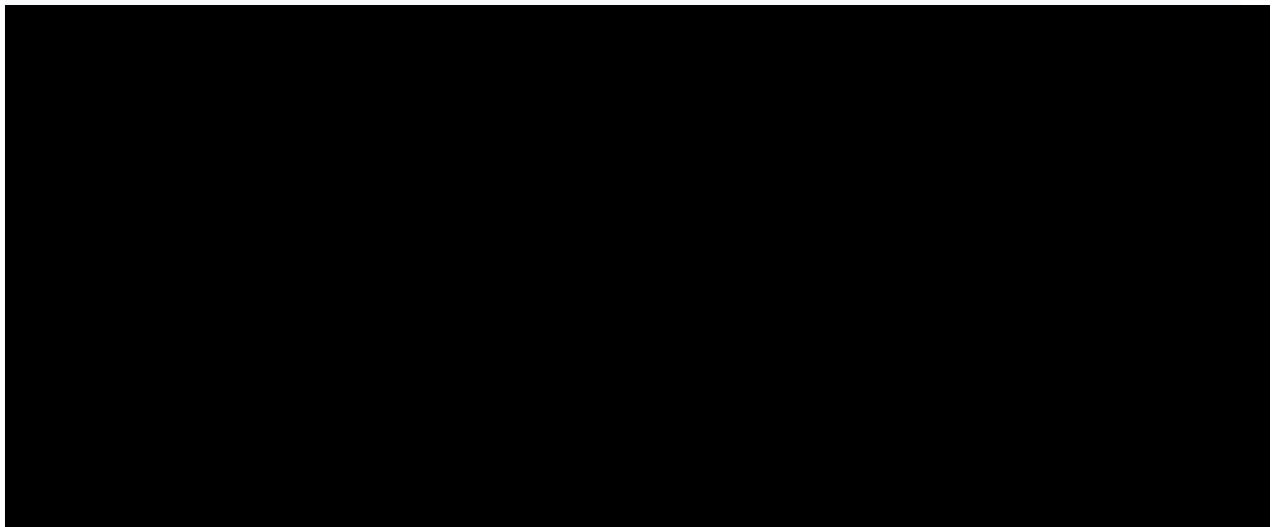
N/A

Thank you!!

Who has responded?

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Email



### Study 6: Grades 3-5 Math High Dosage Enrichment Tutoring

Targeted Students	Grades 3-5 Math
School	Mills Parole Elementary School, Annapolis MD
Partners/Funders	Community Action Agency of Anne Arundel County
Description of the Study/Intervention	<b>Intervention:</b> 20 total students in third grade, divided into four groups (5 students per group) to work on math puzzles during intervention blocks virtually. We communicate with the teachers on what the students are doing and she provides feedback for us to hone in on what to focus on during the sessions.
Quantifiable Data and Evidence of Growth Summary	The coordinator of the program is in the process of collecting the testing data and we will send that to Baltimore City once we have it. They want to confirm the students who were enrolled in the program showed the most gain compared to those students who were not part of the program but in the same grade taking the same math classes.
Contact for Further Validation of the Study	The coordinator of the school <b>Denise White: <a href="mailto:DWHITE@aacps.org">DWHITE@aacps.org</a></b> <b>Community School Program Manager</b> 410-222-1626 443-274-8269 Cell - Note I gave you her phone number because the rest of the contacts are from Baltimore City which you should have access to.
Dates of Study	November 2021-May 2022
Other Factors to Consider	We started with Mills Parole in this school year and based on the results, we have now expanded our schools in Anne Arundel County to include Van Bokklen, Mead Middle and High School, and Brockbridge Schools.

**School reported scores to us 6/29/2022**

					Improved/not improved
		35	62	43.55%	Improved
		68.8	37	-85.95%	Not Improved
		77.8	75	-3.73%	Not Improved
		35	87	59.77%	Improved
		11	75	85.33%	Improved
Reading assessment					Improved
		45	74	39.19%	Improved
		72	28	-157.14%	Not Improved
		39	51	23.53%	Improved
		53	90	41.11%	Improved
		32	16	-100.00%	Not Improved
		22	34	35.29%	Improved
		47	62	24.19%	Improved
<b>8/12 of students showed an increase of scores</b>					<b>66.67%</b>
<b>Average % Increase from those who showed gains</b>					<b>44.00%</b>

(5/3/23)

## INTRODUCTION:

The fact that every school we work with would give us a reference should speak to the level of quality for our work. Here is an example of our work with two schools. With every school, we compare our students' results (targeted) with those students we do not work with (untargeted). The below shows the results of two schools comparing BOY and MOY scores. We have them for additional schools upon request. Note, the students assigned to us are typically those behind and require additional intervention.

### 1. COMPARISON OF BOY and MOY with Eureka's Target Students vs Other Students

#### School 1: Working with K-3 Math Students

A	B	C	D	E
<b>Data Comparison 1</b>				
<b>Average Increase in points from BOY to MOY</b>				
	Targeted	Non-Targeted		
	<b>Av Increase</b>	<b>Av Increase</b>	<b>Difference</b>	
PreK	n/a	n/a		
Grade K	-1.00	-18.88	17.88	
Grade 1	45.20	50.63	-5.43	
Grade 2	27.67	24.73	2.94	
Grade 3	47.29	33.22	14.06	
Grade 5	n/a	n/a		
<b>Data Comparison 2</b>				
<b>% of students who increased within the grade</b>				
	Targeted	Non-Targeted		
	<b>Av Increase</b>	<b>Av Increase</b>	<b>Difference</b>	
PreK	n/a	n/a		
Grade K	50.00%	12.50%	37.50%	
Grade 1	100.00%	81.25%	18.75%	
Grade 2	83.33%	72.73%	10.61%	
Grade 3	100.00%	88.89%	11.11%	
Grade 5	n/a	n/a		

#### School 2: Our targeted students were two levels below and had absentee challenges.

	Targeted	Non-Targeted	Difference
	<b>Av Increase</b>	<b>Av Increase</b>	
Grade 4	18.33	7.00	11.33
Grade 5	8.60	14.82	-6.22
Grade 6	13.12	1.00	12.12
Grade 7	23.60	4.96	18.64
Grade 8	22.67	0.50	22.17
<b>Data Comparison 2</b>			
<b>% of students who increased within the grade</b>			
	Targeted	Non-Targeted	Difference
Grade 4	83.33%	75.00%	8.33%
Grade 5	80.00%	72.73%	7.27%
Grade 6	76.47%	46.67%	29.80%
Grade 7	80.00%	60.00%	20.00%
Grade 8	66.67%	50.00%	16.67%
<b>Data Comparison 3</b>			
<b>% of students who met typical growth</b>			
	Targeted	Non-Targeted	Difference
Grade 4	83.33%	37.50%	45.83%
Grade 5	30.00%	63.64%	-33.64%
Grade 6	52.94%	20.00%	32.94%
Grade 7	80.00%	32.00%	48.00%
Grade 8	66.67%	33.33%	33.33%



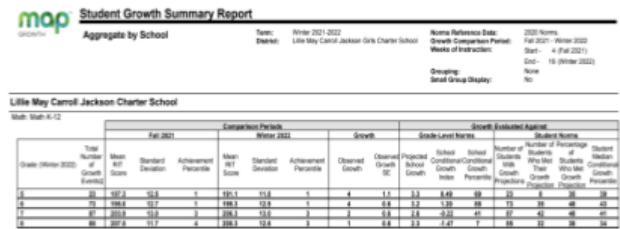
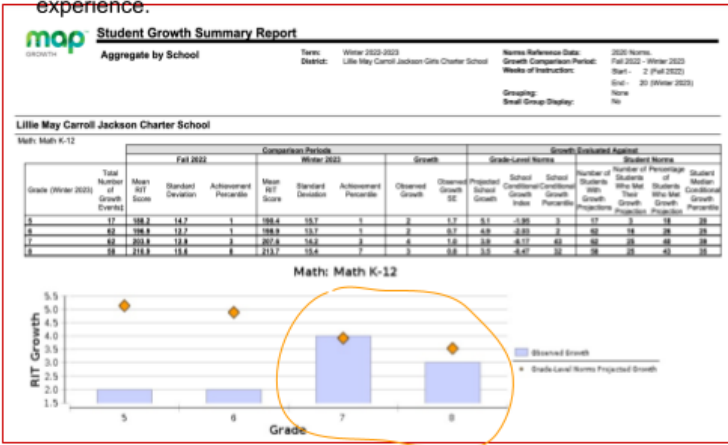
## 2. COMPARISON Of Class MAP Scores with Math Tutoring and PD Training



**Eurekii Intervention supported 7th and 8th grade towards proficiency.**

**Eurekii Intervention: 2022-2023** Gr 7&8th received 2x a week small group tutoring and once a week PD support for two long-term subs who did not have math teaching or content knowledge experience.

**No Intervention 2021-2022** Gr 7&8th no intervention with an experienced, certified teacher.



**We are currently collecting BOY, MOY, EOY scores as well as teacher and student surveys for all schools and will have results to share with LEAS by June 30, 2023.**

## **ESSA SUBMISSION:**

Baltimore City requested additional information to get us approved at ESSA Level 2. The following below is our documentation.

Essa Requirement Research: Level 2: **Moderate Evidence:** - supported by one or more well-designed and well implemented quasi-experimental studies.

The information below should meet the requirements for showing that Simplify Math Engagement Center LLC (DBA Eureka)’s practices are supported by well-designed and well-implemented quasi-experimental studies as described in ESSA.

Simplify Math Engagement Center’s (DBA Eureka) methodology in helping students become strong math learners focuses on **four main areas of research - productive discourse, setting high expectations, focus on problem-solving, and making sense of math context using visuals and imagery.**

**Research 1: Build student math understanding through productive discourse between students, peers, and instructors with the mindset that all students can learn math at high levels.**

*Our Approach:* Our tutors work one-on-one or in small groups and have students explain their work to us and to each other, which is counter to the traditional method of teacher/tutor explaining how to do the problem, step-by-step, with the learner being a passive participant. Our team uses the Socratic process, which questions students and asks them to explain their work, engaging in discourse that focuses on building understanding. This method has been shown in numerous studies to increase student learning, motivate students, allow teachers to assess student thinking and shift the mathematical authority from an instructor who has all the knowledge to that of the classroom community.

**Core Source:** In their work with Project Challenge, Chapin, O’Connor, and Anderson (2003) put a great deal of emphasis on students talking with one another and with the teacher in particular ways that have been found to be academically productive. The work of Project Challenge took place over four years in a low-income Boston school district and involved about 400 students and 18 teachers in grades 4–7. The majority of these students (65%) were English Language Learners, and most students (78%) qualified for free and reduced lunch. Using Standards-based curricula, daily logic-problem warm-ups, and weekly quizzes, these classrooms “emphasized communication by supporting discussions, both

lengthy and brief, and by maintaining a constant focus on explanations for students' reasoning" (Chapin & O'Connor, 2007, p. 114). Results on the California Achievement Test (CAT) were used as a measure of student learning. After about three years of the study, the class mean of the Project Challenge students reached the 90th percentile. Project Challenge students also scored better as a whole than students in one of the most highly ranked cities in the state of Massachusetts (see Chapin & O'Connor, 2004; 2007 for more details). These results provide strong evidence that student learning is greatly supported by engagement in academically productive talk (Chapin & O'Connor, 2007).

***Supplemental Source:***

- We learn through social interaction (Lave & Wenger, 1991; Vygotsky, 1978). A Vygotskian viewpoint, suggests that language use is at the root of learning. If students are at the center of inquiry-based math discussions, they are more likely to see that math is not a discipline of right and wrong answers or one way of doing things, but develop a growth mindset for discovering new approaches to solving problems, focused on depth in understanding.

**Research 2: We believe that all students are capable of learning at high-levels.**

***Our Approach:*** Our tutors provide challenging problems to students who are multiple grade-levels behind and see tremendous growth in a short time period as demonstrated in multiple Baltimore City Schools, using 2022-2023 BOY and MOY scores. Through puzzles and problem-solving, we teach students growth mindset, and that all students regardless of capacity can learn. Just because students are multiple grade levels behind does not mean we reduce the challenges or rigor which we often see in math classrooms. We build on students' understanding and help them see they are capable of more.

***Core Source:*** Our methods leverage the work of Jo Boaler, including Boaler J., Brown, K., LaMar T., Leshin M., and Selbach-Allen M. (2022). Boaler, J. (2019). **Unlocking Children's Math Potential.** *The Review*, 69-77 *Educ. Sci.* 12(10), 694. Research in mathematics education has shown, conclusively, that effective teaching of mathematics does not only involve the precise presentation of knowledge; it also involves changing the ways children think, building on their current understanding of numbers and how it relates to their everyday world.

***Supplemental Source:***

- In *Educational Researcher*, Vol. 37, No. 9, pp. 588–594 DOI: 10.3102/0013189X08327998 © 2008 AERA. <http://er.aera.net> 588 EDUCATIONAL RESEARCHER assessing any prior misconceptions (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989; Cobb, Wood,

Yackel, & Perlwitz, 1992; Davis, Maher, & Noddings, 1990; Franke & Kazemi, 2001; Smith, diSessa, & Roschelle, 1994; Steffe & Cobb, 1988).

- One of the main contributions of the field of mathematics education research has been the development of an extensive knowledge base documenting learners' common conceptions and misconceptions in different mathematical domains (Grouws, 1992; Kieran, 1992).
- A Stanford University research study of 7-9 year-old students where 50% of them were 'learning disabled' and 50% were classified as not, gave each group eight weeks of one-on-one tutoring and at the end of that time, not only did both groups have the same achievement, but the exact same brain functioning (Luculano et al., 2015). Students who were 'learning disabled' were given the same expectations as the ones who were not. Changing their mindset to "You can do hard things." makes the difference in their effort.

### **Research 3: Focus on and use problem-solving as a basis to build mathematical understanding.**

*Our Approach:* We use puzzles, problems, and questions with multiple entry points to engage students in discourse but to bring context to the mathematics they are learning. Our students learn more quickly and perform at higher-levels because we do not focus on mechanical procedure, but on how to make sense of and solve problems.

*Core Source:* Problem Solving can promote students' conceptual understanding, foster their ability to reason and communicate mathematically, and capture their interests and curiosity (Hiebert & Wearne, 1993; Marcus & Fey, 2003; National Council of Teachers of Mathematics (NCTM), 1991; Van de Walle, 2003).

*Core Source:* Research recommends that students should be exposed to truly problematic tasks so that mathematical sense making is practiced. (Marcus & Fey, 2003; NCTM, 1991; van de Walle, 2003).

#### ***Supplemental Source:***

- Third International Mathematics and Science Study (TIMSS) is an organization that collects data at grades 4 and 8 from between 50 and 70 education systems in each administration. In one TIMSS study, it found that U.S. teachers almost always intervened to show students how to solve the problems they had been asked to solve, leaving the mathematics they were left to do rather straightforward. This stands in direct contrast to teachers in Germany and Japan who allowed students much greater opportunities to struggle with the more challenging parts of the problems.

**Research 4:** Visualization is a key component of helping students make sense of problems. Visualization is a highly effective strategy to support all learners, but especially those who have difficulty learning mathematics.

**Our Approach:** When working through a word problem we always use imagery to help students understand the problem. Our approach to word problems is that it is a part of a story and they have to make sense of what is happening in the story. We also use a lot of images, tables, graphs, and other real-world everyday clues to make multiple connections of concrete and abstract concepts. (Stop-sign is an example of an octagon, etc)

**Core Source:** National Council for the Teaching of Mathematics (NCTM) and the Mathematical Association of America (MAA) have long advocated for the use of multiple representations in students' learning of mathematics. Boaler, J., Chen, L., Williams, C. & Cordero, M. (2016).

**Core Source:** Seeing as Understanding: The Importance of Visual Mathematics for our Brain and Learning. J Appl Computation Math 5: 325. Researchers even found that after four 15-minute sessions of playing a game with a number line, differences in knowledge between students from low-income backgrounds and those from middle income backgrounds were eliminated

***Supplemental Sources:***

- Siegler RS, Ramani GB (2008) Playing linear numerical board games promotes low income children's numerical development. Developmental science 11: 655-661.
- Researchers at Stanford, ran summer camps for 7th and 8th grade students with a focus on visual algebra. Participants were given a district test and there was an average of 50% improvement in test scores across the 81 students. A video of the camp can be seen here (<https://www.youcubed.org/youcubed-summer-camp-2015/>).

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# Logic Model



## ACTIVITIES

## OUTCOME

## IMPACT

**Inputs:**  
Tools: virtual puzzles and games, engagement trackers, monthly reports, proven success data, recruiting and vetting process, proven partnership with 10 Baltimore City Schools.

**Staff:**  
Senior staff expert in mathematics pedagogy and instruction  
Virtual and in-person tutors  
Operations coordinator to support scheduling and Quality control manager to ensure tutoring success.

**1 Enrichment**

- Twice a week, live tutoring focused on building problem-solving skills and number sense.
- Focus on at or above grade-level material
- Coordination with the teachers on content
- Pre and Post-Test and BOY MOY, EOY scores to monitor progress

**1 Enrichment**

- Scholars are pushed above and beyond during small group intervention time in school day.
- More opportunities to enrich scholars.
- Teachers can work with those who need more intervention while we push those who are eager and have completed their work in class.

**1 Enrichment**

- Create an accelerated and enrichment cohort and culture in the schools
- Provide opportunities to advance in future STEM fields.
- Set up for future advanced courses and post-secondary success.

**2 Tutoring**

- Twice a week, live tutoring focused on supporting content from the class.
- BOY data identifies the scholars and identified scholars receive intervention for a minimum of 9 weeks.
- Pre and Post-Test and BOY MOY, EOY scores to monitor progress.

**2 Tutoring**

- Scholars have extra, real-time support focused content for the grade-level which includes foundational review.
- Teachers receive detailed, weekly engagement and achievement reports to monitor progress.
- Scholars can rotate out depending on progress allowing more to receive support.

**2 Tutoring**

- Targeted scholars receive additional support to move them to grade level or above.
- Scholars have opportunity to have future success in trade or post-secondary education
- Baltimore City has fewer students below grade-level.

**Math Coaching**

- Specialized math pedagogy training for temporary employees and paraeducators.
- Ongoing training and feedback based on observations of teachers, para educators, and temporary employees.
- Provides focused, specialized workshops to address school's needs.

**3 Math Coaching**

- Schools have more instructional support with trained paraeducators and temp employees.
- Schools have more choices and math capacity to fill in gaps as needed.
- By empowering paras with math pedagogy, we are providing a pathway for capable and interested paras for alternative certification.

**3 Math Coaching**

- Paraeducators are empowered to help with in-person instruction, multiplying the school's instructional capacity and supporting more students with individual attention.
- There is a more ample and stronger teacher pipeline and pathway from paraeducator to certified teachers be more instructional