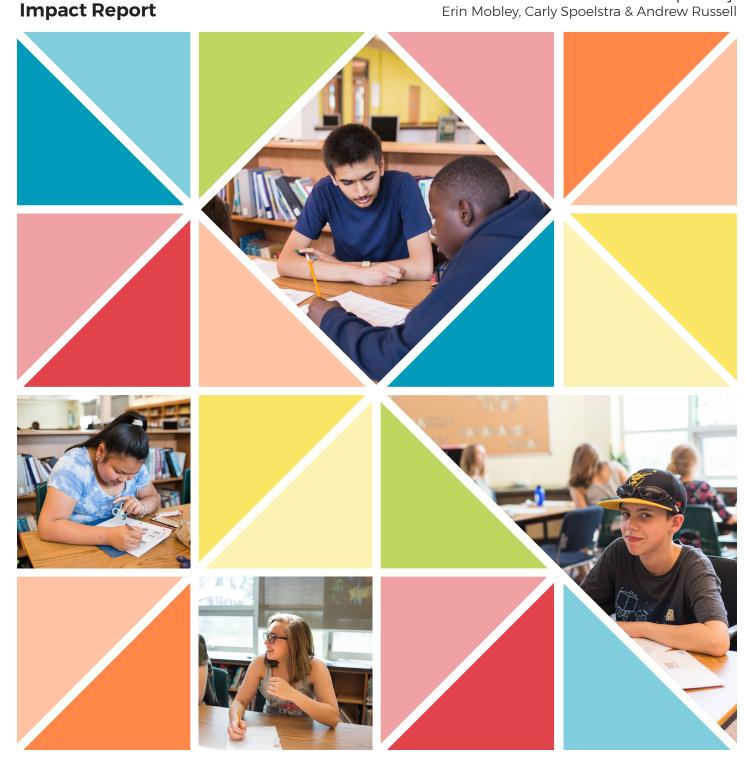
NEIGHBOUR TO NEIGHBOUR MATH SUCCESS PROGRAM

2016-2017



Submitted by: Deban Brunette Director of Educational Programs

Prepared by: Erin Mobley, Carly Spoelstra & Andrew Russell



" I enjoyed helping students learn math and hope that my help has built their confidence in seeking out challenges in math in the future. "

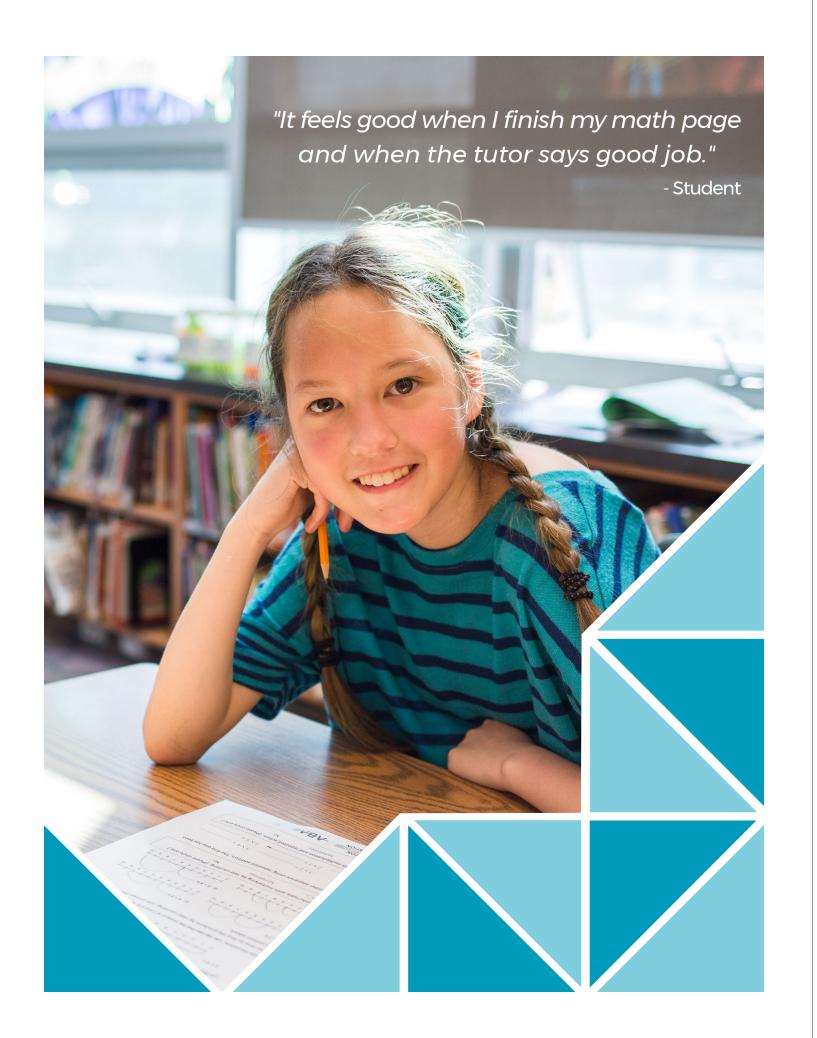
- Tutor

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ABOUT NEIGHBOUR TO NEIGHBOUR



Since 1986, Neighbour to Neighbour Centre (N2N), a non-profit, charitable organization, has been providing programs and services that improve the quality of life of both individuals and families. What began as a small food bank on Hamilton Mountain has grown to become a multi-purpose agency that makes a measurable difference in the Hamilton community.



N2N continues to lead its community by offering both established programs and by advancing new ones that address arising needs. From helping families access healthy food to tutoring students in math and literacy, N2N services the community through four different departments: Emergency Food, Hamilton Community Food Centre, Family Services and Education Support.

1.2 MESSAGES FROM THE MATH SUCCESS TEAM

Erin Mobley

Tutoring Assistant

'd like to begin with a quote from bell hooks, a feminist scholar and activist, "the classroom, with all its limitations, remains a location of possibility." In the Math Success Program, we did our best to open up space for possibility, and the students surprised me. I had the opportunity to see the students bring their unique perspectives, interests, experiences, and ways of knowing to the program. They encouraged one another, stumbled, asked for help, were at times playfully distracted, but always found their way back to math. What a lovely group of students! I am so proud of them.

I imagined the program model this year as one that, not simply shared information, but shared in the growth of students. We did this by adjusting the assessment process to meet students where they're at. We did this by motivating students to revisit their answers and self-correct. We did this through mentorship via conversations with students about their school day. These are just a few examples, but there were many teachable moments where students were at the center of teaching and learning.

I had the pleasure of working alongside Westmount Secondary School student, Kieran Davis, who was the on-site facilitator. Kieran truly has a thoughtful and engaging way of connecting with this age group. Our math success team was also made up of a wonderful and talented group of volunteer tutors. The success of the program rests on the ability of volunteers to support the students. I watched as one tutor encouraged a student to study for a math test. Another tutor found a way to use Lego (as a hands-on, manipulative tool) to teach math. They empowered the students, and that has made all the difference.

A warm thank you to the volunteers, parents/guardians, school contacts, and community partners – the pieces that came together to make this kind of programming possible. I wish each student well on their academic and life journey – may it be full of possibilities!

Kieran Davis

On-site Facilitator

A s the on-site facilitator for this year's math program, I had the privilege of mentoring and befriending each student in the program. Every student was a joy to work with – brimming with personality – and although at times requiring some convincing, they each exhibited an eagerness to learn. Their progress through the program was inspiring to watch, and even at times inspired me to work harder on my own studies in high school.

At such a developmental age, I believe any impression the program has had will be influential in the students' high school career and life in these crucial years to come. I take comfort in knowing that each individual's future has been positively impacted by the skills and relationships developed throughout their time in the program.

Beyond the learning acheived, it was a joy to see how the program acted as a safe and comfortable space for each participant, allowing the students to express themselves in a room full of people they became very familiar with by the end of the program. The students' enthusiasm when speaking with me or another tutor about how their day was at school or an important conversation they had earlier in the week was genuinely heartwarming. The program facilitated communication and support between tutor and student that ultimately resulted in a much more personalized and productive style of teaching.

As for the program's volunteers, I personally had so many great conversations while getting to know the dedicated and friendly faces of tutors who supported the students in their learning goals, both capably and calmly. Not enough can be said for the effort and quality of work they commit in order to make this program possible.

Thank you Deban Brunette for the wonderful opportunity, and Erin Mobley for being such a joy to work with!

2 GOALS & OUTCOMES

2.1 HAMILTON COMMUNITY FOUNDATION

he Neighbour to Neighbour Math Success Program is funded by the Hamilton Community Foundation ABACUS grant. The ABACUS goal is to improve high-school graduation rates and access to post-secondary education, including trades and apprenticeship opportunities, by focusing on the "middle-school years": Grades 6, 7, 8 and transition to 9.

The grant has 4 pillars:

- 1. Academic Upskilling supporting educational success.
- 2. Mentoring counselling and encouraging accountability.
- 3. Goal Setting aspirational activities and timely information.
- 4. Incentives Financial and motivational encouragements.

These pillars have been used as a guide to set the goals and structure of the N2N Math Success Program and to determine the reporting outcomes.







2.2 NEIGHBOUR TO NEIGHBOUR

The goals of the N2N Math Success Program are to provide students in grades 7-8 with the opportunity to:

Improve their *math skills*, build proficiency and self-confidence.

Acquire knowledge to support their successful transition into high school.

Build *relationships* to help increase "social capital" or "support systems".

Take part in mentorship and counselling that will help set goals and build aspirations for potential career paths.





Over the duration of the program there was a 35% average increase in students' math skills.

Highschool Information Session

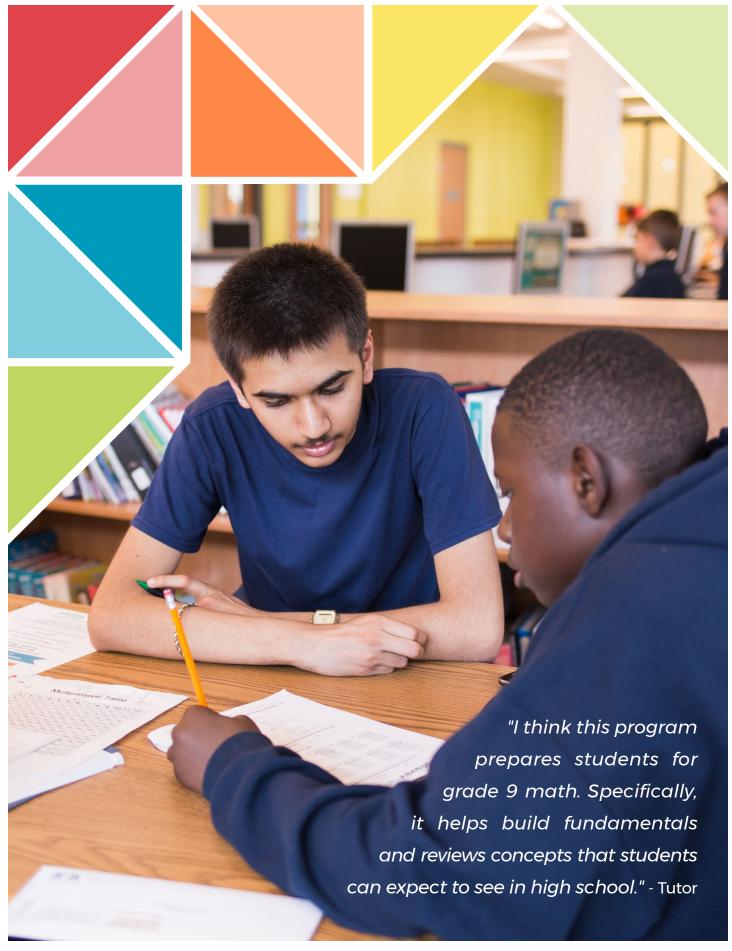
Students engaged in a Q&A with their high school tutors during the High School Information Session.

100% of tutors reported that they built relationships with students over the length of the program.

Student Interest Survey

What are your motivations for coming to the program?

"I wanted to know more about math than I already do for future jobs." - Student



3 PROGRAM DETAILS

3.1 PROGRAM MODEL OVERVIEW

The Neighbour to Neighbour Math Success Program provided grade seven and eight students with fundamental math support in the form of an after-school tutoring program.

We began programming in February of 2017, following our 2016 pilot, through a continued partnership with Westview Middle School and Annunciation of Our Lord Catholic Elementary School.

The Math Success Program offered two components: Math Fundamentals and Math Homework Help. Math Fundamentals took place at Annunciation of our Lord School on Tuesdays and Thursdays from 3:45–5:00pm. Math Homework Help was held at the N2N Hamilton Community Food Centre on Wednesdays from 3:30–5:00pm.

Additionally, we held one High School Information Session where the grade seven and eight students were given the opportunity to ask questions about high school and the transition into grade nine. With the aim of building relationships to increase the students' "social capital", we had the pleasure of hearing from four of our high school tutors who shared their school-based experiences. This information session also aligned with our goal to support their successful transition into high school.



DID YOU KNOW?

Writing tests and guizzes are *important for determining* academic achievement, but they can also be a cause of anxiety for some students. To eliminate negative associations with test writing, the N2N Math Success Program used a flexible and open assessment process where students were able to take breaks as needed, ask for tutor support, and leave questions blank. Students were not given final grades, but could revisit their answers and selfcorrect. The focus of our program was to build self-confidence. self-esteem and math success.

	2016	2017	Total
Students	31	21	52
Volunteers	17	17	34
Hours	290	328	618
Schools	2	2	2

3.2 MATH FUNDAMENTALS

tilizing JUMP Math Essentials as the basis of the program, trained professionals, tutors and mentors worked closely with small groups of students to improve math skills, build proficiency and self-confidence.

Our first Math Fundamentals session was comprised of 21 students. Each student was asked to complete an interest survey to find out how they viewed themselves as learners, what goals they had for the program and if they had any career or future goals. This information was vital to the shaping of our program as we aimed to provide content that was both beneficial and interesting for the students.

We determined the math knowledge that students had already acquired by asking each student to fill out a comprehensive assessment at the beginning of the program. Students also completed preand post-assessments for each JUMP Math Essentials module; each module focused on particular math subject areas - from addition and subtraction, to fractions and decimals. This gave the Math Success Team the ability to see if the students' math skills had improved.

Student progress and engagement happens at many levels and looks different for every student. Instead of moving linearly through the JUMP Math worksheets (as in the 2016 pilot), we structured the program so that each student focused on the module(s) that best supported their individual learning. In this way, we were able to adjust the program to align with a student-centered, individualized approach to meet the students where they're at.

Volunteer tutors worked with small groups of students, typically a 3:1 student to tutor ratio. This allowed students to better understand concepts, practice their skills and develop confidence in their math abilities. Students frequently offered peer support by helping one another stay on task through encouragement and explanation. This also allowed students to work at their own pace by ensuring each individual completely understood the material before moving forward.

4:50 - 5:00pm

clean up

& dismissal

MATH FUNDAMENTALS TIMELINE:

3:30 - 3:45pm

snacks & socialization



3:45 - 4:50pm

Math Fundamentals consisted of 32 sessions over 16 weeks (February – June 2017)



ew this year, we were excited to offer **N** Math Homework Help on Wednesdays from 3:30-5:00pm. Math Homework Help was held at the Hamilton Community Food Centre (HCFC), a department of Neighbour to Neighbour that opened its doors to the community in January of 2017. Students were invited into their space for a walkabout to learn more about the facility whereby the community can access and advocate for fresh, healthy food. During math homework help sessions, the HCFC provided the students with kitchen-prepared snacks like muffins and fruit.

MATH HOMEWORK HELP TIMELINE:

3:30 - 4:00pm

snacks & socialization

individual math homework

Math Homework Help consisted of 15 sessions over 16 weeks (February – June 2017)

Based on student feedback from the 2016 pilot, we could see the benefit of offering not only the fundamentals provided by JUMP Math Essentials, but also homework help. Math Homework Help was intended to be a compliment to the classroom. Students were able to bring in materials from their math class - homework, worksheets, textbooks, completed math tests - and get support from the tutors. We asked that students attend Math Fundamentals on Tuesday and/or Thursday to be eligible for Math Homework Help on Wednesday.

4:00 - 4:50pm

4:50 - 5:00pm

clean up

& dismissal

3.4 ADMISSION REQUIREMENTS

Students from Westview Middle School and Annunciation of Our Lord Elementary School were selected by their schools for the program based on the following criteria:

Students who are currently enrolled in grades 7 and 8 and could benefit from fundamental math support provided in a group setting.

- Students who are able to commit to programming on a consistent basis, with parental consent and encouragement to participate.
- Students who have not been identified as needing professional intervention, and are not enrolled in fee-based math tutoring programs (e.g. Kumon, Sylvan)

As part of the application process, students were required to sign a participation agreement. The agreement served as a contract to ensure that students attended programming consistently, were on time, and prepared to learn. It also outlined expected behaviour within the program. Parents/Guardians were also required to sign the contract agreeing to support their child's learning by encouraging them to attend sessions regularly and to be on time.

3.5 INCENTIVES TO PARTICIPATE

n order to encourage students to attend and actively participate on a regular basis, the Neighbour to Neighbour Math Success Program provided incentives. At the end of every session each student was given a ballot to fill out with their name and the date. Once filled out, the students chose one of five jars to put their ballot into for a chance to win a gift card. During the application process, the students indicated what gift cards they would be most interested in winning.

As a result, the program offered gift cards from EB Games, iTunes, Limeridge Mall, Sport Chek, and Cineplex. Each gift card was valued at \$50. Additionally the students were given bonus ballots when exceptional behaviour was demonstrated such as helping peers, hard work, and dedication. Therefore, good behaviour and regular attendance resulted in higher odds of them winning a gift card at the end of the program.



D y program start in February, there D were a total of 21 students who submitted applications to participate in the Neighbour to Neighbour Math Success Program: 7 of the students were from Annunciation of Our Lord, and 14 students from Westview. The numbers listed throughout the report reflect data from 16 students who completed the program. The decrease in students is a result of students not being eligible for

DEMOGRAPHICS BY GRADE

School	Grade 7	Grade 8	Total:
Annunciation of Our Lord	3	2	5
Westview	8	3	11
Total:	11	5	16

the program, self-elimination and withdrawal due to family commitments. For a myriad of reasons, some students were not ready or able to complete the program. We made no judgements and wished them well on their academic journey. If eligible, we will invite those students to register for programming in the upcoming school year (2017-2018) in an effort to remain open rather than foreclose future opportunities for participation.

School	Male	Female	Total:
Annunciation of Our Lord	4	1	5
Westview	4	7	11
Total:	8	8	16

DEMOGRAPHICS BY GENDER

"I am getting better grades in math class because tutors have been helping me through my work." - Student "The math program helped me a lot. When I start a new unit at school I already know how to start it."

4 STUDENT PROGRESS

4.1 OVERVIEW

C tudents participated in assessments **O** to determine prior math knowledge and track progress. Each student filled out a comprehensive assessment at the beginning of programming. The comprehensive assessment consisted of selected math questions from the JUMP Math Essentials workbook. Students were encouraged to complete all questions but were able to leave questions blank if they felt that they were unable to answer them. This provided Neighbour to Neighbour with a baseline for evaluating prior math knowledge and gaps in learning.

Based on the outcomes of their initial comprehensive assessment, each student was streamed into a module which focused on particular math subject areas from addition and subtraction, to fractions and decimals. Students were streamed into the module that addressed their individual gaps in learning. Every student completed at least one module; there were two students who completed two.

TOTAL AVERAGE 35% **STUDENT SCORE:*** **INCREASE 59%** pre-assessment Over the duration of the program there was a 94% post-assessment 35% average increase in students' math skills.

*average based on the assessment scores of the 16 program participants

Prior to starting a module, each student completed a pre-assessment. From there, each student worked on JUMP Math worksheets for a specific module. Once a student had completed the module worksheets, they would complete a post-assessment. Pre- and post-assessments were exactly the same for any given module. On the pre- and post-assessments students were also asked to rate their comfort level with the material. This gave the Math Success Team the ability to see if student's math skills and self-confidence had improved.

After a student had completed their post-assessment, the Tutoring Assistant would look over their work. Students were given the opportunity to revisit their answers, find any mistakes and self-correct before moving on to the next module. Many students identified their mistakes and corrected them, showing true understanding of the math subject areas.

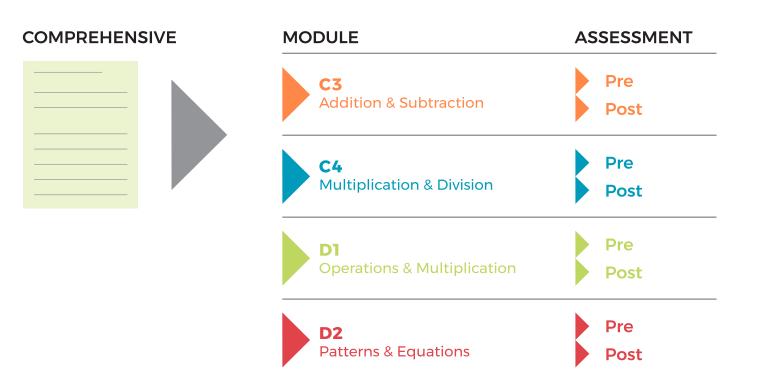
4.2 STUDENT ASSESSMENT PROCESS

Students participated in assessments to determine their prior math knowledge and identify gaps in learning. The following steps outline the assessment process:

- Students filled out a comprehensive assessment.
- 2 Each student was streamed into a particular module; they worked on the module(s) that best supported their individual learning.
- **S** Prior to starting a module, each student completed a pre-assessment.
- 4 From there, each student worked on JUMP Math worksheets for a specific module.
- 5 Once a student had completed the module worksheets, they would then complete a post-assessment.

The data used in this report was gathered from the pre- and post-assessments.

ASSESSMENT DIAGRAM





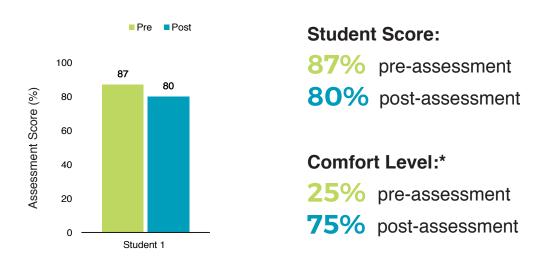
"At the start of this program I didn't know how to do long division and one of the tutors taught me, and now I believe I can do long division confidently without help or assistance."

- Student

4.3 ASSESSMENT RESULTS

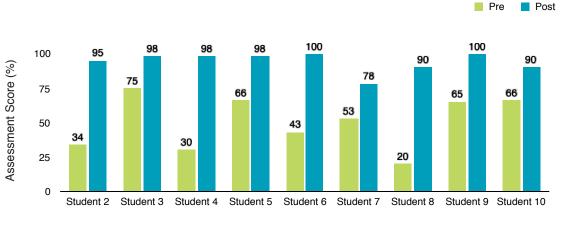
C.3 Module: Addition and Subtraction

Regrouping, adding 3 digit numbers, subtracting 2 & 3 digit numbers, subtraction by regrouping.



C.4 Module: Multiplication and Division

Multiplying and dividing by skip counting, multiplication and repeated action, long division.



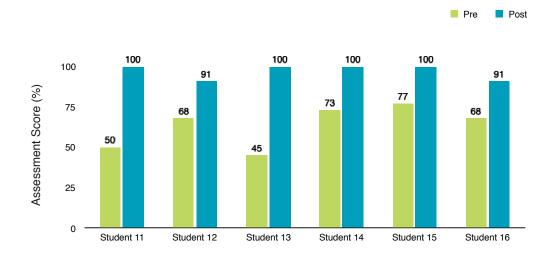
Average Student Score: 50% pre-assessment **94%** post-assessment

Average Comfort Level: 28% pre-assessment **71%** post-assessment

*students rated their comfort level with the math material on each assessment

D.1 Module: Operations and Multiplication

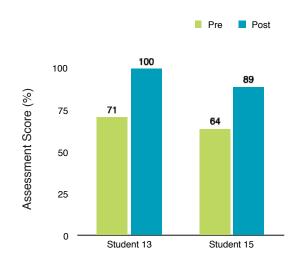
Order of operations, place value, multiplication.



Average Student Score: 64% pre-assessment 97% post-assessment

D.2 Module: Patterns and Equations

Patterns, solving equations, word problems.



Average Comfort Level:

- **39%** pre-assessment
- **83%** post-assessment

Average Student Score:

68% pre-assessment **95%** post-assessment

Average Comfort Level:

50% pre-assessment **55%** post-assessment

"I'm glad my tutor gave up their time to help me with math." - Student "Thank you so much for helping my child. Their grades have improved and their confidence is up as well!" Parent "My tutor helped me and encouraged me to do my math test." - Student

5 SURVEY RESULTS

S urveys are a crucial part of our program; they give us insight into the participants' experiences. Throughout the program, we attempted numerous survey styles to engage the students and garner the most relevant information. We conducted written surveys and held a group discussion, giving students an opportunity to verbally express concerns and suggestions in a safe and respectful environment. Feedback is integral as it provides valuable insights into the strengths of the program and helps to guide our future plans. Parents were also asked to complete a survey at the end of the program to assess any changes in their child's attitude and comfort level regarding math.

STUDENT INTEREST SURVEY RESULTS

	Pre-Assessment			Post-Assessment			
Questions	Yes	Some- times	No	Yes	Some- times	No	
I enjoy math.	4	10	2	5	9	2	
I feel comfortable asking for help in math.	5	8	3	8	8	0	
I feel comfortable answering questions in class.	2	8	6	5	6	5	
I use math everyday.	9	6	1	9	6	1	

PARENT SURVEY RESULTS*

	My child enjoyed attending the Neighbour to Neighbour Math Success Program.	My child talked positively about their experience in program with family/ friends.	My child's skills have improved since being in the Neighbour to Neighbour Math Success Program.	My child's self-confidence has increased since being in the Neighbour to Neighbour Math Success Program.	
Post-Program Survey Results	80%	90%	100%	70%	

*10/16 parents reported data

6 VOLUNTEERS



6.1 ROLES AND RESPONSIBILITIES

t Neighbour to Neighbour, we take A pride in all of our hard-working and dedicated volunteers. The N2N Math Success Program was fortunate to have a total of 17 volunteers offer their knowledge and practical experience to the program.

Our volunteer tutors worked with small groups of students and occasionally provided one-on-one support. The tutors helped to create an interactive, safe environment where students could comfortably ask for help.

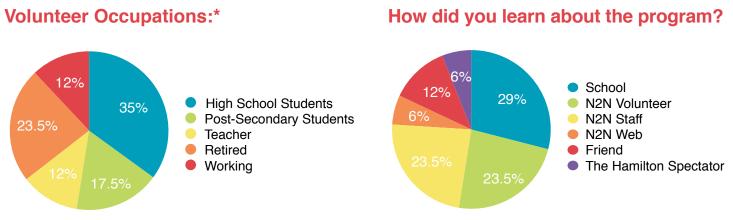
Our Educational Consultants brought their passion for teaching and their knowledge of the current curriculum.

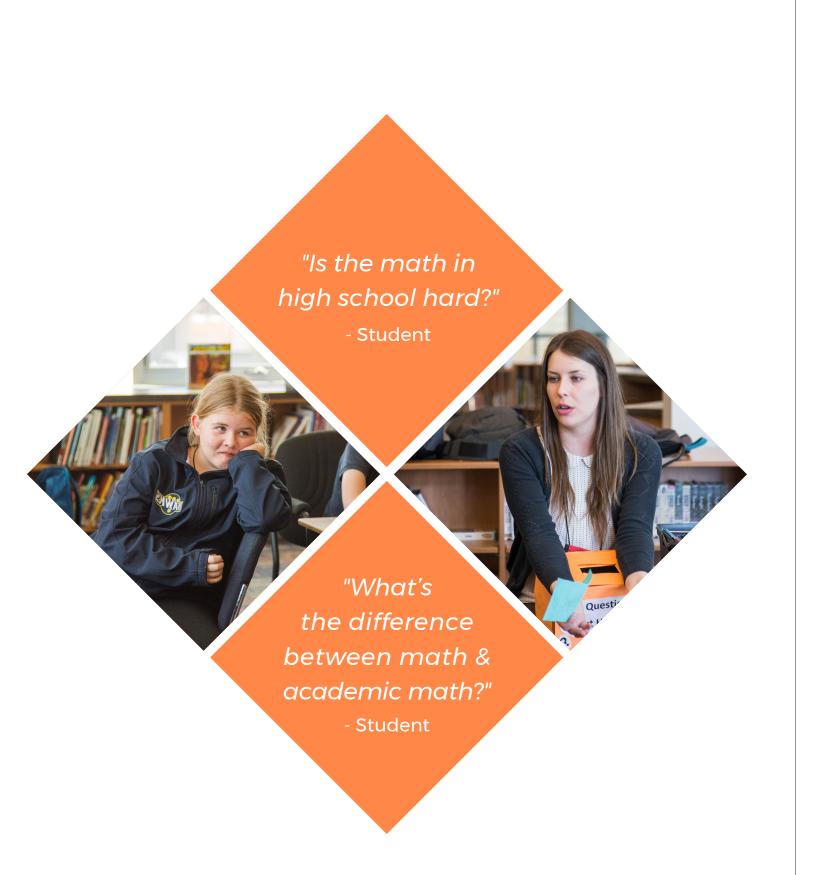
The Educational Consultants were working or retired professionals with a teaching background and/or experience in education (i.e. elementary, special education, adult education or early childhood education). They modeled a diverse range of tips and strategies that best supported the learning needs of the students.

Educational Consultants were also responsible for decisions regarding the planning, implementation and evaluation of the math program. They were foundational in providing direction and feedback for this year's program model.



• o engage volunteers, we placed recruitment information on various platforms. We put information Online (N2N website, Mohawk College website, McMaster University website), in the local newspaper, and asked our established volunteers to spread the word. We focused on youth recruitment by connecting with local high schools. We engaged high school students from Westmount Secondary School.





7 HIGH SCHOOL INFORMATION SESSION

D uring one of the Math Fundamentals sessions we invited our high school tutors to engage in a Q&A (question and answer) with the students. The grade seven and eight students in our program were given the opportunity to ask questions about high school and the transition into grade nine. Survey results from the 2016 pilot informed us that students were curious about high school – sharing lockers, making friends, what a rotary schedule looks like, as examples.

We encouraged students to ask questions by writing them down on a post-it note and placing them in a question box. Questions were submitted anonymously to foster a safe and comfortable space where



students could inquire about any aspect of high school. We asked our panel of high school tutors to respond to those questions through an open, conversation-style forum. This gave students in our program a chance to find out more about high school from those with current experiences.

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The students benefited from the mentorship and guidance of the high school tutors. The tutors demonstrated the many ways that math is incorporated in their day to day schooling, and also provided the students with useful information and advice for their future studies. The information session aligned with our goal of helping intermediate students acquire knowledge to support their successful transition into high school.

8 CELEBRATING SUCCESS

ith the completion of the Neighbour to Neighbour Math Success Program, we held a celebration to recognize the students' efforts, the commitment of the volunteers, and the support of the community.

The Success Celebration was held at Annunciation of Our Lord Catholic Elementary School on June 1st, 2017. 30 attendees including 6 families, students, tutors and staff were invited for a presentation of the students' success and a light meal.

In preparation for the celebration, the students made each tutor a thank you card as a token of appreciation and gratitude. The thank you cards were handed out during the celebration. In addition, the five winners of the \$50 gift cards were called one-by-one and presented with their prize.

Throughout the entirety of the program, there was a common theme brought forth by the students which was that they all wanted to win a gift card. As a surprise, Neighbour to Neighbour awarded every student with a \$25 gift card for participating in the program. The gift cards were selected based on the student's preference.









9 REFLECTIONS & FUTURE PLANS

Deban Brunette

Director of Educational Programs

hanges in the structure of the program this year were based on everything we learned from last year's pilot. Our biggest challenge was adapting the program to take into consideration the student's individual learning needs. We wanted to find their areas of strength and fill in any identified gaps. The outcomes of the program certainly show that we were able to help students increase their understanding and comfort level in different areas of learning. Additionally, parents saw an improvement in their child's math skills and expressed that their child talked about the program in a positive way with friends and family. We were honoured that six families were able to join us at the Success Celebration.

The results of the Math Homework Help sessions this year were not as positive as we had hoped. Hamilton Community Food Centre could only accommodate us on Wednesdays and unfortunately that was the same evening Westview offered homework help. Some students indicated that they had extra-curricular activities that night, so we changed the

time of the program, however that did not increase participation. I feel it is important to offer this session once more before determining its value.

We hope to open registration to the program in October 2017. This will allow for a more relaxed process and assessment period. The model of the program will remain basically the same, three sessions a week with one evening dedicated to Math Homework Help.

In the Hamilton Spectator series, The Math Problem: I'm Not a Math Person. author Joanna Frketich references the latest EQAO report: "Among Grade 3 public school kids in Hamilton, just over 50 percent said they like math and were good at the subject. Among Grade 6 students, however, fewer than half of the students show positive attitudes towards math. In Grade 9 applied math classes, only one-third of the students like the subject and feel they are good at it." We are working to improve those statistics and thank Hamilton Community Foundation for supporting middle school students who otherwise would not have the opportunity to improve their math skills and build proficiency and self-confidence in math.

10 THANK YOU

On behalf of the Neighbour to Neighbour Math Success Program, we would like to thank the Hamilton Community Foundation Abacus Grant for providing funding for the program, and Jump Math for funding the materials. We thank all of our community supporters for their advice and counsel, and our volunteers for sharing their time and talent.





PROGRAM MATERIALS



SCHOOL CONTACTS

Rachelle Branch - Special Education Resource Teacher, Annunciation of Our Lord Catholic Elementary School (HWCDSB)

Sharon Tapuska - Learning Resource Teacher, Westview Middle School (HWDSB)

PRINCIPALS

Joanna Crapsi - Principal, Westview Middle School (HWDSB) Lian Cavarzan - Principal, Annunciation of Our Lord Catholic Elementary School (HWCDSB) Philip Oliveria - Vice Principal, Annunciation of Our Lord Catholic Elementary School (HWCDSB)

CONSULTANTS

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VOLUNTEER TUTORS

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ENGAGERS

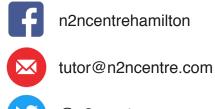
Joe Curto - Equal Opportunities Consultant (HWCDSB) Mike Des Jardins - Supervisor of Engagement (HWDSB) Sarah Tracsz - Community Engagement Specialist (HWDSB)



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