

Neighbour to Neighbour

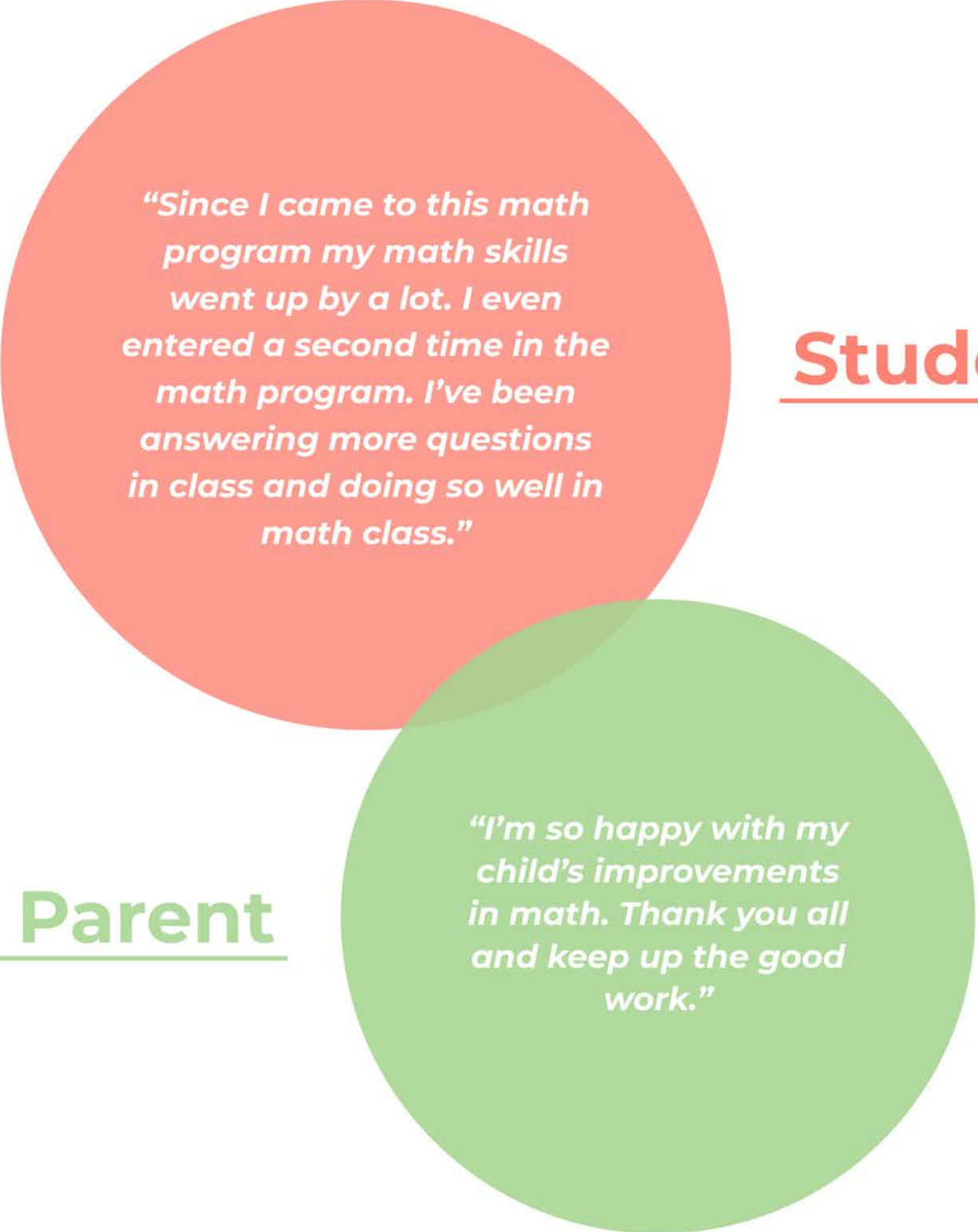
NEIGHBOUR
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NEIGHBOUR

Math Success Program

2018 - 2019 Impact Report



Submitted by: Deban Brunette, Director of Educational Programs **Prepared by:** Noura Afify, Ben Nguyen & Nicolai Ghibescul



"Since I came to this math program my math skills went up by a lot. I even entered a second time in the math program. I've been answering more questions in class and doing so well in math class."

Student

Parent

"I'm so happy with my child's improvements in math. Thank you all and keep up the good work."

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About Neighbour to Neighbour



Overview

Since 1986, Neighbour to Neighbour Centre (N2N), a non-profit, charitable organization, has been addressing the needs of our community. Not everyone in Hamilton has the same access to opportunities and resources. This means that some people have less choice and control over their lives which results in an inability to reach their full potential.

What began as a small foodbank on Hamilton Mountain has grown to become a multi-purpose agency that makes a measurable difference in the lives of people in the Hamilton community.

N2N addresses these issues by connecting people to our emergency and preventative services as well as directing them to other community resources. The impact is that people have power over their lives, feel healthy, included and supported. This results in an improvement in their quality of life, which is our mission.

N2N services our community with qualified staff and trained volunteers in four departments: Emergency Food, Community Food Centre, Family Services and Educational Support.

Message from the Math Success Team



Jody Bruulsema

Math Facilitator

It was my pleasure and privilege to facilitate the Fall 2018 session of the N2N Math Success Program. Having previously contributed to the program as an Educational Consultant, I had seen the positive outcomes that this program could attain. With the support of skilled and dedicated tutors, students were able to gain confidence and improve their skills. It was a pleasure to see the connections between students and tutors develop, and to see students' eyes light up when their tutors walked in the door. The Grade 7 and 8 participants came to the program following a busy school day. Snack time, group math games, and "math talks" served to transition the students into their personalized math fundamentals work. I congratulate these students who put out their best efforts, and to the tutors who gently guided them into improved understanding and skill levels. Many students were also thankful for the opportunity to receive help with their math homework.

A highlight of the Fall session was our cookie baking activity. Tutors and students were teamed up and given a recipe to create, with an opportunity to practice measuring, fractions, food safety skills and following instructions. Although many had very little previous experience with baking, the results were delicious. Grade 7 and 8 can be a time of increased anxiety as students anticipate high school. I am thankful for the willingness of our high school and university age tutors to be part of the high school information panel, taking questions from all of our participants about the next stage in their academic journey.

Special thanks to our Assistant Facilitator, Ariana, who kept on top of many of the administrative details of the program, filling in the gaps when tutors were unable to attend and maintaining a great rapport with both the students and volunteers. Thanks also to Deban, Noura, N2N and the funding agencies who have made this program possible.



John Smith

Math Facilitator

I am a retired teacher/administrator with over 40 years experience in education ranging from Junior Kindergarten to Grade 13 in Peel, as well as teaching at the University of Toronto Mississauga. Having tutored in this program in the past, I understood the existing processes and thought that the program could benefit from some changes to better service the students in our care. With this year being the third iteration of the math program, we are constantly going through reflective practice. One change that was made this year was individualized, targeted learning which would be tested through differing pre and post-assessments.

In differing these assessments, we were able to ensure the validity of these evaluations as well as their results. These assessments would be used to determine if the work staff and volunteers were doing had any impact on the mastery of these subjects. In addition to these pre and post assessments other potential changes were discussed, including: assessing everyone's work at the end of each session to monitor progress; and providing each student with individual, detailed feedback that would direct their next days work as well as provide guidance to the tutor assisting that student.

Previously, students moved from sheet to sheet under the guidance of the tutor; now, based upon their pre-session assessment, their learning is targeted to the areas they need help. The pre-assessment is kept in their folder for reference. I believe that the ongoing reference back to areas of need is essential as it allows staff to assess each student's work and respond to their progress. Post assessment took place over the last few sessions to ensure that each student had sufficient time to complete it to the best of their ability. Comparing pre and post-assessment results for term 2, there was an overall improvement in mathematics results of 14.8% with 3 students improving over 30%; that is a significant gain.



Goals & Outcomes

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Hamilton Community Foundation

The 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:

Academic Upskilling

Supporting educational success

Mentoring

Counselling and encouraging accountability

Goal Setting

Aspirational activities and timely information

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.

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



15% average increase in students' math skills over both terms of the program



Acquire knowledge to support their successful **transition** into high school



Students engaged in a Q&A with their high school tutors during the **High School & Beyond Panel**



Build **relationships** to help increase “social capital” or “support systems”



89% of tutors reported that they built relationships with students over the length of the program



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



Students participated in a **“Student Interest Survey”** which helped facilitate goal setting and aspiration building

Tutor

"Thank you for the opportunity to volunteer with great students in a program where I was able to grow and learn alongside them."

"This program gave my child lots of confidence. They are on their way to high school."

Parent

Program Details

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Program Model Overview

Due to requests from parents and teachers to start the program earlier in the school year, we provided the Math Success program in two terms: a 10 week program, which started in October and ended in December 2018, and a 15 week program that started in February and ended in May 2019. 28 unique individuals participated in Term 1 and/or Term 2. Seven students completed both terms.

The program was held at Annunciation of Our Lord School on Tuesday and Wednesday from 3:45 to 5:00pm. Based on previous years' experience, we allowed the students to bring homework to the sessions, but did not provide a specific day for homework help.

During the first term, Jody Bruulsema was the Math Facilitator and Ariana Andaya was the Assistant Facilitator. Since we only had 10 weeks, we decided to allow the students to choose the modules that they worked on instead of doing a comprehensive evaluation of all their math skills. Some of the students chose to start at the beginning, while others identified what they felt were their weaknesses. You will see the outcome of this self-identification of skill levels in the first set of assessments.

In January, John Smith took on the role of Math Facilitator and Ariana Andaya continued as Assistant Facilitator. John, with the help of a professional educator,

Did you know?

Tests and quizzes are important for determining academic achievement, but they can also be a cause of anxiety for some students. In order to eliminate negative associations with test writing, the 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 self-correct. The focus of our program was to build self-confidence, self-esteem and math success.

Since 2015,

 **67 tutors**

have volunteered

 **1137 hours**

to assist

 **105 students**

in

 **2 schools**

Mark Melanson, rewrote the final Comprehensive Assessment. Up until that point we had been using the exact same questions for pre and post assessments. We realized that we needed to include the same information but present it in a different manner to accurately assess mastery of skills. You will see a marked difference in outcomes in this report compared to previous years based on those changes, but know that this year we have a clearer picture of actual mastery and not just rote reproduction.

Students were expected to attend Tuesday & Wednesday, but were allowed to attend once a week with an explanation from their parent/guardian. We didn't want to completely eliminate participation due to another on-going commitment. It was obvious to the tutoring team, that the more often a student attended the better the tutoring team and the student got to know one another. If a student did not attend either session, without prior notification from the parent, then the parent was contacted by staff. We wanted to include the parents/guardians as much as possible in their child's learning and provide parents with resources for math help, such as Khan Academy, an online program that is easily accessible.

We included "High School & Beyond" information sessions in both terms where the students were given the opportunity to ask anonymous questions and engage in discussion with tutors currently attending high school, college, and university. These sessions align with our commitment to provide guidance and support for a successful transition into high school and career planning.



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 required to sign the contract agreeing to support their child's learning by encouraging them to attend sessions regularly, to be on time, and to inform Facilitators of absences.

Incentives to Participate

In order to encourage students to attend and actively participate on a regular basis, the Neighbour to Neighbour Math Success Program provided incentives. In a survey, the students indicated what gift cards they would like to win.

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 placed the ballot in one of the five jars for a chance to win a giftcard. Additionally the students were given bonus ballots when exceptional behaviour was demonstrated such as helping peers, hard work, and dedication. Good behaviour and regular attendance resulted in higher odds of them winning a gift card at the end of the program.



Student Demographics

Throughout the duration of the program, there were a total of 33 students who submitted applications to participate in the Neighbour to Neighbour Math Success Program. The numbers listed throughout the report reflect data from 28 students who completed the program: 9 students from Annunciation of Our Lord, and 19 students from Westview. The decrease in the number of students is a result of students no longer being eligible for the program, self-eliminating and withdrawing 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 (2019-2020) in an effort to remain open to opportunities for participation.

Demographics by Grade

School	Grade 7	Grade 8	Total:
Annunciation of Our Lord	5	4	9
Westview	8	11	19
Total:	13	15	28

Demographics by Gender

School	Male	Female	Total:
Annunciation of Our Lord	8	1	9
Westview	11	8	19
Total:	19	9	28

Tutor

"One student was extremely stressed about doing long division, but after showing them different methods they caught on quickly, did well and was really proud of their work, which made me proud too."

"I found the most memorable moment for me was when I was able to explain to a student how to perform long division. Hearing the words, "I understand it now!" was definitely gratifying for me as a tutor."

Tutor

Student Progress

Term 1	18
Term 2	21



Term 1

Assessments

The following steps outline the assessment process for students during the first term:

1

Each student determined which module they wanted to work on; students worked on the module(s) that best supported their individual learning goals.

2

Prior to starting a module, each student completed a pre-assessment.

3

From there, each student worked on JUMP Math worksheets for a specific module.

4

Once a student had completed the module worksheets, they would then complete a post-assessment.

Module Breakdown

C.1 Module: Fractions & Numbers

- ▶ Fractions, ordering numbers, number lines.

C.3 Module: Addition & Subtraction

- ▶ Regrouping, adding 3-digit numbers, subtracting 2 and 3-digit numbers, subtraction by regrouping.

C.4 Module: Multiplication

- ▶ Multiplying by skip counting, multiplication and repeated action.

C.4D Module: Division

- ▶ Dividing by skip counting, repeated action and long division.

C.5 Module: Fractions 2 & Decimals

- ▶ Fractions and Decimals, Place Value: Decimals, Changing Notation.

D.1 Module: Operations & Multiplication

- ▶ Order of operations, place value, multiplication.

D.2 Module: Patterns & Equations

- ▶ Patterns, solving equations, word problems.

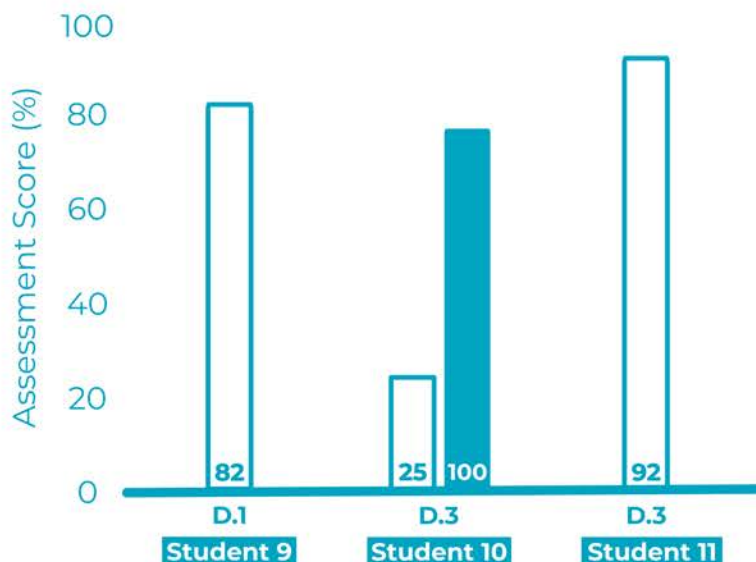
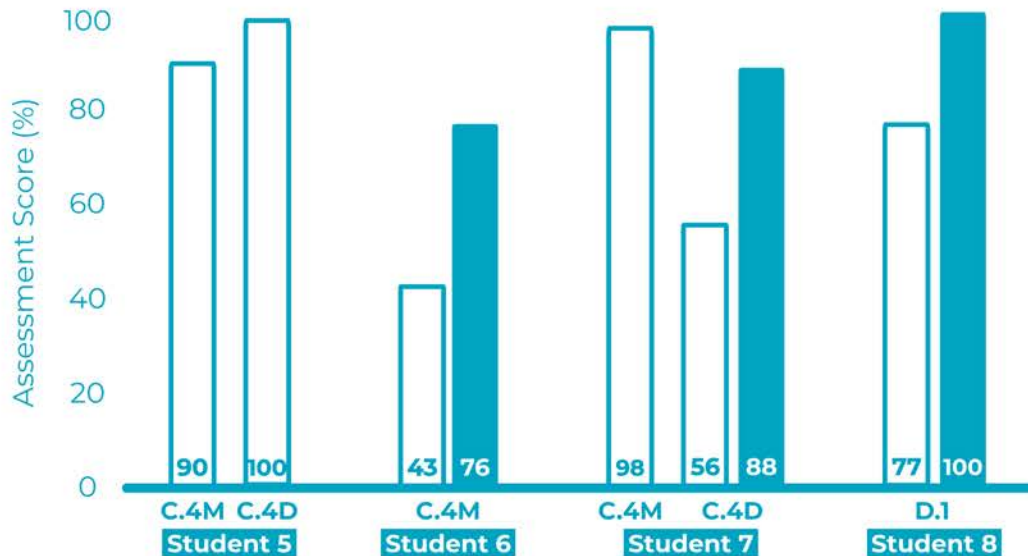
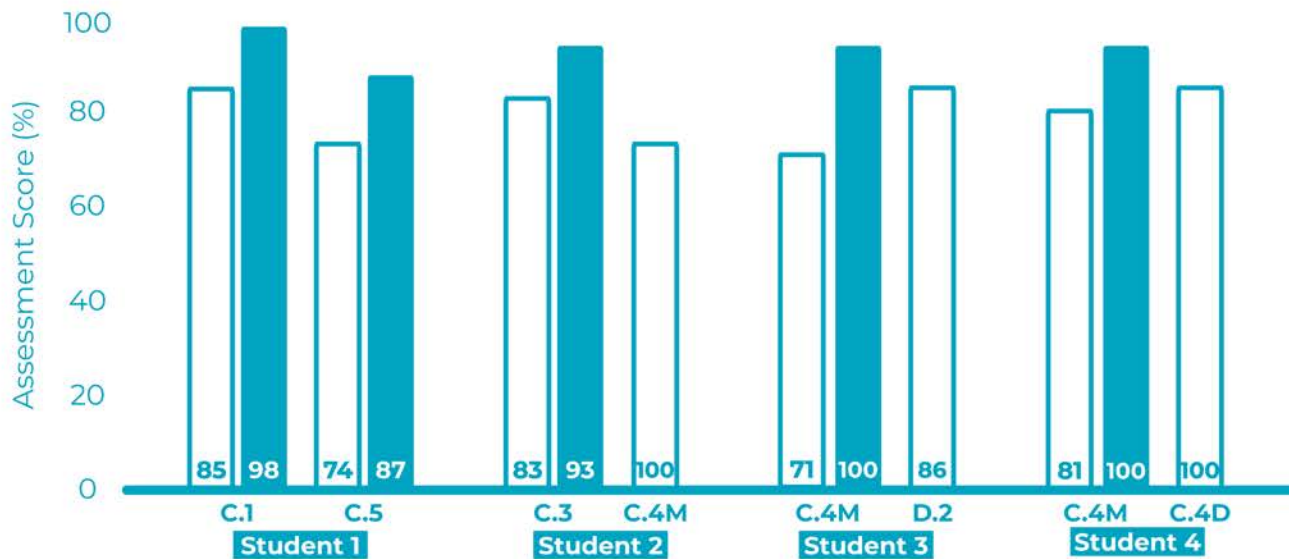
D.3 Module: Fractions & Decimals

- ▶ Converting fractions, equivalent fractions, adding and subtracting fractions.

D.5 Module: Ratios & Percents

- ▶ Ratios, proportions, decimals, percents.

Module Assessments



Average Student Score:

77% Pre-assessment

94% Post-assessment

*8 students were unable to provide reliable data

*Students who achieved a grade of 80-100% on pre-assessments were not required to do a post-assessment



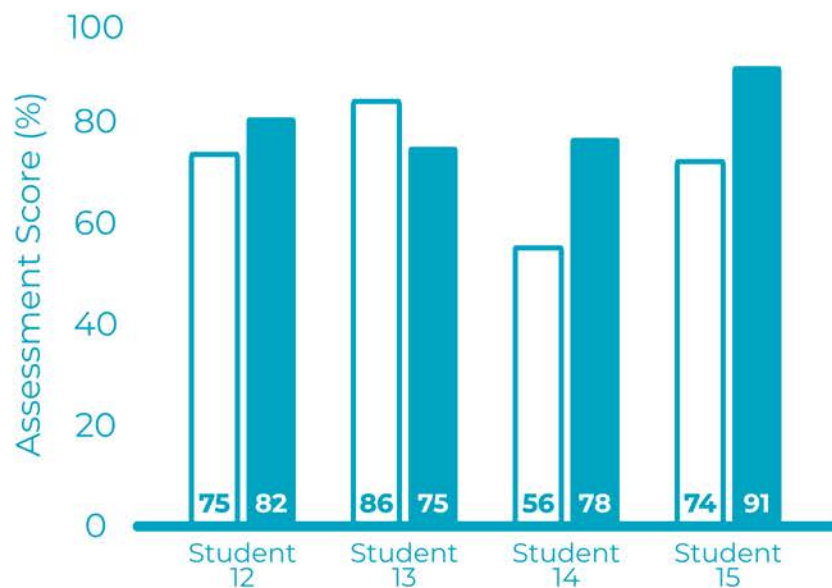
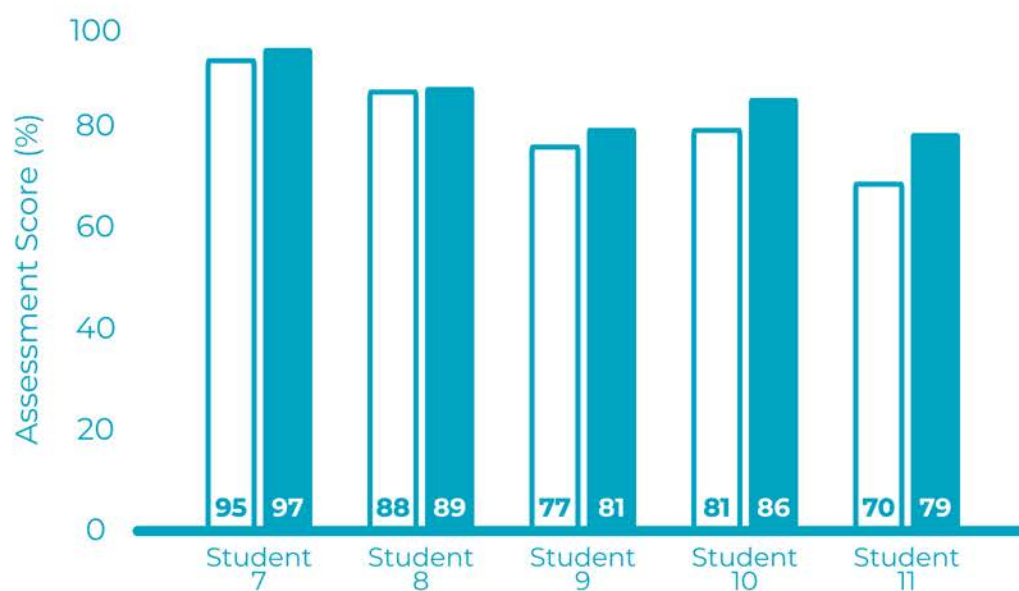
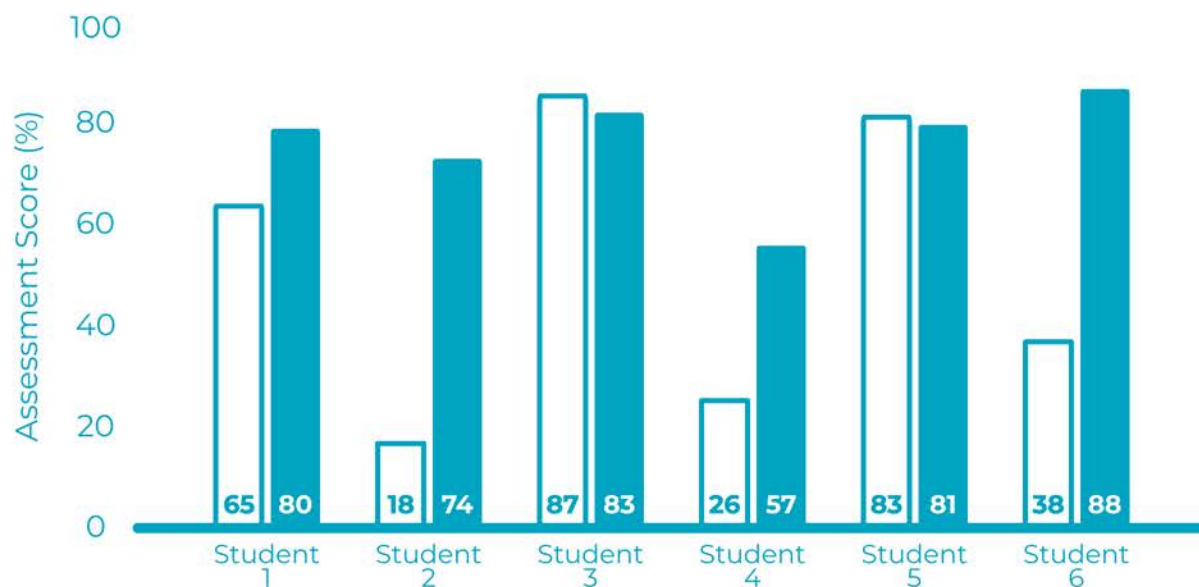
Term 2

Assessments

The following steps outline the assessment process for students during the second term:

- 1** Each student completed a comprehensive pre-assessment to determine which areas to focus on during the program.
- 2** From there, each student worked on worksheets relating to their specific areas of focus.
- 3** Once students had completed their worksheets, they would then complete a comprehensive post-assessment to ensure mastery of the subjects.

Comprehensive Assessment



Average Student Score:

68% Pre-assessment

81% Post-assessment

Program Impact

Total Average Student Score:



Over both terms of the program there was an average increase of 15% in students' math skills,

with 5 students improving over 30%.

John Smith, Math Facilitator, had an interesting conversation with one of the parents on the day of the June celebration. The parent shared that their child had become more engaged in their mathematics learning over the last few months and was achieving far greater success in their school work. Due to the great improvement in their math test scores, the child was excitedly calling their parent during the day to update them on the great progress they were making. This is just one example of the success of the program!



Tutor

"One memorable moment was when I was working with one of the students on unit conversions. They struggled with almost all of the questions but then it finally "clicked" and they started getting them right. It was nice to see the look of accomplishment on their face when they finally figured it out."

Student

"What inspired me to go on and do what I'm supposed to do are the tutors. I had a great experience because I like when tutors push me harder to do my work and I do it."

Survey Results

Student Results	26
Parent Results	26

Student Interest Survey Results

Questions	Pre-Survey			Post-Survey		
	Always	Some-times	Never	Always	Some-times	Never
Math skills are important.	13	10	1	19	8	0
I feel confident with my math skills.	3	19	2	5	20	2
I feel comfortable asking for help in math.	12	7	5	15	9	3
I feel confident about entering high school in one or two years.	9	11	4	8	15	4
I will need some math skills in my adult work/life.	11	11	2	13	12	2
24 students reported data			27 students reported data			

Parent Survey Results

	My child enjoyed attending the N2N 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 N2N Math Success Program.	My child's self-confidence has increased since being in the N2N Math Success Program.
Parent Survey Results	94%	92%	81%	86%
14 parents reported data				

Surveys are a crucial part of our program; they give us insight into the participants' experiences. Throughout the program, we attempted many 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 (offered in multiple languages) at the end of the program to assess any changes in their child's attitude and comfort level regarding math.

*Late entries to the program did not receive pre-surveys

Volunteers

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Volunteers

At Neighbour to Neighbour, we take pride in all of our hard-working and dedicated volunteers. The N2N Math Success Program was fortunate to have a total of 26 volunteers offer their knowledge and practical experience to the program. The tutors helped to create an interactive, safe environment where students could comfortably ask for help.

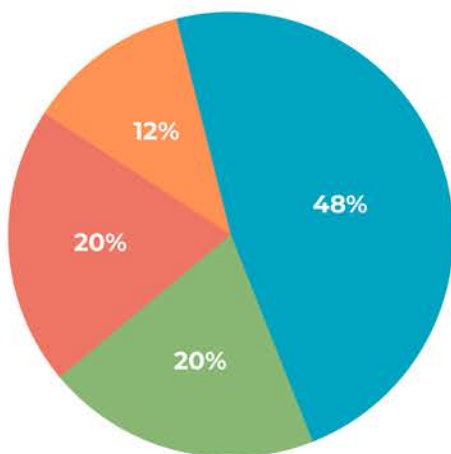
At the start of program, we began with five volunteers which met our goal of providing a 3:1 tutoring experience for students. As the year progressed, we began to see an increase in volunteers as we increased our advertising to the community in the forms of web posts, newspaper ads, and word of mouth. By the second term, we had a total of 16 volunteers which allowed us to offer 1:1 tutoring over the last 3 months. This is especially valuable when it comes to providing individualized, differentiated learning. Additionally, 1:1 tutoring gave us the opportunity to pair specific tutors with students based on individual needs and relationships.



Volunteer Demographics

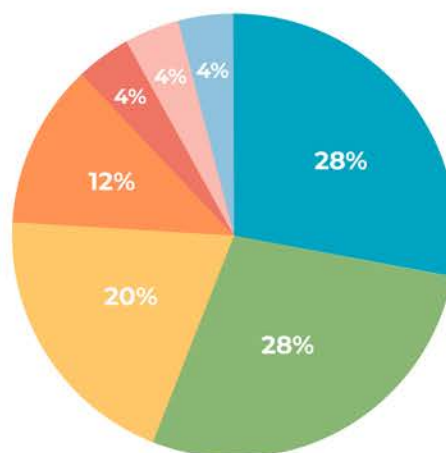
To engage volunteers, we placed recruitment information on various platforms. We put information online (N2N website, Mohawk College website, McMaster University website), in the local newspaper, and asked our established volunteers to spread the word. We focused on youth recruitment by connecting with local high schools. We engaged high school students from Westmount Secondary School, St. Thomas More, St. Jean de Brebeuf, Sir Allan MacNab, Ancaster High School, and Hillfield Strathallan College.

Volunteer Occupations:



- High School Students
- Post-Secondary Students
- Working
- Retired

How did you learn about N2N?



- N2N Website
- Newspapers
- Friends/Family
- School
- N2N Volunteers
- Former N2N Students
- Other



High School & Beyond Panel

Questions & Answers

In both terms, we allocated a session to a panel discussion between students and the tutors who are currently in high school and post-secondary. The students were given the opportunity to ask questions about high school, career trajectory 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.

Is high school extremely difficult? What do you do when you get lost in the hall? Is it recommended to get a job in high school? How is grade 9 math different than grade 8 math?

We encouraged students to ask questions by writing them 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 and post-secondary tutors to respond to those questions through an open, conversation-style forum. This gave students a chance to find out more about high school and post-secondary education from those with current experiences.

The students benefited from the mentorship and guidance of the 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 regarding college, university, and careers. The information session aligns with our goal of helping intermediate students acquire knowledge to support their successful transition into high school.



**Celebrating
Success**



Term 1

On the final day of program, we planned a cookie making session at the Community Food Centre, where 26 people attended. Jody supplied recipes for three different types of cookies that students prepared to be served at the Success Celebration scheduled for the next day.

When asked, most of the students and tutors indicated that they had baked before. The reality turned out to be quite different. I would suggest that they had possibly watched someone who knew how to bake, but they had never actually followed a recipe, or directions for making cookies. Many of the participants had never cracked an egg, knew what molasses was, or measured dry and liquid ingredients. The session turned out to be as much fun as you can possibly have in a commercial kitchen.

So much fun that the students who participated wanted to do it again for the May celebration. We ended up with enough cookies for everyone to have at least three at the Success Celebration and 9 families were able to take some home. In addition to the food and cookies, we gave out five \$50 gift cards to the ballot winners and \$20 gift cards to all the other participants.

Celebration Attendance - Term 1

15 Students

10 Guests

7 Tutors

32 Total Individual Attendees

Term 2

Once again we got together to celebrate the success of the students and thank the tutors for their commitment with a light meal. Our special guests included 9 family members, Erika Reid, a grade 7 teacher from Westview and Marc Brennan, the Special Education Resource Teacher at Annunciation of Our Lord. N2N gave out five \$50 gift cards to the ballot winners and \$25 cards to all the other participants. The students also gave all the tutors thank you cards. Since we had so many tutors join us in the last term the students didn't get to know all their names.

In a perfect example of problem solving, students fanned out the thank you cards and called the tutors up by name. The tutors then took the card with their name on it and the students thanked them and looked brilliant. We always endeavor to engage parents throughout the program (informing them of their child's attendance, letting them know of any future changes in programming), and the celebration was one more way we engaged them.

Celebration Attendance - Term 2

14 Students

9 Guests

13 Tutors

36 Total Individual Attendees





Reflections & Future Plans



Deban Brunette

Director of Educational Programs

"Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding."

-William Paul Thurston

Over the past five terms we have learned so much about the needs of the students and the tutors. We learned by surveying everyone involved, by listening to suggestions and comments, and by trying different things to see if we can turn them into "best practices". For the first 3 sessions we staffed the program with university, post-university, and high school students. The major learning this year was the difference it makes to have experienced educators as facilitators of the program. Processes changed for the better and relationships became stronger. We will run one 25 week program next year with two terms - Fall & Spring. We will continue to use JUMP Math Essentials as the foundation of the program and have already made arrangements to have the new team members participate in JUMP Math training sessions. We are excited about our new partnership with McMaster Children & Youth University (MCYU). They will be providing tutors who will bring experiential learning to the program. More on that next year.

When John Mighton (seen on the next page), the creator of JUMP Math, came out in April to speak to the math team we were inspired to provide our students with more building blocks so that they can eventually do inquiry based learning. To be successful in math, you not only have to know the basics, you have to master the basics. Addition, subtraction, multiplication and division lead to fractions, ratios and percentages. We need to build a math foundation on stone, not sand and give the students the tools to continue to build their skill level and self-confidence. One thing we have learned from all our endeavors working with children is: once you show them how to be successful and build their self-confidence, they never disappoint. We thank Hamilton Community Foundation-ABACUS for allowing us the time and resources to bring math skills to students in grades 7 & 8. The Math Success Program continues to evolve and improve as we build a strong foundation for learning.

Deban Brunette & John Mighton



Tutor

"I remember a particular moment when a student thanked me for helping them complete challenging schoolwork. They said that my aid had saved them many hours of homework, which was incredibly gratifying and made my commitment worthwhile because it brought value to others."

Thank You

On Behalf of N2N: 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. Thank you to Jump Math for providing program materials and a special thanks to John Mighton, creator of Jump Math, for joining us to share his vision. We thank all of our community supporters for their advice and counsel, and our volunteers for sharing their time and talent.

Funder



Program Materials



School Contacts

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

Marc Brennan - Annunciation of Our Lord Catholic Elementary School (HWCDSE)

Principals

Joanna Crapsi - Principal, Westview Middle School (HWDSB)

Lian Cavarzan - Principal, Annunciation of Our Lord Catholic Elementary School (HWCDSE)

Facilitators

N2N Math Facilitators

Jody Bruulsema

John Smith

Volunteer Tutors

Neil Lin

Amy Schaefer

Victoria Huang

Justin Lin

Mark Melanson

Marcy Murchie

Ashok Grover

Christian Hernandez

Lora Shablak

Max Delle Grazie

Siobhan Mildren

Nick Horvath

Nicholas Christoforou

Sarah Moran

Senna Thomas

Iris Elik

Emily Foxman

Gelan Xue

Summer Thomas

Christopher Climie

Susan Radford

Luke Gerow

Nancy Hurst

Carly Charron

Jungwon Lim

Lauren Wong



n2ncentrehamilton



tutor@n2ncentre.com



@n2ncentre



www.youtube.com/Neighbour2Neighbour

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NEIGHBOUR

www.n2ncentre.com

28 Athens Street
Hamilton, ON, L9C 3K9
Phone: 905 574 1334 ex. 204
Fax: 905 574 1668