



# Is Your Student Struggling With Math?

- presented by the Academic Resource Committee
- with special guests, Stephanie Kendall and Jennifer Molloy, Assistant Curriculum Leaders of Mathematics at Northern



# Agenda

- 1) Introductions
- 2) Q and A - Stephanie Kendall, Jennifer Molloy - Assistant Curriculum Leaders for Math
- 3) Tips from other experienced math teachers (jr high, high school)
- 4) Tips from other parents
- 5) Additional resources to consider



## Q and A with Stephanie Kendall and Jennifer Molloy

- Can you name/describe some common challenges and simple solutions that you see in math classes? Are they grade specific?
- Some students have additional factors that contribute to numeracy challenges- learning differences, anxiety, lack of motivation. What can Northern staff or parents do to help address these as well?
- When should a student seek help? From whom? How often?
- What is an appropriate parent's role in supporting student success in math in high school?
- Northern has a wide range of math classes available in Grade 11 and 12. What should a student and parent consider as course selection is made? Can you describe the learning style and skills in each class, and what kind of learner each suits best? Are there extra supports in Grade 9 and 10 (during the year or summer) that help prepare a solid foundation for those years?
- Are there additional resources beyond Northern that you would recommend? (websites, tutors, programs, etc.)



## Tips from Other Teachers - Asking for Help

The best resource is the math teacher that gives extra help with his/her own class - as long as the student/teacher rapport is good.



As soon as a teacher has explained something that the student does not understand, a hand needs to go up or the child should call over the teacher during class. Having questions go unanswered for even a few days just confuses the student and then the next class (especially for math) builds on the previous idea. If the child is too shy or too embarrassed to ask in class (often gifted students won't ask as they feel they "look dumb"), seeking the teacher right after school or the next morning is key.

*The best way to support students is to help them learn to self advocate when they do not understand a concept (ask the teacher to explain again or in another way).*



The teacher is the one with the expectations on how they want answers to be set up and can provide alternative ways to approach a problem even though they may have only shown one in class. Many times students think they didn't "get it" when first shown, not knowing that many teachers can explain things in many ways. The one-on-one time can help explore that and get to the heart of what it is the student doesn't understand. It also provides a special bond between student and teacher that is not necessarily developed in the classroom.



## Tips from Other Teachers - Skills

As I tutor grade 9 and 10 students, I have noticed that students who do not know their multiplication/division facts struggle with factoring equations and also finding common denominators when solving algebraic equations involving fractions. Students also have trouble breaking down word problems or applying concepts to create equations. Typically, 5 to 10 minutes a day practicing their number facts can really go a long way to building pattern recognition when solving these types of problems.

It is hard to get high school students to commit to this extra work as they are required to complete additional work booklets, and they may already be feeling pressure with the math they already have to do. Covid has added another challenge, as many students disengaged with their learning during the online portion of the teaching year and then the on again/off again in class/class online that occurred in the last school year. Students feel anxious about what they know and further shut down.



A great app to build basic numeracy skills is IXL. It is not free but spending 5 to 10 minutes a day helps fill in basic gaps and provides practice to master basic numeracy skills, formulas and basic geometric concepts. Once students have these skills, the high school work becomes less onerous as they are not spending time looking for numerical patterns and can just dive in to the real analytical work.

Khan Academy is another free app that can help students review skills using a short video to teach concepts and then practice questions to check for understanding.





## Tips from Other Teachers - Tutors

Tutoring can be a huge help if the gaps are significant or the learning style is compounded by special needs, processing issues or they just need one- on-one support to build skill and confidence. Some students just need more time practice to understand a concept, so that they can start to feel comfortable enough to take risks and try. I typically suggest two days a week with students.

Parents will want to find someone who is not only familiar with the high school curriculum but also the two or three years before that so they can fill in gaps. Typically a good tutor will be able to teach the concepts of the current lesson and also be able to see where there might be gaps from previous years and fill those in and then use the rest of the time to help ensure that the homework is completed, so they are in good shape for the next lesson. Once students get comfortable with current material, a tutor can also teach ahead and prime students for the future lessons. During crunch times, like big unit tests or exams, an extra day can be added here and there to help create a study sheet or review all of the unit. Knowing how to make a good study sheet is an excellent skill to develop as many students do not know how to study or consolidate info.



You want a tutor that follows the teacher's methodology as much as possible, so that the student isn't confused by having to learn 2 different methods.

*Tutors should be at LEAST twice a week to help really struggling students keep focused. Perhaps older, retired teachers are available as well.*



If a child has struggled with math in the past and has math the second semester this year, then it may be beneficial to get a tutor to pre-teach starting now, the big ideas that they will see in Semester 2. That way, when the student starts, they are already primed, have familiarity and more confidence with the materials, and will be more likely to succeed going forward.



## Tips from Other Teachers - Good Habits

A regular routine of coming home, starting homework and then going in the very next day for help will create a pattern. They should try a few math questions, even on days when they don't have the class, to keep it fresh in their mind. A wall calendar with subjects and projects and deadlines should be visible for them every day in their room.

*Students should try their homework and then ask their teachers specific questions.*



Doing all the homework builds skill and speed for tasks such as exams but also helps them to know right away if they do not understand something. If they wait, they start to get anxious, the gaps get bigger and then they start to avoid and then the cycle continues.

*The student should get used to looking over their own work before flipping to the back of the textbook to look up answers. This will help on tests (as there are no answers) so that they learn to find their own mistakes.*



The student should mark each homework question that is incorrect visibly in their notebook. This way they can ask the teacher for help on it quickly and find similar questions to redo to get ready for a larger evaluation.

*Writing a practice test will help mimic a real test. Scramble up questions to write up four pages of questions (the questions are not put in order of the sections of the chapter) and then they should time themselves for about 40 minutes (about 10 minutes per page of work)*

# Tips from Other Parents



I really had to step back from helping my child because it created such stress. So step one may be getting a non-family member to help.

There is usually an area of difficulty and an area of strength. Be a detective.

Do an area of strength at the start of any homework or tutoring session.


Areas of weakness need to be practiced even when it's not that unit in class. My child will start reviewing math a month before the class starts in school.

Use iXL or something online and ask the teacher. Fractions are often an issue for LD kids.

The ideal tutor is a math teacher; they know the rhythm and testing cycles. Peer tutoring is a great idea but start in grade 9. Some are embarrassed to work with another student. Reach out to older kids in the neighborhood.

Tutoring/extra help should be minimum 2 times per week in semester. Maybe 3.

My child benefited greatly from 2 years after school at Arrowsmith for his LD.



Struggling with math seems like a hot topic these days! I find that parents are not alerted early enough that there are problems and then it is much harder for parents to step in and help. I wish I had insisted on seeing every test mark.

At Northern we can get extra time for the kids if they have ADHD or anxiety. We got a form from the guidance counsellor, and I think that will really help my child. We are seeing an educational consultant in April who said her assessment may also mean my child can get extra time in high school as well as university! It will also help us to understand her learning style and hopefully will give her some useful strategies.

I think it's really important to understand why math is hard for kids. Is it the material, learning style or could it also be related to anxiety or a learning disability? I have an example where my other daughter, who was in gifted, was failing math. She had a great math teacher but it was not a good fit for her. We went to guidance who helped us switch to a new teacher and her marks improved dramatically! She has gone on to engineering and loves math! She just had a hard time with the way this teacher taught.

I'm not sure I have any advice other than to find a tutor. I have been in touch with many therapists as well. The difficulty is finding ones that are a good fit and available. Unfortunately, figuring all of this out can be very expensive.





## Resources- mentioned by Ms Kendall and Ms Molloy

Graphing Calculator - <https://www.desmos.com/calculator>

Free tutoring with Ontario certified teachers -  
<https://www.tvomathify.com/students>

Extra practice and instruction - <https://tvolearn.com/collections/courses>  
<https://cemc.uwaterloo.ca/resources/courseware/courseware.html>



## Resources- from parents and other teachers

- Math Guru - <https://www.themathguru.ca/>
- Blyth Academy - <https://www.blytheducation.com/our-campuses/lawrence-park>
- Arrowsmith - <https://arrowsmithschool.org/>
- Tutors - retired teachers (Gd 7-12- TCDSB retired math teacher recommendation)
- iXL - <https://ca.ixl.com/>
- Khan Academy (free) - <https://www.khanacademy.org/>
- Other textbooks that are not already being used (eg. Mc Graw-Hill vs Nelson vs. Foundations of math) can offer similar yet different questions for extra practice on a topic



## Find us!

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