



April 11, 2018

Dear Families:

There has been growing discussion both nationally and within Somerville about how to best challenge and support students with a wide range of proficiency in mathematics.

Over the last few years, we have made significant changes to our math curriculum and assessments, designed to respond to the needs of our students and help them develop a strong conceptual understanding of math. We still hear from a few parents that their children are not feeling challenged in math class. Other parents tell us that they want support getting their children up to grade level proficiency. While some students say that they hate math because they're not smart at it, others say they are burnt out on math, having taken additional accelerated math classes outside of school. Teachers are in a challenging position trying to deliver rigorous instruction and address the growing range of math levels in their classrooms.

I have asked Uri Harel, our K-8 curriculum coordinator, with support from Paula O'Sullivan, who brings her experiences as the Chair of the Somerville Education Programs Subcommittee, parent, and math coach, to lead us forward on this issue. We are writing to let you know about our plans to expand opportunities for all our students to have a positive experience and learn math at a high level. Our work will be guided by the **following principles**:

- **Prioritize The Well-Being of Students:** In our review of tracking and acceleration programs in and out of Somerville, we have seen disturbing evidence that indicates that when students are pushed to race ahead to complete the content of future grade levels, a significant number lose their love for math and end up avoiding math courses in high school. Some students who couldn't keep up have dropped out of these programs and found the experience demoralizing. We must ensure that our actions promote a positive attitude towards math.
- **Model Inclusive and Respectful Discussion:** Recently, we have been disheartened by how disrespectfully a few members of our community have treated our educators over this issue. As adults, we should model for students how a complex issue can be discussed and addressed in a respectful way. We will strive to ensure that a wider range of voices in our community are heard, not just a vocal few.
- **Ensure Equity and Inclusiveness:** Some districts take what appears to be the easier route, breaking students into high and low levels based on test scores, starting as early as the second grade, or labelling students as gifted and talented. In diverse cities such as ours, this has resulted in classes segregated by race and income, placement



decisions affected by bias, students separated from their friends, as well as poorer mathematics achievement for many students. We must find a solution that aligns with Somerville's focus on equity and inclusiveness.

- Promote Conceptual Understanding of Math: Math is not just about quickly calculating and solving equations. It is about deeply understanding the concepts, so that students can solve complex problems, apply math to real-life contexts, and access higher levels of math. Many employers tell us that they would rather hire someone who can work well with others to solve challenging problems and communicate their thinking, than someone who can speed through calculations working in isolation.
- Foster a Growth Mindset: Central to our approach will be promoting a growth mindset in all students and teachers: effort determines the degree to which you succeed in the long run, rather than innate ability. We firmly believe, and research shows, that with this mindset all students can achieve at high levels in math given the necessary support and level of challenge.

Here is a summary of our **initial action steps:**

- Lesson Extensions: Our math coaching team and some teachers have begun developing and piloting extension challenges, games, and projects for each math unit. Expanding this to more grade levels by next year appears to be a promising way to provide deeper challenges to all students once they have mastered the day's lesson.
- Math Intervention Programs: In the past few years, we have piloted some intervention programs that have helped struggling students make impressive gains. Next year, we are planning to expand these opportunities to even more students, allowing them to better access higher level math. More details on these are available on our website.
- Expanded Math Coaching, Professional Development, and Family Workshops: The job of a teacher in a diverse city like Somerville is very fulfilling, but also incredibly difficult. We expect our teachers to provide high quality rigorous instruction while also differentiating for a wide range of learners. This is why we continue to invest heavily in hiring math coaches who provide intensive support and professional development for teachers in differentiating instruction and teaching complex problem solving. Instructional coaches have also facilitated some family workshops focused on teaching family members about our curriculum, the expectations of our students, and how to support their children at home. We will expand coaching and these workshops to all K-8 schools next year.
- Middle Grades Grouping and Acceleration: We are in the process of conducting an extensive review of our grouping and acceleration practices. Currently, in Somerville, schools start grouping students by math proficiency in the beginning of 8th grade. The faster paced group is typically on track to take Geometry in Grade 9, while the regular

group prepares to take Algebra I in Grade 9. Over the last several years, there have been some additional acceleration programs piloted in Somerville. While some students benefit from these acceleration programs (it's always hard to predict who will), there have been enough cases of students who were prematurely accelerated, ending up frustrated and avoiding higher level math courses. In the next month, we will seek input from teachers, students, and families as well as researching the strengths and weaknesses of other grouping and acceleration practices outside Somerville, so that we can determine the best approach moving forward. In mid-May, we will share a detailed plan to address these issues for the upcoming school year..

- **Afterschool Math Enrichment:** Various K-8 schools have implemented some form of after school math, coding, and STEM enrichment open to all students. Expanding this to all schools next year, whether in the form of math clubs/teams, STEM workshops, or coding classes, will ensure equitable access to math enrichment.

In the coming months, we will be seeking feedback from families, educators, and students, through surveys and face-to-face conversations. We look forward to hearing your ideas as we develop and implement a comprehensive plan that supports the achievement of all students within a framework focused on equity, inclusivity, and student well-being. For more information on our action steps, resources, and updates, please visit our math web page:

<http://www.somerville.k12.ma.us/mathinsomerville>

To provide your feedback, please complete this short survey by following this link:

<https://www.surveymonkey.com/r/NRZBJGX>

Sincerely,



Mary Skipper  
Superintendent of Schools



Uri Harel  
K-8 Curriculum Coordinator