

Director's Dispatch

NUMERACY

Fall 2017

The topic of 'mathematics' as a specific subject area in public education, and 'numeracy' as the ability to understand and work with numbers across a wide array of disciplines in a broader societal context, have become a priority for educators regionally, provincially, nationally and internationally.

"Mathematics is everywhere and its importance grows exponentially. Researchers in fact describe numeracy skills as a 'new currency of modern societies' around the world." ~ *PISA 2009: What Students Know and Can Do – Student Performance in Reading, Mathematics and Science*, Organisation for Economic Co-operation and Development (OECD), 2010, pp.33.

As Chief Education Officer of the Renfrew County District School Board, I am proud of the efforts of our students and staff as they work diligently to realize the vision of [Achieving Excellence](#) each and every day...achieving excellence, ensuring equity and promoting well-being and enhancing public confidence. Our [RCDSB 2017-2020 Strategic Plan](#) highlights 'excellence in teaching and learning' as a key guiding principle of our collective work...with educational environments inside and outside of the classroom evolving continuously to enhance the engagement, exploration and achievement of our students. Our Board Improvement Plan shares areas of strength for celebration, areas of growth for consideration, and next steps moving forward in order to improve the achievement and well-being of our students, staff and school communities.

An inherent aspect of each of these foundational documents is the importance of growth, improvement, perseverance and resilience in the area of mathematics, specifically, and numeracy across the curriculum, more broadly. For this reason, mathematics and numeracy will continue to serve as a focal point for the professional development of our staff this school year.

"Learning math results in more than a mastery of basic skills. It equips students with a concise and powerful means of communication. Mathematical language, structures, operations, and processes provide students with a framework and tools for reasoning, justifying conclusions, and expressing ideas clearly... Through mathematical activities that are practical and relevant to their lives, students develop mathematical understanding, problem-solving skills, and related technological skills that they can apply in their daily lives, and eventually, in the workplace." ~ *A Renewed Math Strategy for Ontario*, Ministry of Education Ontario, 2016

The Ministry of Education's recent strategy report related to the growth of the province's highly skilled workforce, [Building the Workforce of Tomorrow: A Shared Responsibility](#), emphasizes the significance of "identifying promising ways of teaching students competencies demanded by the evolving economy such as problem solving, teamwork and entrepreneurial spirit, across curricular and extra-curricular learning opportunities, including through the arts, sports, math and science" as one of its summary recommendations in order to strengthen Ontario's economic prospects (Recommendation 6.3).





System-wide initiatives such as the implementation of Ontario's Renewed Mathematics Strategy, the Eastern Ontario Staff Development Network's Regional Math Project and the ongoing focus on numeracy through our school improvement planning processes will ensure our District continues to address this essential area of growth and improvement as an integral part of our learning journey.

To my mind, the move forward pedagogically will require integrative thinking on the part of us all as stakeholders – as reflective practitioners, as responsible students, as caring parents/guardians, and, as contributing members of society in our communities – so that we are able to carefully weave the effective, research-based instructional practices in literacy and numeracy of the past and present into a dynamic, innovative, ever-evolving vision of teaching and learning environments of the future that continue to enhance the global competencies of critical thinking and problem solving, collaboration, communication, creativity, character development and citizenship.

A comprehensive approach to the teaching and learning of mathematics and its authentic integration into other subject areas as numeracy – with an emphasis on both operational skills and problem-solving contexts – involves integrative thinking of this nature. A comprehensive approach to mathematics and numeracy across the curriculum includes:

- an array of effective instructional practices such as direct teaching of concepts and/or skills to the entire class, mini-lessons for guided groups of students targeting a specific concept and/or skill, and/or individualized instruction tailored to the learning needs of a student(s);
- a variety of settings for whole class, small group, peer and independent learning if/as appropriate;
- a number of opportunities to consolidate the learning that is taking place through purposeful practice on an ongoing basis at school and at home; and,
- the thoughtful utilization of resources and/or tools to support student learning including mathematics manipulatives, digital resources, textbooks, assistive technology, as well as professional resources for staff.

The combination of these aspects in mathematics and other subject areas – carefully woven together through the care, commitment and professionalism of the educators involved – will ensure our students continue to develop both procedural fluency and conceptual understanding in mathematics and numeracy as they apply their knowledge and/or skills to authentic, meaningful problem-solving contexts in school and in life.

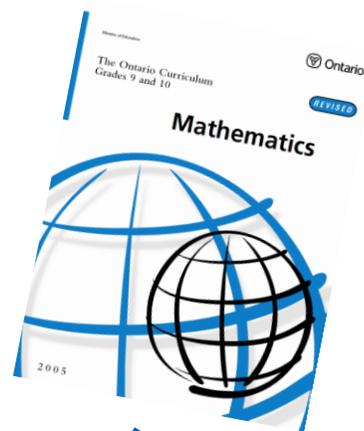
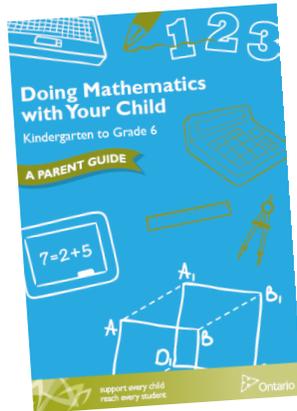
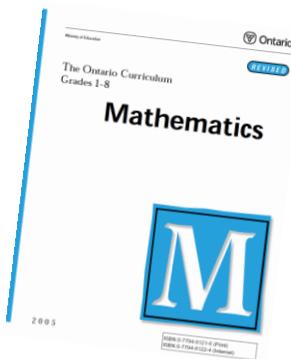
“In the math reform literature, learning math is viewed as a social endeavor. In this model, the math classroom functions as a community where thinking, talking, agreeing, and disagreeing are encouraged. The teacher provides students with powerful math problems to solve together and students are expected to justify and explain their solutions. The primary goal is to extend one's own thinking as well as that of others.” ~ Hufford-Ackles, Fuson & Gamoran-Sherin (2004) in *Student Interaction in the Math Classroom: Stealing Ideas or Building Understanding* by Dr. Catherine D. Bruce – The Literacy & Numeracy Secretariat – Research Monograph#1, 2007

As part of our renewed strategic planning process, staff will be creating a 'Framework for Learning' (F4L) that will aim to deepen learning, including the leveraging of digital in our teaching and learning environments, system-wide. An important component of the F4L will be the establishment of key elements of a comprehensive mathematics program, as noted above, providing educators across our District with a consistent pedagogical guide upon which to design and differentiate tasks for students, as well as a common language for professional dialogue and learning amongst staff.



Along with resources provided as support by the Ministry of Education, including [The Ontario Curriculum, Doing Mathematics with Your Child, Kindergarten to Grade 6 – A Parent Guide](#), and, [Paying Attention to Mathematics Education, K-12](#), we will continue to work diligently with all stakeholders to best meet the needs of our learners in mathematics and numeracy across the curriculum.

“Every student should be equipped with the mathematical knowledge, skills and habits of mind that are essential for successful and rewarding participation in society.” ~ The Mathematics Working Group, Ministry of Education Ontario, 2011



Pino Buffone

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