

DATE: March 17, 2015

TO: Board of Trustees

FROM: Darrel Robertson, Superintendent of Schools

SUBJECT: Update on Numeracy and Mathematics

ORIGINATOR: Ron MacNeil, Assistant Superintendent of Schools
Mary Michailides, Assistant Superintendent, Support for Schools

RESOURCE STAFF: Janice Aubry, Amanda Forster, Valerie Leclair, Greg McNulty

REFERENCE: District Strategic Plan
[Ministerial Order on Student Learning \(#001/2013\)](#)
[January 20, 2015 Response to Request for Information #069](#)

ISSUE

This report provides an update to the Board of Trustees regarding District work supporting mathematics and numeracy.

BACKGROUND

Mathematics and numeracy teaching and learning are fundamental to student success. Mathematics in Alberta programs of study encourage learning through problem-solving, incorporating the mathematical processes to achieve an understanding of the nature of mathematics through the development of specific knowledge, skills and attitudes. Numeracy is the confidence and habits of mind to engage with, critically assess, reflect upon, and apply quantitative and spatial information when making judgments and decisions or taking actions in all aspects of daily living. Much of the explicit teaching of numeracy skills occurs in the mathematics class. Numeracy is the application of these skills across all subject areas and in daily life.

In District Priority 1, Goal Two: Success for Every Student, an identified outcome is to ensure that “more students demonstrate growth and achieve student learning outcomes with a specific focus on literacy and numeracy.” An outcome identified in the Ministerial Order on Student Learning (#001/2013) is “to enable all students [to] employ literacy and numeracy to construct and communicate meaning.”

For the past two years the percentage of District students meeting the acceptable standard in mathematics on Provincial Achievement Tests (PATs) and Diploma Examinations has been approximately:

- seventy-seven per cent for Grades 3 and 6 mathematics;
- seventy-one per cent for Grade 9 mathematics and mathematics 30-2; and
- seventy-five per cent for mathematics 30-1.

The percentage of District students meeting the acceptable standard in mathematics on Provincial Achievement Tests has been higher than the percentage of students meeting the acceptable standard in mathematics for the province in mathematics 3, 6, and 9 for the past four years.

Key District projects and activities have been initiated through the spring of 2014 and in 2015 to support mathematics and numeracy teaching and learning:

- In August 2014, a development team comprised of school and central staff produced the initial Edmonton Public Schools (EPSB) Math Intervention/Programming Instrument (MIPI) for Grades 2 to 9. This instrument was based on the outcomes identified in the provincial Mathematics Kindergarten to Grade 9 Program of Studies. The goals of the development of the MIPI are to:
 - provide information that would identify students who may require mathematics intervention;
 - continue the conversation about best practices in mathematics at schools and in catchments; and
 - may inform mathematics programming, including potential interventions, in classrooms across the District, when used in conjunction with other sources of data.
- The MIPI was divided into two sections per grade. Section 1 of the MIPI was designed to assess basic knowledge and application of the learner outcomes in the mathematics curriculum from the previous year. Section 2 was designed to support more advanced students around higher levels of mathematical vocabulary and problem solving. Section 1 of the MIPI was successfully administered in all District schools Grades 2 to 9. Section 2 was provided to schools in October for optional implementation. After the completion of Section 1 of the MIPI, a survey was provided to all schools with the goal of identifying areas for improvement. A meeting was held in January 2015 with the MIPI development team and three other Alberta school jurisdictions to discuss the MIPI initiative, incorporate changes to Section 1 based on the survey feedback, and to contribute to the overall improvement of the MIPI.
- The provincial pilot of the Student Learning Assessments (SLAs) for numeracy was implemented in October 2014. Information about this pilot was provided at the January 20, 2015 Board Meeting.
- EPSB implemented the provincial Kindergarten to Grade 3 Curriculum Development Prototyping Project, which included:
 - the development of student learning outcomes for mathematics;
 - the identification of teaching and learning resources;
 - the identification and development of draft classroom assessments; and
 - the development of a Kindergarten to Grade 12 Mathematics Scope and Sequence.
- External stakeholders with specific interests and expertise in mathematics provided feedback during the development process. The Westbrook School Kindergarten to Grade 3 staff field tested the mathematics draft student learning outcomes, draft classroom assessments and teaching and learning resources with their students.
- A District Data afternoon was held on January 28, 2015, for school representatives and central staff. Participants were provided context around key data sources gathered in the District, including prior level of achievement data, five year PATS roll-up data and five-year High School Diploma roll-up data. District and school level data was examined.
- The First Nation, Métis and Inuit Edukits were reviewed to further integrate numeracy concepts. Each kit now includes one to two numeracy classroom assessment tasks.

CURRENT SITUATION

Key activities and initiatives are in progress to support mathematics and numeracy:

- A meeting is scheduled for the MIPI development team in March to create vertical alignment for Grades 2 to 9 of the Section 1 instrument. A Grade 10 MIPI will be developed for September 2015. Catchment work has been initiated related to the MIPI, including work supported through the Equity Fund.
- A working group of school and central leadership staff has been established to develop a guiding document and a four-year action plan to support mathematics and numeracy teaching and learning. The action plan will guide the identification, development and implementation of a range of supports to strengthen mathematics and numeracy teaching and learning.
- Professional learning supports are currently provided through catchment groups and to individual schools. Central departments such as Curriculum and Resource Support and external professional learning providers such as the Edmonton Regional Learning Consortium also provide professional learning supports to District staff. Curriculum and Resource Support has established a support team for mathematics and numeracy. A mathematics/numeracy curriculum consultant has been hired and provides professional learning support to leadership groups, catchments and schools. Parent information sessions have also been provided.
- Teachers continue to be eligible to receive financial support for learning related to numeracy and mathematics teaching and learning through the Human Resources Teacher Development Program, Clause 23 Professional Improvement Program and through the Alberta Teachers Association Staff Development funds.
- Exploration of new mathematics interventions used in other Alberta school districts is in progress.
- Websites continue to be developed to support staff in the areas of mathematics and numeracy teaching and learning.
- A Topics of Interest section on the epsb.ca website is under development to provide information to parents and the public. This site will include District and Alberta Education information and resources.

KEY POINTS

- The MIPI initiative was successful in providing valuable information to teachers and principals to strengthen mathematics programming and interventions.
- A numeracy guiding document and a four-year action plan are under development.
- Professional development supports are in place for District staff.
- Parent information is available.

ATTACHMENTS & APPENDICES

N/A

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