



Administrative Procedure 4080

Numeracy Development of Students K-12

Board Governance Policy Cross Reference: [1](#), [12](#)

Administrative Procedures Cross Reference:

[Equity](#)

[Assessment and Reporting of Student Learning and Achievement](#)

Form Cross Reference:

Legal/Regulatory Reference:

[Manitoba Education Mathematics Curriculum](#)

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The Brandon School Division believes that democratic schooling and public education must provide foundational and essential knowledge and skills to all students. Inherent within this belief is the understanding that at the heart of democratic schooling is the development of students' numeracy knowledge and skills. Numeracy and literacy education form the basis for any effort to strengthen Canada's position as an information and technology-based society.

Currently, 21st Century research and thinking defines numeracy as:

- having the ability to recognize the mathematical demands and possibilities in a situation;
- knowing how math can be used to solve an authentic problem and using mathematical skills to do so;
- feeling competent and confident in one's own ability to draw on the necessary knowledge and apply it in new and relevant ways to make well-founded judgments;
- determining solutions that meet the needs of the current circumstance, as well as future situations.

Numeracy is an aggregate of skills, knowledge, beliefs, habits of mind, communication capabilities, and problem-solving strategies that people need in order to engage effectively and autonomously in quantitative situations arising in life. Numerate individuals are interested in making mathematical judgments and conclusions as constructive, concerned, and reflective citizens in a democratic, socially just, and sustainable society.

Education must promote numeracy in a way that engages and prepares students to become conscious citizens in meeting the demands of a technologically evolving and ever-changing society. Numeracy development of students in the Division is divided into three areas: Components of Effective Numeracy Teaching and Learning, Assessment of Numeracy Skills, and Numeracy Interventions.

Components of Effective Numeracy Teaching and Learning

Change, constancy, number sense, patterns, relationships, spatial sense, and uncertainty are the characteristics that define the nature of mathematics. Varying combinations of these characteristics form the basis of numeracy instruction in early years, middle years, and at high school. Students at all three levels of schooling (K-12) continually work on developing their conceptual understandings, procedural thinking, and problem solving skills in numeracy. To become mathematically proficient and lifelong numeracy learners, students must be given ample opportunity to work within a balance of the following components of an effective numeracy program:

- an environment that reflects a positive view of mathematics learning and what students are able to do mathematically;
- a climate that encourages students to take risks and persevere;
- foundational outcomes taught and assessed by collaborative teacher teams;
- connections to students' experiences, interests, language, culture, prior knowledge, other subject areas, and real world contexts;
- learning progressions that move from concrete (manipulatives), to pictorial (visual representations), and finally, to the abstract (symbolic);
- mathematical processes, including mental math and estimation, problem solving strategies, reasoning, technology, and visualization;
- flexible groupings that nurture personalized learning through modelled, guided, shared, and independent practice;
- math talk that includes discussion, collaboration, explanation, questioning, conferencing, and most importantly, feedback; and
- variety of ways to learn and demonstrate learning.

At every level of numeracy instruction, the foundation is to be based upon researched best practice, constant and continuous feedback to students, reflection, and identified professional development for teachers and numeracy teams.

The Division provides direction and resources to enhance and support quality numeracy instruction and learning opportunities for all students. The Division's *Equity Administrative Procedure* enhances the base of numeracy practice and strategic direction for the future of numeracy achievement in the Division. Central to delivering fair and equitable learning opportunities in numeracy for all students is the close

examination and evaluation of the appropriateness of the programs and services, both within the classroom setting and in the broad organizational processes of planning and implementation.

Assessment of Numeracy Skills

The Division has clearly expressed its core beliefs as related to assessment, evaluation, and reporting on student learning and achievement in the administrative procedure *Assessment and Reporting of Student Learning and Achievement*. The formative assessment of numeracy skills will be completed by teachers on an ongoing basis to inform instruction. Response to Interventions' rigorous on-going assessment practice will ensure that all students achieve at high levels.

Numeracy Interventions

The implementation of Response to Intervention will provide all students with appropriate numeracy interventions. Interventions will be provided to students when needed to guarantee all students achieve at high levels.