

Mathematics 11

Foundational Outcomes

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Prepared by the Department of Education and Early Childhood Development

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Outcomes Framework Mathematics 11 (2020-2021)

In September 2020, teachers will be working hard to create a space that is safe and welcoming for all learners no matter the location of their “classroom”. The first weeks will still be a time to establish a sense of community, engage learners in rich interactive experiences to promote critical thinking and create opportunities for collaboration and discussion. This is an opportune time to develop a culture and a climate for mathematics learning, conducive to collaboration, risk taking and inquiry.

The **Foundational Outcomes** identified in this document represent outcomes determined to be relevant for future learning in mathematics. Decisions about foundational outcomes were made in consultation with teachers, provincial mathematics team, Board and Regional Centre staff. The foundational outcomes are meant to guide teachers in making decisions about creating learning experiences that will prepare and engage their learners in a responsive way. However, a teacher’s professional judgment remains the most important guide to effectively responding to the needs of their learners.

Colour coding has been used to identify outcomes and indicators as foundational (**green**), optional (**orange**) or non-foundational (**red**) for the 2020-2021 school year.

<p>M01 Students will be expected to solve problems that involve the application of rates.</p> <p>Performance Indicators: all indicators</p>
<p>M02 Students will be expected to solve problems that involve scale diagrams, using proportional reasoning.</p> <p>Performance Indicators: all indicators</p>
<p>M03 Students will be expected to demonstrate an understanding of the relationships among scale factors, areas, surface areas, and volumes of similar 2-D shapes and 3-D objects.</p> <p>Performance Indicators: all indicators</p>
<p>G01 Students will be expected to derive proofs that involve the properties of angles and triangles.</p> <p>Performance Indicators: all indicators</p>
<p>G02 Students will be expected to solve problems that involve the properties of angles and triangles.</p> <p>Performance Indicators: all indicators</p>

G03 Students will be expected to solve problems that involve the cosine law and the sine law.

Performance Indicators:

- G03.01 Draw a diagram to represent a problem that involves the cosine law and/or sine law.
- G03.02 Explain the steps in a given proof of the sine law and of the cosine law.
- G03.03 Solve a problem involving the cosine law that requires the manipulation of a formula.
- **G03.04 Explain, concretely, pictorially or symbolically, whether zero, one or two triangles exist, given two sides and a non-included angle.**
- G03.05 Solve a problem involving the sine law that requires the manipulation of a formula.
- G03.06 Solve a contextual problem that involves the cosine law and/or the sine law.

LR01 Students will be expected to analyze and prove conjectures, using inductive and deductive reasoning, to solve problems.

Performance Indicators: all indicators

LR02 Students will be expected to analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.

Performance Indicators: all indicators

S01 Students will be expected to demonstrate an understanding of normal distribution, including standard deviation and z-scores.

Performance Indicators: all indicators

S02 Students will be expected to interpret statistical data, using confidence intervals, confidence levels, and margin of error.

Performance Indicators: all indicators

S03 Students will be expected to critically analyze society's use of inferential statistics.

Performance Indicators: all indicators

RF01 Students will be expected to model and solve problems that involve systems of linear inequalities in two variables.

Performance Indicators: all indicators

RF02 Students will be expected to demonstrate an understanding of the characteristics of quadratic functions, including vertex, intercepts, domain and range, and axis of symmetry.

Performance Indicators: **all indicators**