

Mathematics 8

Foundational Outcomes

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Prepared by the Department of Education and Early Childhood Development

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Outcomes Framework Grade 8 (2020-21)

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.

N01 Students will be expected to demonstrate an understanding of perfect squares and square roots, concretely, pictorially, and symbolically (limited to whole numbers).

Performance Indicators: all indicators

N02 Students will be expected to determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).

Performance Indicators: all indicators

N03 Students will be expected to demonstrate an understanding of and solve problems involving percents greater than or equal to 0%.

Performance Indicators: all indicators

N04 Students will be expected to demonstrate an understanding of ratio and rate.

Performance Indicators: all indicators

N05 Students will be expected to solve problems that involve rates, ratios, and proportional reasoning.

Performance Indicators: all indicators

N06 Students will be expected to demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially, and symbolically.

Performance Indicators: all indicators

N07 Students will be expected to demonstrate an understanding of multiplication and division of integers, concretely, pictorially, and symbolically.

Performance Indicators: all indicators

PR01 Students will be expected to graph and analyze two-variable linear relations.

Performance Indicators: all indicators

PR02 Students will be expected to model and solve problems, concretely, pictorially, and symbolically, where a , b , and c are integers, using linear equations of the form $ax = b$; $x/a = b$, $a \neq 0$; $ax + b = c$; $x/a + b = c$, $a \neq 0$; $a(x + b) = c$

Performance Indicators: all indicators

M01 Students will be expected to develop and apply the Pythagorean theorem to solve problems.

Performance Indicators: all indicators

M02 Students will be expected to draw and construct nets for 3-D objects.

Performance Indicators: all indicators

M03 Students will be expected to determine the surface area of right rectangular prisms, right triangular prisms, and right cylinders to solve problems.

Performance Indicators:

M03.01 Explain, using examples, the relationship between the area of 2-D shapes and the surface area of a given 3-D object.

M03.02 Identify all the faces of a given prism, including right rectangular and right triangular prisms.

M03.03 Identify all the faces of a given right cylinder.

M03.04 Describe and apply strategies for determining the surface area of a given right rectangular or right triangular prism.

M03.05 Describe and apply strategies for determining the surface area of a given right cylinder.
M03.06 Solve a given problem involving surface area.

M04 Students will be expected to develop and apply formulas for determining the volume of right rectangular prisms, right triangular prisms, and right cylinders.

Performance Indicators: all indicators

G01 Students will be expected to draw and interpret top, front, and side views of 3-D objects composed of right rectangular prisms.

Performance Indicators: all indicators

G02 Students will be expected to demonstrate an understanding of the congruence of polygons under a transformation.

Performance Indicators: all indicators

SP01 Students will be expected to critique ways in which data is presented.

Performance Indicators: all indicators

SP02 Students will be expected to solve problems involving the probability of independent events.

Performance Indicators: all indicators