

Mathematics 2

Foundational Outcomes

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Outcomes Framework Grade 2 (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 say the number sequence by
-1s, forward and backward, starting from any point to 200
-2s, forward and backward, starting from any point to 100
-5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100
-10s, starting from any point, to 100

Performance Indicators: all indicators

N02: Students will be expected to demonstrate if a number (up to 100) is even or odd.

Performance Indicators:

N02. 01: Use concrete materials or pictorial representations to determine if a given number is even or odd.

N02.02: Identify even and odd numbers in a given sequence, such as on a hundred chart.

N02.03: Sort a given set of numbers as even numbers and odd numbers.

N03: Students will be expected to describe order or relative position using ordinal numbers (up to tenth).

Performance Indicators: all indicators

N04: Students will be expected to represent and partition numbers to 100.

Performance Indicators:

N04.01: Represent a given number using concrete materials, such as ten-frames and base-ten materials.

N04.02: Represent a given number using coins (pennies, nickels, dimes, and quarters).

N04.03: Represent a given number using tallies.

N04.04: Represent a given number pictorially.

N04.05: Find examples of a given number in the environment.

N04.06: Represent a given number using expressions (e.g., $24 + 6$, $15 + 15$, $40 - 10$)

N04.07: Read a number (0–100) given in symbolic or word form.

N04.08: Record in words a given number (0–20).

N04.09: Record, symbolically, any number (0–100).

N05: Students will be expected to compare and order numbers up to 100.

Performance Indicators:

N05.01: Compare and order a given set of numbers in ascending or descending order and verify the result using a hundred chart, number line, ten-frames, or by making references to place value.

N05.02: Identify errors in a given ordered sequence.

N05.03: Identify missing numbers in a given hundred chart.

N05.04: Identify errors in a given hundred chart.

N06: Students will be expected to estimate quantities to 100 by using referents.

Performance Indicators:

N06.01: Estimate a given quantity by comparing it to a referent (known quantity).

N06.02: Estimate the number of groups of ten in a given quantity using 10 as a referent.

N06.03: Select between two possible estimates for a given quantity and explain the choice.

N07: Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.

Performance Indicators: all indicators

N08: Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.

Performance Indicators: all indicators

N09: Students will be expected to demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by:

- using personal strategies for adding and subtracting with and without the support of manipulatives
- creating and solving problems that involve addition and subtraction
- explaining and demonstrating that the order in which numbers are added does not affect the sum
- explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference

Performance Indicators:

N09.01: Solve a given story problem of any type by modelling it with materials or a diagram, and write a number sentence that represents the thinking in the solution.

N09.02: Solve a given story problem of any type by writing a number expression and combining the numbers to complete the number sentences.

N09.03: Match a number sentence to a given story problem.

N09.04: Create an addition or a subtraction number sentence and a story problem for a given solution.

N09.05: Model addition and subtraction using concrete materials or visual representations and record the process symbolically.

N09.06: Add a given set of numbers in two different ways and explain why the sum is the same.

N09.07: Recognize and create equivalent addition and subtraction number sentences.

N10: Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.

Performance Indicators:

N10.01: Explain the mental mathematics strategy that could be used to determine basic addition facts.

- Doubles Facts
- Plus One Facts
- One-Apart (Near Doubles) Facts
- Plus Two Facts
- Plus Zero Facts
- Make-10 Facts
- Two-Apart Facts
- Plus Three Facts

N10.02: Use and describe a personal strategy for determining a sum to 18.

N10.03: Quickly recall basic addition facts to 18 in a variety of contexts.

N10.04: Explain the think-addition strategy used to determine a basic subtraction fact.

N10.05: Use and describe a personal strategy for determining the subtraction facts.

PR01: Students will be expected to demonstrate an understanding of repeating patterns (three to five elements) by describing, extending, comparing, and creating, patterns using manipulatives, diagrams, sounds, and actions.

Performance Indicators:

PR01.01: Identify the core of a given repeating pattern.

PR01.02: Describe and extend a given double attribute pattern.

PR01.03: Create a repeating non-numerical pattern and explain the rule.

PR01.04: Predict an element of a given repeating pattern using a variety of strategies and extend the pattern up to the tenth element to verify the prediction.

PR01.05: Translate a repeating pattern from one mode to another.

PR01.06: Compare two given repeating patterns, and describe how they are alike/different.

PR02: Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, and creating numerical patterns (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds, and actions.

Performance Indicators: all indicators

PR03: Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).

Performance Indicators:

PR03.01: Determine whether two given quantities of the same object (same shape and mass) are equal by using a balance scale.

PR03.02: Construct and draw two unequal sets using the same object (same shape and mass) and explain the reasoning.

PR03.03: Demonstrate how to change two given sets, equal in number, to create inequality.

PR03.04: Choose from three or more given sets the one that does not have a quantity equal to the others and explain why.

PR04: Students will be expected to record equalities and inequalities symbolically, using the equal symbol or not equal symbol.

Performance Indicators: all indicators

M01: Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years.

Performance Indicators: all indicators

M02: Students will be expected to relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass.

Performance Indicators: all indicators

M03: Students will be expected to compare and order objects by length, height, distance around, and mass using non-standard units and make statements of comparison.

Performance Indicators:

M03.01: Estimate, measure, and record the length, height, distance around, or mass of a given object using non-standard units.

M03.02: Compare and order the measure of two or more objects in ascending or descending order and explain the method of ordering.

M04: Students will be expected to measure length to the nearest non-standard unit by using multiple copies of a unit and using a single copy of a unit (iteration process).

Performance Indicators:

M04.01: Explain why overlapping or leaving gaps does not result in accurate measures.

M04.02: Count the number of non-standard units required to measure the length of a given object using a single copy or multiple copies of a unit.

M04.03: Estimate and measure a given object using multiple copies of a non-standard unit and using a single copy of the same unit many times, and explain the results.

M04.04: Estimate and measure, using non-standard units, a given length that is not a straight line.

M05: Students will be expected to demonstrate that changing the position of an object does not alter the measurements of its attributes.

Performance Indicator: all indicators

G01: Students will be expected to sort 2-D shapes and 3-D objects using two attributes and explain the sorting rule.

Performance Indicators: all indicators

G02: Students will be expected to recognize, name, describe, compare, and build 3-D objects, including cubes and other prisms, spheres, cones, cylinders, and pyramids.

Performance Indicators

G02.01: Sort a given set of 3-D objects and explain the sorting rule.

G02.02: Identify common attributes of cubes and other prisms, spheres, cones, cylinders, and pyramids from given sets of the same 3-D objects.

G02.03: Identify and describe given 3-D objects with different dimensions.

G02.04: Identify and describe given 3-D objects with different positions.

G02.05 : Create and describe a representation of a given 3-D object using materials such as modelling clay.

G02.06: Identify and name examples of cubes and other prisms, spheres, cones, cylinders, and pyramids found in the environment.

G03: Students will be expected to recognize, name, describe, compare and build 2-D shapes, including triangles, squares, rectangles, and circles.

Performance Indicators

G03.01: Sort a given set of 2-D shapes and explain the sorting rule.

G03.02: Identify common attributes of triangles, squares, rectangles, and circles from given sets of the same type of 2-D shapes.

G03.03: Identify given 2-D shapes with different dimensions.

G03.04: Identify given 2-D shapes with different positions.

G03.05: Identify and name examples of triangles, squares, rectangles, and circles found in the environment.

G03.06: Create a model to represent a given 2-D shape.

G03.07: Create a pictorial representation of a given 2-D shape.

G04: Students will be expected to identify 2-D shapes as part of 3-D objects in the environment.

Performance Indicators: all indicators

SP01: Students will be expected to gather and record data about self and others to answer questions.

Performance Indicators: all indicators

SP02: Students will be expected to construct and interpret concrete graphs and pictographs to solve problems.

Performance Indicators: all indicators