Department of Education and Early Childhood Development

Foundations of Mathematics Pathway

Number, Relations and Functions 10, Foundations of Mathematics 110, and Foundations of Mathematics 120

2020-2021 Prioritized Curriculum

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Acknowledgements

The Department of Education and Early Childhood Development of New Brunswick (EECD) gratefully acknowledges the contributions of the following educators toward the development of the Foundations of Mathematics 11 & 12 Prioritized Curriculum:

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- Jennifer Mabey, ASD-South
- Rob McNeelands, ASD-West
- Barbara Mutch, ASD-North
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- Shawna Woods-Roy, ASD-East
- Ryan Jones, EECD (Learning and Achievement)
- Yvan Pelletier, EECD (Assessment)

Background and Rationale

Due to the reduced learning time presented by school closures for COVID-19 and the uncertainty of what the 2020-2021 year will bring, the Department of Education and Early Childhood Development (EECD) is releasing a prioritized curriculum for select high school courses. This document provides a list of required outcomes that will frame the learning expectations for students and offer time for effective teaching practices.

A team of New Brunswick high school educators and Learning Specialists from EECD worked together to identify and curate a list of **Required Outcomes** for the 2020-2021 school year. Any outcomes that were not identified as being *required* were categorised as "**Remaining Outcomes**" and can be set aside for future learning or taught if time permits.

The *Required Outcomes* outlined in this document have been identified as the best representation of instructional outcomes to engage learners and contribute to student readiness for post-secondary mathematics and science studies and/or future life pursuits.

Identification of the *Required Outcomes* is but one of the necessary elements which will support learners in the province. Teachers will also consider how to engage students in deep and meaningful ways within the framework of the new learning environments (online, blended, and/or face-to-face).

Number, Relations and Functions 10

The curriculum document can be accessed [here](#) / Le programme d'études est accessible [ici](#).

Required Outcomes	Remaining Outcomes
AN1: Demonstrate an understanding of factors of whole numbers by determining the prime factors and greatest common factor.	**AN1:** Least common multiple, square root, cube root.
AN4: Demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials and trinomials), pictorially and symbolically.	**AN2:** Demonstrate an understanding of irrational numbers by representing, identifying and simplifying irrational numbers, ordering irrational numbers.
AN5: Demonstrate an understanding of common factors, pictorially and symbolically.	**AN3:** Demonstrate an understanding of powers with integral and rational exponents.
RF3: Demonstrate an understanding of slope with respect to rise and run, line segments and lines, rate of change, parallel lines, perpendicular lines.	**AN5:** Trinomial factoring.
Note: RF4 should be embedded with other RF outcomes and assessed in context.	**RF1:** Interpret and explain the relationships among data, graphs and situations.
RF4: Describe and represent linear relations, using words, ordered pairs, tables of values, graphs, equations.	**RF2:** Demonstrate an understanding of relations and functions.
RF5: Determine the characteristics of the graphs of linear relations, including the intercepts, slope, domain, range.	**RF8:** Solve problems that involve the distance between two points and the midpoint of a line segment.
RF6: Relate linear relations expressed in: slope-intercept form $y = mx + b$, general form $Ax + By + C = 0$.	**RF10:** Solve problems that involve systems of linear equations in two variables, graphically and algebraically.
RF7: Determine the equation of a linear relation, given: a graph, a point and the slope, two points, a point and the equation of a parallel or perpendicular line, a scatter plot.	
Note: RF9 should be embedded with other RF outcomes and assessed in context.	
RF9: Represent a linear function, using function notation.	

Foundations of Mathematics 110

The curriculum document can be accessed [here](#) / Le programme d'études est accessible [ici](#).

Required Outcomes	Remaining Outcomes
Note: LR1 & LR2: reasoning should be integrated as a strategy to solve problems in context with other outcomes. **LR1:** Analyze and prove conjectures using logical reasoning, to solve problems. **LR2:** Analyze puzzles and games that involve numerical reasoning, using problem-solving strategies. **G2:** Solve problems that involve the properties of angles and triangles. **G3:** Solve problems that involve the cosine law and the sine law. **RF1:** Model and solve problems that involve systems of linear inequalities in two variables. **RF2:** Demonstrate an understanding of the characteristics of quadratic functions, including vertex, intercepts, domain and range, axis of symmetry. **N1:** Analyze costs and benefits of renting, leasing and buying.	**G1:** Derive proofs that involve the properties of angles and triangles. **G3:** Including the ambiguous case. **N2:** Analyze an investment portfolio in terms of interest rate, rate of return, total return. **N3:** Solve problems that involve personal budgets (optional).

Foundations of Mathematics 120

The curriculum document can be accessed [here](#).

Required Outcomes	Remaining Outcomes
S1: Demonstrate an understanding of normal distribution, including standard deviation, z-scores. **S2:** Interpret statistical data, using confidence intervals, confidence levels, margin of error. **P2:** Solve problems that involve the probability of mutually exclusive and non–mutually exclusive events. **P3:** Solve problems that involve the probability of two events. **P4:** Solve problems that involve the fundamental counting principle. **Note:** RF1-RF3: focus on pattern recognition (defining characteristics) and application to solve problems. **RF1:** Represent data, using polynomial functions (of degree ≤ 3), to solve problems. **RF2:** Represent data, using exponential and logarithmic functions, to solve problems. **RF3:** Represent data, using sinusoidal functions, to solve problems.	**LR1:** Analyze puzzles and games that involve numerical and logical reasoning, using problem-solving strategies. **LR2:** Solve problems that involve the application of set theory. **LR3:** Solve problems that involve conditional statements. **P1:** Interpret and assess the validity of odds and probability statements. **P5:** Solve problems that involve permutations. **P6:** Solve problems that involve combinations. **P7:** Expand powers of a binomial in a variety of ways, including using the binomial theorem (restricted to exponents that are natural numbers).