Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Number)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Develop number sense.			
Specific Curriculum Outcomes N1. Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9 or 10, and why a number cannot be divided by 0.	**Number Unit 1: Number Relationships** 1: Developing Divisibility Rules for 2, 4, 5, 8, and 10 2: Developing Divisibility Rules for 3, 6, and 9 3. Relating Factors, Multiples, and Divisibility	Unit 2 Questions 1-19, 31 (pp. 11-16, 20)	**Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Investigating number and arithmetic properties** - Examines and classifies whole numbers based on their properties (e.g., even/odd; prime; composite; divisible by 2, 5, 10). - Uses reasoning and knowledge of factors to examine divisibility of numbers (by 4, 8, 3, 6, and 9).
N2. Demonstrate an understanding of the addition, subtraction, multiplication and division of decimals (for more than 1-digit divisors or 2-digit multipliers, the use of technology is expected) to solve problems.	**Number Unit 4: Operations with Decimals and Percents** 17: Adding and Subtracting Decimals 18: Multiplying Decimals 19: Dividing Decimals 20: Applying the Order of Operations with Decimals 23: Calculating Sales Taxes and Tips 24: Calculating Sales Taxes and Discounts	Unit 3 Questions 1-13 (pp. 21-26) Unit 12 Questions 15, 17, 18 (pp. 114-115)	**Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Developing conceptual meaning of operations** - Demonstrates an understanding of decimal number computation through modelling and flexible strategies. **Developing fluency of operations** - Solves decimal number computation using efficient strategies. **Investigating number and arithmetic properties** - Evaluates equations with brackets using order of operations.

N3. Solve problems involving percents from 1% to 100%.	**Number Unit 3: Fractions, Decimals, and Percents** 16: Relating Fractions, Decimals, and Percents **Number Unit 4: Operations with Decimals and Percents** 21: Working with Percents 22: Using Mental Math to Calculate Percents 23: Calculating Sales Taxes and Tips 24: Calculating Sales Taxes and Discounts	Unit 8 Questions 16-22 (pp. 73-75) Unit 11 Questions 7-16 (pp. 99-102) Unit 12 Question 15 (pp. 114)	**Big Idea: Numbers are related in many ways.** **Using ratios, rates, proportions, and percents creates a relationship between quantities** - Understands and applies the concept of percentage as a rate per 100 (e.g., calculating sales tax, tips, or discounts). **Big Idea: Numbers are related in many ways.** **Decomposing and composing numbers to investigate equivalencies** - Models and explains the relationships among fractions, decimals, and percents. - Translates flexibly between representations.
N4. Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially and symbolically.	**Number Unit 2: Fluency with Integers** 4: Representing Integers 5: Adding Integers with Models 6: Adding Integers 7: Subtracting Integers with Models 8: Subtracting Integers 9: Adding and Subtracting Integers 10: Solving Problems Involving Integers	Unit 12 Questions 1-7, 14-17, 21 (pp. 109-116)	**Big Idea: The set of real numbers is infinite.** **Extending whole number understanding to the set of real numbers** - Understands that a positive integer and its negative opposite are the same distance from zero (e.g., both 5 and –5 are five units from zero on a number line). **Big Idea: Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)** - Compares, orders, and locates integers. **Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Developing conceptual meaning of operations** - Models and demonstrates an understanding of integer addition and subtraction. **Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Developing fluency of operations** - Estimates and solves integer addition and subtraction using efficient strategies.

N5. Demonstrate an understanding of multiplication and division of integers, concretely, pictorially and symbolically.	**Number Unit 2: Fluency with Integers** 11: Multiplying Integers 12: Dividing Integers 13: Order of Operations with Integers	Unit 12 Questions 8-13, 20, 21 (pp. 112-113, 115-116)	**Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Developing conceptual meaning of operations** - Models and demonstrates an understanding of integer multiplication and division. **Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Investigating Number and Arithmetic Properties** - Evaluates equations with brackets using order of operations.
N6. Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: • benchmarks • place value • equivalent fractions and/or decimals.	**Number Unit 3: Fractions, Decimals, and Percents** 14: Comparing and Ordering Fractions and Decimals (to hundredths) 15: Comparing and Ordering Fractions and Decimals (to thousandths)	Unit 7 Questions 7-10, 18 (pp. 62-63, 67)	**Big Idea: Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)** - Compares, orders, and locates positive rational numbers using flexible strategies.

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Patterns and Relations: Patterns)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Use patterns to describe the world and to solve problems.			
PR1. Create a table of values from a linear relation, graph the table of values, and analyse the graph to draw conclusions and solve problems.	**Patterns and Relations Unit 1: Linear Patterns and Equations** 1: Representing Patterns 2: Comparing Linear Patterns 3: Working with Linear Patterns 11: Writing and Solving Patterns Involving Linear Relations	Unit 1 Questions 1-6, 8, 15 (pp. 2-10) Unit 13 Question 16 (p. 123)	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically**. **Representing patterns, relations, and functions** - Represents a mathematical context or problem with expressions and equations using variables to represent unknowns. - Generates ordered pairs for a linear relation and plots the coordinates on a graph. (Limited to integer values on four quadrants.) - Matches different representations of the same linear relation (e.g., graph, equation, table of values) - Differentiates between linear and non-linear relations by their graphical representation. - Models and solves problems with integers using linear equations in different forms (e.g., $ax = b$; $ax + b = c$; $a(x + b) = c$). **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Using variables, algebraic expressions, and equations to represent mathematical relations** - Evaluates algebraic expressions, including formulas, given specific values for the variables (e.g., evaluate $3r - 12$, when $r = 3$; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm).

			- Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Generalizing and analyzing patterns, relations, and functions** - Predicts the value of a given element in a numeric or shape pattern using pattern rules. - Investigates, analyzes, and compares equations and graphs of linear relations to make generalizations and predictions

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Patterns and Relations: Variables and Equations)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Represent algebraic expressions in multiple ways.			
Specific Curriculum Outcomes PR2. Demonstrate an understanding of the preservation of equality by: • modelling preservation of equality, concretely, pictorially and symbolically • applying preservation of equality to solve equations.	**Patterns and Relations Unit 1: Linear Patterns and Equations** 4: Modelling and Solving One-Step Equations 6: Solving One-Step Equations (with Relational Rods) 7: Solving Equations with Multiple Terms (with Relational Rods) 8: Modelling and Solving One-Step Linear Equations 9: Modelling and Solving Multi-Step Linear Equations 10: Writing and Solving Equations to Solve Problems 11: Writing and Solving Problems Involving Linear Relations	Unit 13 Questions 12-15 (pp. 120-122)	**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Understanding equality and inequality, building on generalized properties of numbers and operations.** - Investigates and models the meaning of preservation of equality of single variable equations (e.g., $3x = 12$). - Applies arithmetic properties (e.g., distributive, commutative, identities) to identify, transform, and generate equivalent numeric expressions (e.g., $3(2 + 5) = (2 + 5) + (2 + 5) + (2 + 5)$). - Models the preservation of equality to solve equations involving integer coefficients (e.g., $–4m + 16 = –12$). **Using variables, algebraic expressions, and equations to represent mathematical relations** - Evaluates algebraic expressions, including formulas, given specific values for the variables (e.g., evaluate $3r – 12$, when $r = 3$; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm). - Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as $3n + 2$).

			Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically. **Representing patterns, relations, and functions** - Represents a mathematical context or problem with expressions and equations using variables to represent unknowns. - Models and solves problems with integers using linear equations in different forms (e.g., $ax = b$; $ax + b = c$; $a(x + b) = c$).
PR3. Explain the difference between an expression and an equation.	**Patterns and Relations Unit 1: Linear Patterns and Equations** 5: Evaluating Expressions and Writing Equations	Unit 13 Question 11 (p. 120)	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing patterns, relations, and functions** - Matches different representations of the same linear relation (e.g., graph, equation, table of values) **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Using variables, algebraic expressions, and equations to represent mathematical relations** - Evaluates algebraic expressions, including formulas, given specific values for the variables (e.g., evaluate $3r - 12$, when $r = 3$; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm). - Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as $3n + 2$).
PR4. Evaluate an expression, given the value of the variable(s).	**Patterns and Relations Unit 1: Linear Patterns and Equations** 4: Writing and Evaluating Algebraic Expressions 5: Evaluating Expressions and Writing Equations	Unit 1 Questions 1-3, 9-15 (pp. 2-10) Unit 13 Questions 1-4, 8, 10 (pp. 117-120)	**Big Idea**: **Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing patterns, relations, and functions** - Represents a mathematical context or problem with expressions and equations using variables to represent unknowns. - Matches different representations of the same linear relation (e.g., graph, equation, table of values)

			Big Idea: Patterns and relations can be represented with symbols, equations, and expressions. **Using variables, algebraic expressions, and equations to represent mathematical relations** - Evaluates algebraic expressions, including formulas, given specific values for the variables (e.g., evaluate $3r - 12$, when $r = 3$; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm). - Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as $3n + 2$).
PR5. Model and solve problems that can be represented by one-step linear equations of the form $x + a = b$, concretely, pictorially and symbolically, where a and b are integers.	**Patterns and Relations Unit 1: Linear Patterns and Equations** 6: Solving One-Step Equations (with Relational Rods) 8: Modelling and Solving One-Step Linear Equations 10: Writing and Solving Equations to Solve Problems	Unit 13 Questions 12-14, 19 (pp. 120-124)	**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Understanding equality and inequality, building on generalized properties of numbers and operations.** - Investigates and models the meaning of preservation of equality of single variable equations (e.g., $3x = 12$). - Applies arithmetic properties (e.g., distributive, commutative, identities) to identify, transform, and generate equivalent numeric expressions (e.g., $3(2 + 5) = (2 + 5) + (2 + 5) + (2 + 5)$). - Models the preservation of equality to solve equations involving integer coefficients (e.g., $-4m + 16 = -12$). **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Using variables, algebraic expressions, and equations to represent mathematical relations** - Evaluates algebraic expressions, including formulas, given specific values for the variables (e.g., evaluate $3r - 12$, when $r = 3$; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm).
PR6. Model and solve problems that can be represented by linear equations of the form: • $ax + b = c$ • $ax = b$ • $\frac{x}{a} = b$, a ≠ 0 concretely, pictorially and symbolically, where a, b and c are whole numbers.	**Patterns and Relations Unit 1: Linear Patterns and Equations** 7: Solving Equations with Multiple Terms (with Relational Rods) 9: Modelling and Solving Multi-Step Linear Equations	Unit 13 Questions 12-19, 23 (pp. 120-124, 127)	**Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Understanding equality and inequality, building on generalized properties of numbers and operations.** - Investigates and models the meaning of preservation of equality of single variable equations (e.g., $3x = 12$). - Investigates the process of decomposing arithmetic equations and comparing them with the sequence of operations used to

	10: Writing and Solving Equations to Solve Problems 11: Writing and Solving Problems Involving Linear Relations		solve algebraic equations (e.g., $4 \times 5 + 6 = 26$ compared to solving $4x + 6 = 26$). - Models the preservation of equality to solve equations involving integer coefficients (e.g., $-4m + 16 = -12$). **Using variables, algebraic expressions, and equations to represent mathematical relations** - Identifies and describes the meaning of parts of an equation using mathematical terms (e.g., *sum*, *coefficient*, *factor*, *variable*, *constant*). - Evaluates algebraic expressions, including formulas, given specific values for the variables (e.g., evaluate $3r = 12$, when $r = 3$; $\frac{1}{2}bh$, when base is 12 cm and height is 5 cm). - Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as $3n + 2$). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing patterns, relations, and functions** - Represents a mathematical context or problem with expressions and equations using variables to represent unknowns. - Models and solves problems with integers using linear equations in different forms (e.g., $ax = b$; $ax + b = c$; $a(x + b) = c$).

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Shape and Space: Measurement)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Use direct and indirect measurement to solve problems.			
Specific Curriculum Outcomes SS1. Demonstrate an understanding of circles by: • describing the relationships among radius, diameter and circumference of circles; • relating circumference to pi; • determining the sum of the central angles; • constructing circles with a given radius or diameter; • solving problems involving the radii, diameters and circumferences of circles.	**Shape and Space Unit 1: 2-D Shapes** 1: Exploring Circles 2: Calculating Circumference 3: Exploring Central Angles	Unit 4 Questions 1-7, 9 (pp. 29-32)	**Big Idea: Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared.** **Understanding attributes that can be measured, compared, or ordered** - Understands circumference as the measure around a circle. **Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and using units to estimate, measure, construct, and make comparisons** - Constructs circles based on radius and diameter measures. - Relates angle measures to arcs and sectors of a circle. **Understanding relationships among measured units** - Develops and generalizes strategies to compute the circumference and area of circles.

SS2. Develop and apply a formula for determining the area of: • triangles; • parallelograms; • circles.	**Shape and Space Unit 1: 2-D Shapes and 3-D Solids** 4: Determining the Area of Triangles 5: Determining the Area of Parallelograms 6: Estimating and Determining the Area of a Circle	Unit 4 Questions 8-12, 14, 15, 18 (pp. 31-37)	**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Understanding relationships among measured units** - Develops and generalizes strategies to compute the circumference and area of circles. **Big Idea: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes.** **Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition** - Constructs and decomposes polygons into shapes with known areas (e.g., triangles, rectangles). **Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Understanding relationships among measured units** - Develops and generalizes strategies to compute area of triangles, quadrilaterals, and other polygons (e.g., decomposing a parallelogram and rearranging to form a rectangle).

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Shape and Space: Transformations)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Describe and analyze position and motion of objects and shapes.			
Specific Curriculum Outcomes SS3. Identify and plot points in the four quadrants of a Cartesian plane, using integral ordered pairs.	**Shape and Space Unit 2: The Cartesian Plane** 7: Plotting and Reading Coordinates 8: Exploring the Cartesian Plane	Unit 6 Questions 1-4 (pp. 47-49)	**Big Idea: Objects can be located in space and viewed from multiple perspectives.** **Locating and mapping objects in space** - Plots and locates points on a Cartesian plane, and relates the location to the two axes. (Limited to the first quadrant.) - Identifies, locates, and plots points, polygon vertices, and lines on a Cartesian plane in all four quadrants. (Limited to integers.)

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Statistics and Probability: Data Analysis)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Collect, display and analyze data to solve problems.			
Specific Curriculum Outcomes SP1. Demonstrate an understanding of central tendency and range by: • determining the measures of central tendency (mean, median, mode) and range • determining the most appropriate measures of central tendency to report findings.	**Statistics and Probability** **Unit 1: Data Management** 1: Exploring Measures of Data 2: Determining Mean and Mode 3: Determining Median and Range 4: Comparing Measures of Central Tendency	Unit 10 Questions 7, 8, 10, 11, 13, 16 (pp. 89-95)	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Creating graphical displays of collected data** - Creates charts and graphs with appropriate titles and labels to represent data collected. - Represents data graphically using many -to-one correspondence with appropriate scales and intervals. **Reading and interpreting data displays and analyzing variability** - Reads and interprets data displays using many-to-one correspondence. - Visualizes and determines the median value as a middle measure representing a whole data set. - Visualizes and determines the mean of a data set. - Understands and describes the differences between the central tendency values (i.e., mode, median, mean) and explores which measure is most appropriate for the data collected. **Using the language and tools of chance to describe and predict events** - Describes data using frequency counts (e.g., 5 people chose peppermint) and modal value (e.g., dogs are the most common pets).

SP2. Determine the effect on the mean, median and mode when an outlier is included in a data set.	**Statistics and Probability** **Unit 1: Data Management** 5: Exploring the Effect of Outliers on Mean, Median, and Mode	Unit 10 Questions 7, 9, 10, 12 (pp. 89-92)	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Reading and interpreting data displays and analyzing variability** - Explains the effect of removing or changing values (including outliers) on measures of central tendency.

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 7 (Statistics and Probability: Chance and Uncertainty)

Outcomes	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.			
Specific Curriculum Outcomes SP3. Express probabilities as ratios, fractions and percents.	**Statistics and Probability** **Unit 2: Probability** 6: Exploring Theoretical Probability 7: Writing Experimental Probabilities 9: Exploring Theoretical and Experimental Probability	Unit 9 Questions 3, 4, 5, 6, 9 (pp. 79-81, 84)	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Using the language and tools of chance to describe and predict events** - Extends understanding of the probability continuum by expressing and comparing probabilities using decimals (between 0 and 1), ratios, fractions, and percents. - Determines the relative frequency of each outcome in an experiment involving two independent events by performing multiple trials. **Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Drawing Conclusions by Making Inferences and Justifying Decisions Based on Data Collected** - Compares short- and long-run experimental probabilities of events to their theoretical expectations, and explains the differences.

SP4. Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events.	**Statistics and Probability** **Unit 2: Probability** 8: Identifying and Representing Sample Spaces 9: Exploring Theoretical and Experimental Probability	Unit 9 Questions 2-4, 5a, 6a (pp. 78-81)	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphic displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Using the language and tools of chance to describe and predict events** - Determines and represents theoretical probability of outcomes for two independent events (e.g., rolling a die and tossing a coin) using graphical tools (e.g., tree diagram, lists, matrix).