



Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 8 (Number)

Outcomes	Grade 8 Mathology.ca	Mathology Practice Workbook 8	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Develop number sense.			
N1. Demonstrate an understanding of percents greater than or equal to 0%.	Number Unit 1: Proportions, Ratios, Rates, and Percent 9: Working with Whole Number Percents 10: Working with Fractional Percents 11: Solving Percent Problems 12: Solving Problems Involving Coupons and Discounts	Unit 6 Questions 27-33 (pp. 62-64) Unit 10 Questions 3-7, 12 (pp. 98-100, 102) Unit 11 Question 21 (p. 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 discount). - Understands the meaning of percents greater than 100% and less than 1%.
N2. Demonstrate an understanding of ratio and rate.	Number Unit 1: Proportions, Ratios, Rates, and Percent 1: Introducing Ratios 2: Exploring Ratios 3: Relating Ratio and Proportion 4: Whole-Number Rates 5: Unit Rates 6: Solving Rate Problems	Unit 6 Questions 1, 2 (pp. 52-53) Unit 10 Questions 11, 14 (pp. 101, 104)	Big Idea: Numbers are related in many ways. Using ratios, rates, proportions, and percents creates a relationship between quantities - Demonstrates multiplicative reasoning by applying unit rates in whole number contexts (e.g., If she earns \$12 per hour, how much will she earn for 5 h of work?). - Understands the concept of ratio as a relationship between two quantities (e.g., 3 wins to 2 losses). - Understands and applies the concept of unit rates (e.g., If 3 kg is \$5, how much is 1 kg or how many kg for \$1?). - Solves for missing values and determines equivalent ratios and rates using flexible strategies (e.g., tables, graphing, unit rates, $\frac{a}{b} = \frac{c}{d}$ relationship).

			<p>Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically. Generalizing and analyzing patterns, relations, and functions</p> <ul style="list-style-type: none"> - Analyzes the relationship between values of two linear number patterns (e.g., P1 is 2, 4, 6, 8, ...; and P2 is 3, 6, 9, 12, ...; as P1 goes up by 1, P2 goes up by 3).
N3. Solve problems that involve rates, ratios and proportional reasoning.	<p>Number Unit 1: Proportions, Ratios, Rates, and Percent</p> <p>1: Introducing Ratios 2: Exploring Ratios 3: Relating Ratio and Proportion 4: Whole-Number Rates 5: Unit Rates 6: Solving Rate Problems 7: Solving Problems Involving Proportions, Ratios, and Rate 8: Calculating the Best Buy</p>	<p>Unit 6 Question 3-8, 10-13, 16-26, 34 (pp. 53-62, 65)</p> <p>Unit 10 Questions 11, 14 (pp. 101, 104)</p>	<p>Big Idea: Numbers are related in many ways. Using ratios, rates, proportions, and percents creates a relationship between quantities</p> <ul style="list-style-type: none"> - Demonstrates multiplicative reasoning by applying unit rates in whole number contexts. (e.g., If she earns \$12 per hour, how much will she earn for 5 h of work?) - Understands the concept of ratio as a relationship between two quantities (e.g., 3 wins to 2 losses). - Understands and applies the concept of unit rates (e.g., If 3 kg is \$5, how much is 1 kg or how many kg for \$1?). - Solves for missing values and determines equivalent ratios and rates using flexible strategies (e.g., tables, graphing, unit rates, $\frac{a}{b} = \frac{c}{d}$ relationship). <p>Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically. Generalizing and analyzing patterns, relations, and functions</p> <ul style="list-style-type: none"> - Analyzes the relationship between values of two linear number patterns (e.g., P1 is 2, 4, 6, 8, ...; and P2 is 3, 6, 9, 12, ...; as P1 goes up by 1, P2 goes up by 3).
N4. Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially and symbolically (limited to positive sums and differences)	<p>Number Unit 2: Operations with Fractions and Mixed Numbers</p> <p>13: Adding and Subtracting Fractions with Like Denominators 14: Adding and Subtracting Fractions 15: Adding Fractions and Mixed Numbers</p>	<p>Unit 7 Questions 1-5, 17, 19 (pp. 66-68, 72-73)</p>	<p>Big Idea: Quantities and numbers can be grouped or partitioned into equal-sized units. Partitioning quantities to form fractions</p> <ul style="list-style-type: none"> - Decomposes fractions into sums using like denominators (e.g., $\frac{3}{5} = \frac{2}{5} + \frac{1}{5}$). - Understands the fraction $\frac{a}{b}$ as $a \div b$.

	16: Subtracting Fractions and Mixed Numbers 17: Adding and Subtracting Fractions and Mixed Numbers 18: Repeated Addition with Unit Fractions		<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Developing fluency of operations</p> <ul style="list-style-type: none"> - Solves fraction addition and subtraction using efficient strategies. <p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Developing Conceptual Meaning of Operations</p> <ul style="list-style-type: none"> - Models and symbolizes fraction addition and subtraction with like denominators (e.g., $\frac{2}{5} + \frac{1}{5}$) and where one denominator is a multiple of the other (e.g., $\frac{2}{5} + \frac{3}{10}$). - Models and demonstrates an understanding of fraction addition and subtraction.
N5. Demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially and symbolically.	<p>Number Unit 2: Operations with Fractions and Mixed Numbers</p> 18: Repeated Addition with Unit Fractions 19: Multiplication and Division with Unit Fractions 20: Multiplying and Dividing Whole Numbers by Proper Fractions 21: Multiplying Fractions 22: Multiplying Fractions and Mixed Numbers 23: Dividing Fractions 24: Dividing Fractions and Mixed Numbers 25: Applying the Order of Operations with Fractions and Mixed Numbers	Unit 7 Questions 6-13, 15, 17, 18, 19 (pp. 68-73)	<p>Big Idea: Quantities and numbers can be grouped or partitioned into equal-sized units.</p> <p>Partitioning quantities to form fractions</p> <ul style="list-style-type: none"> - Understands the meaning of an $\frac{a}{b}$ fraction as a multiple of the unit fraction $\frac{1}{b}$ (e.g., $\frac{3}{5} = 3 \times \frac{1}{5}$). - Understands the fraction $\frac{a}{b}$ as $a \div b$. - Continues to extend fraction understanding to multiple contexts (e.g., sharing, division, ratios). <p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Developing Conceptual Meaning of Operations</p> <ul style="list-style-type: none"> - Explores multiplication as scaling and estimates the resulting product when scaling a given number by a number less than, equal to, or greater than 1 (e.g., $\frac{1}{2} \times 12$; 5.2×12; 0.3×12). - Models and demonstrates an understanding of multiplication and division of fractions.



Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 8 (Patterns and Relations: Patterns)

Outcomes	Grade 8 Mathology.ca	Mathology Practice Workbook 8	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Use patterns to describe the world and to solve problems.			
Specific Curriculum Outcomes PR1. Graph and analyze two-variable linear relations.	Patterns and Relations Unit 1: Linear Relations and Equations 1: Exploring Patterns 2: Representing Linear Relations 3: Determining Term Numbers and Term Values 4: Determining if a Relationship is Linear	Unit 1 Questions 1-8, 10, 11, 12, 17 (pp. 2-9) Unit 6 Question 14, 15, 17 (pp. 57-59)	Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically. Representing patterns, relations, and functions <ul style="list-style-type: none"> - 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. Big Idea: Patterns and relations can be represented with symbols, equations, and expressions. Using variables, algebraic expressions, and equations to represent mathematical relations

			<ul style="list-style-type: none"> - Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as $3n + 2$). <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Understanding equality and inequality, building on generalized properties of numbers and operations</p> <ul style="list-style-type: none"> - Models the preservation of equality to solve equations involving integer coefficients (e.g., $-4m + 16 = -12$).
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Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 8 (Patterns and Relations: Variables and Equations)

Outcomes	Grade 8 Mathology.ca	Mathology Practice Workbook 8	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Represent algebraic expressions in multiple ways.			
Specific Curriculum Outcomes PR2. Model and solve problems using linear equations of the form: <ul style="list-style-type: none"> • $ax = b$ • $\frac{x}{a} = b, a \neq 0$ • $ax + b = c$ • $\frac{x}{a} + b = c, a \neq 0$ • $a(x + b) = c$ concretely, pictorially and symbolically, where a, b and c are integers.	Patterns and Relations Unit 1: Linear Relations and Equations 5: Solving Linear Equations Using Models 6: Solving Linear Equations Algebraically 7: Solving Equations Involving the Distributive Property 8: Solving Problems Using Linear Equations	Unit 11 Question 20 (p. 113) Unit 12 Questions 8-15, 20 (pp. 119-123, 126)	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. <ul style="list-style-type: none"> - Investigates and models the meaning of preservation of equality of single variable equations (e.g., $3x = 12$). - Applies arithmetic properties to transform, simplify, and identify equivalent linear expressions (e.g., $x(4 + 5) = 4x + 5x = 9x$). - Models the preservation of equality to solve equations involving integer coefficients (e.g., $-4m + 16 = -12$). - Applies the distributive property to expressions and identifies common factors to create equivalent expressions (e.g., $4a + 12 = 4(a + 3)$). Using variables, algebraic expressions, and equations to represent mathematical relations. <ul style="list-style-type: none"> - 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 $3n + 2$).

Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 8 (Shape and Space: Measurement)

Outcomes	Grade 8 Mathology.ca	Mathology Practice Workbook 8	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Use direct and indirect measurement to solve problems.			
SS1. Draw and construct nets for 3-D objects.	Shape and Space Unit 1: 3-D Solids 1: Exploring Nets of Prisms 2: Exploring Nets of Cylinders	Unit 4 Questions 6, 15 (pp. 35, 41)	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 - Identifies and constructs nets for 3-D objects made from polygons (e.g. cylinder, hexagonal prism)
SS2. Determine the surface area of: • right rectangular prisms; • right triangular prisms; • right cylinders to solve problems.	Shape and Space Unit 1: 3-D Solids 3: Determining the Surface Area of Rectangular Prisms 4: Determining the Surface Area of Triangular Prisms 5: Determining the Surface Area of Cylinders 8: Using Code to Explore Volume and Surface Area	Unit 4 Questions 7, 8, 10, 12 (pp. 36-38)	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 and formulas to compute volume and surface area of regular solids (e.g., cones, cylinders, and spheres). 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, and ordered - Understands surface area as an attribute of 3-D objects that can be measured and compared.

SS3. Develop and apply formulas for determining the volume of right prisms and right cylinders.	Shape and Space Unit 1: 3-D Solids 6: Determining the Volume of Prisms 7: Determining the Volume of Cylinders 8: Using Code to Explore Volume and Surface Area	Unit 4 Questions 9, 10, 11, 15 (pp. 36-41)	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 and formulas to compute volume and surface area of regular solids (e.g., cones, cylinders, and spheres).
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Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 8 (Statistics and Probability: Data Analysis)

Outcomes	Grade 8 Mathology.ca	Mathology Practice Workbook 8	Pearson Canada Grades 4–9 Mathematics Learning Progression
General Curriculum Outcome Collect, display and analyze data to solve problems.			
Specific Curriculum Outcomes SP1. Critique ways in which data is presented.	Statistics and Probability Unit 1: Data Management 1: Exploring Circle Graphs 2: Presenting Data Graphically 3: Analyzing and Critiquing Given Data	Unit 9 Questions 7, 8, 9, 13, 14, 16, 17 (pp. 89-90, 93-96)	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 - Chooses and justifies appropriate visual representations for displaying discrete (e.g., bar graphs) and continuous (e.g., line graph) data. Reading and interpreting data displays and analyzing variability - Critiques the ways in which data are presented in graphs and tables (e.g., misleading graphs, changing scale). Drawing conclusions by making inferences and justifying decisions based on data collected - Draws conclusions based on data presented.



Correlation of the Prince Edward Island Mathematics Curriculum with Mathology Grade 8 (Statistics and Probability: Chance and Uncertainty)

Outcomes	Grade 8 Mathology.ca	Mathology Practice Workbook 8	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 SP2. Solve problems involving the probability of independent events.	Statistics and probability Unit 2: Probability 4: Determining the Probability of Events 5: Comparing Theoretical and Experimental Probability of Two Independent Events 6: Determining the Probability of Three Independent Events	Unit 8 Questions 1-17 (pp. 76-84)	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 - Generalizes the multiplication rule of probability for independent events (e.g., probability of tossing two heads is $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$).