Correlation of the British Columbia Mathematics Curriculum with Mathology Grade 7

Learning Standards	Grade 7 Mathology.ca	Pearson Canada Grades 4–9 Mathematics Learning Progression
Content - Elaborations		
Multiplication and division facts to 100 (extending computational fluency): • When multiplying 214 by 5, we can multiply by 10, then divide by 2 to get 1070.	**Number Unit 1: Number Relationships** 4: Applying Multiplication and Division Facts to 100	**Big Idea: Quantities and numbers can be operated on to determine how many and how much.** **Developing Fluency of Operations** - Solves whole number computation using efficient strategies (e.g., mental computation, algorithms, calculating cost of transactions and change owing, saving money to make a purchase)
Operations with integers (addition, subtraction, multiplication, division, and order of operations): • addition, subtraction, multiplication, division, and order of operations • concretely, pictorially, symbolically • order of operations includes the use of brackets, excludes exponents • using two-sided counters • 9 – (–4) = 13 because –4 is 13 away from +9 • extending whole-number strategies to decimals	**Number Unit 2: Fluency with Integers** 5: Representing Integers 6: Adding Integers 7: Subtracting Integers 8: Solving Problems Involving Integers 9: Multiplying Integers 10: Dividing Integers 11: Applying the Order of Operations with Integers	**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. - Models and demonstrates an understanding of integer multiplication and division. **Investigating Number and Arithmetic Properties** - Evaluates equations with brackets using order of operations.

Operations with decimals (addition, subtraction, multiplication, division, and order of operations): • includes the use of brackets, but excludes exponents	**Number Unit 4: Operations with Fractions, Decimals, and Percents** 16: Multiplying Decimals 17: Dividing Decimals 18: Applying the Order of Operations with Decimals	**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.
Relationships between decimals, fractions, ratios, and percents: • conversions, equivalency, and terminating versus repeating decimals, place value, and benchmarks • comparing and ordering decimals and fractions using the number line • ½ = 0.5 = 50% = 50:100 • shoreline cleanup	**Number Unit 3: Fractions, Decimals, and Percents** 12: Converting Between Fractions and Decimals 13: Comparing and Ordering Fractions and Decimals 14: Relating Fractions, Decimals, and Percents	**Big Idea: Numbers are related in many ways.** **Decomposing and composing numbers to investigate equivalencies** - Understands that all fractions are equivalent to either terminating or repeating decimals. - Models and explains the relationship between a fraction and its equivalent decimal form. **Comparing and ordering quantities (multitude or magnitude)** - Compares, orders, and locates positive rational numbers using flexible strategies. **Using ratios, rates, proportions, and percents creates a relationship between quantities** - Understands and applies the concept of percentage as a rate per hundred (e.g., calculating sales tax, tips, or discounts).
Discrete linear relations, using expressions, tables, and graphs: • four quadrants, limited to integral coordinates • 3*n* + 2; values increase by 3 starting from *y*-intercept of 2 • deriving relation from the graph or table of values • Small Number stories: Small Number and the Old Canoe, Small Number Counts to 100	**Patterning Unit 1: Linear Patterns and Equations** 1: Representing Patterns	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing patterns, relations, and functions** - 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** - Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as 3*n* + 2).

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Two-step equations with whole-number coefficients, constants, and solutions:	Patterning Unit 1: Linear Patterns and Equations	Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.
• solving and verifying $3x + 4 = 16$ • modelling the preservation of equality (e.g., using balance, pictorial representation, algebra tiles) • spirit canoe trip pre-planning and calculations • Small Number stories: Small Number and the Big Tree	4: Modelling and Solving One-Step Equations 5: Modelling and Solving Two-Step Equations	**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., $3x = 12$). - Models the preservation of equality to solve equations involving integer coefficients (e.g., $-4m + 16 = -12$).
Circumference and area of circles: • constructing circles given radius, diameter, area, or circumference • finding relationships between radius, diameter, circumference, and area to develop $C = \pi \times d$ formula • applying $A = \pi \times r \times r$ formula to find the area given radius or diameter • drummaking, dreamcatcher making, stories of SpiderWoman (Dene, Cree, Hopi, Tsimshian), basket making, quill box making (Note: Local protocols should be considered when choosing an activity.)	**Measurement Unit 1: 2-D Shapes and 3-D Solids** 1: Exploring Circles 2: Calculating Circumference 5: Estimating and Determining the Area of a Circle	**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. **Understanding relationships among measured units** - Develops and generalizes strategies to compute the circumference and area of circles.

Volume of rectangular prisms and cylinders: • volume = area of base x height • bentwood boxes, wiigwaasabak and mide-wiigwaas (birch bark scrolls) • Exploring Math through Haida Legends: Culturally Responsive Mathematics	**Measurement Unit 1: 2-D Shapes and 3-D Solids** 8: Determining the Volume of Rectangular Prisms and Cylinders	**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 volumes of right rectangular prisms.
Cartesian coordinates and graphing: • origin, four quadrants, integral coordinates, connections to linear relations, transformations • overlaying coordinate plane on medicine wheel, beading on dreamcatcher, overlaying coordinate plane on traditional maps	**Geometry Unit 1: Transformations on a Cartesian Plane** 1: Exploring the Cartesian Plane 2: Translating 2-D Shapes on a Cartesian Plane 3: Reflecting and Rotating 2-D Shapes on a Cartesian Plane	**Big Idea: Objects can be located in space and viewed from multiple perspectives.** **Locating and mapping objects in space** - Identifies, locates, and plots points, polygon vertices, and lines on a Cartesian plane in all four quadrants. (Limited to integers.) - Analyzes and predicts the location of 2-D shapes under transformation on a Cartesian plane. - Analyzes and locates points, lines, and shapes on a Cartesian plane after successive transformations.
Combinations of transformations: • four quadrants, integral coordinates • translation(s), rotation(s), and/or reflection(s) on a single 2-D shape; combination of successive transformations of 2-D shapes; tessellations • First Peoples art, jewelry making, birchbark biting	**Geometry Unit 1: Transformations on a Cartesian Plane** 2: Translating 2-D Shapes on a Cartesian Plane 3: Reflecting and Rotating 2-D Shapes on a Cartesian Plane 4: Combining Transformations 5: Exploring Tessellations	**Big Idea: Objects can be located in space and viewed from multiple perspectives.** **Locating and mapping objects in space** - Analyzes and predicts the location of 2-D shapes under transformation on a Cartesian plane. - Analyzes and locates points, lines, and shapes on a Cartesian plane after successive transformations. **Big Idea: 2-D shapes and 3-D solids can be transformed in many ways and analyzed for change.** **Exploring 2-D Shapes and 3-D Solids by Applying and Visualizing Transformations** - Uses properties of shapes and transformations to design tessellations.

Circle graphs: • constructing, labelling, and interpreting circle graphs • translating percentages displayed in a circle graph into quantities and vice versa • visual representations of tidepools or traditional meals on plates	**Data Management Unit 1: Data Management** 6: Exploring Circle Graphs 7: Constructing Circle Graphs	**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 graphical representations to illustrate parts of a whole (e.g., circle graph) **Drawing conclusions by making inferences and justifying decisions based on data collected** - Draw conclusions based on data presented.
Experimental probability with two independent events • experimental probability, multiple trials (e.g., toss two coins, roll two dice, spin a spinner twice, or a combination thereof) • dice games	**Data Management Unit 2: Probability** 8: Writing Experimental Probabilities	**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 the relative frequency of each outcome in an experiment involving two independent events by performing multiple trials.
Financial literacy – financial percentage • financial percentage calculations • sales tax, tips, discount, sale price	**Number Unit 4: Operations with Fractions, Decimals, and Percents** 19: Working with Percents **Number Unit 5: Financial Literacy** 22: Calculating Sales Taxes and Tips 23: Calculating Sales Taxes and Discounts	**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 hundred (e.g., calculating sales tax, tips, or discounts).