



Correlation of the British Columbia Mathematics Curriculum with Mathology Grade 7

Learning Standards	Grade 7 Mathology.ca	Mathology Practice Workbook 7	Pearson Canada Grades 4–9 Mathematics Learning Progression
Content - Elaborations			
<p>Multiplication and division facts to 100 (extending computational fluency):</p> <ul style="list-style-type: none"> When multiplying 214 by 5, we can multiply by 10, then divide by 2 to get 1070. 	<p>Number Unit 1: Number Relationships</p> <p>4: Applying Multiplication and Division Facts to 100</p>	<p>Unit 2 Questions 1-19 (pp. 11–16)</p>	<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 whole number computation using efficient strategies (e.g., mental computation, algorithms, calculating cost of transactions and change owing, saving money to make a purchase)
<p>Operations with integers (addition, subtraction, multiplication, division, and order of operations):</p> <ul style="list-style-type: none"> 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 	<p>Number Unit 2: Fluency with Integers</p> <p>5: Representing Integers</p> <p>6: Adding Integers</p> <p>7: Subtracting Integers</p> <p>8: Solving Problems Involving Integers</p> <p>9: Multiplying Integers</p> <p>10: Dividing Integers</p> <p>11: Applying the Order of Operations with Integers</p>	<p>Unit 2 Questions 26-29 (p. 19)</p> <p>Unit 12 Questions 1-12, 14-17, 20, 21 (pp. 109–116)</p>	<p>Big Idea: The set of real numbers is infinite.</p> <p>Extending whole number understanding to the set of real numbers</p> <ul style="list-style-type: none"> 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). <p>Big Idea: Numbers are related in many ways.</p> <p>Comparing and ordering quantities (multitude or magnitude)</p> <ul style="list-style-type: none"> Compares, orders, and locates integers. <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 demonstrates an understanding of integer addition and subtraction. Models and demonstrates an understanding of integer multiplication and division. <p>Investigating Number and Arithmetic Properties</p> <ul style="list-style-type: none"> Evaluates equations with brackets using order of operations.

<p>Operations with decimals (addition, subtraction, multiplication, division, and order of operations):</p> <ul style="list-style-type: none"> includes the use of brackets, but excludes exponents 	<p>Number Unit 4: Operations with Fractions, Decimals, and Percents</p> <p>16: Multiplying Decimals 17: Dividing Decimals 18: Applying the Order of Operations with Decimals</p>	<p>Unit 3 Questions 1-12 (pp. 21–25)</p>	<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"> Demonstrates an understanding of decimal number computation through modelling and flexible strategies. <p>Developing fluency of operations</p> <ul style="list-style-type: none"> Solves decimal number computation using efficient strategies.
<p>Relationships between decimals, fractions, ratios, and percents:</p> <ul style="list-style-type: none"> conversions, equivalency, and terminating versus repeating decimals, place value, and benchmarks comparing and ordering decimals and fractions using the number line $\frac{1}{2} = 0.5 = 50\% = 50:100$ shoreline cleanup 	<p>Number Unit 3: Fractions, Decimals, and Percents</p> <p>12: Converting Between Fractions and Decimals 13: Comparing and Ordering Fractions and Decimals 14: Relating Fractions, Decimals, and Percents</p>	<p>Unit 5 Questions 8-11 (pp. 41–42)</p> <p>Unit 7 Questions 1-9 (pp. 59–63)</p> <p>Unit 8 Questions 16-21 (pp. 73–74)</p>	<p>Big Idea: Numbers are related in many ways.</p> <p>Decomposing and composing numbers to investigate equivalencies</p> <ul style="list-style-type: none"> 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. <p>Comparing and ordering quantities (multitude or magnitude)</p> <ul style="list-style-type: none"> Compares, orders, and locates positive rational numbers using flexible strategies. <p>Using ratios, rates, proportions, and percents creates a relationship between quantities</p> <ul style="list-style-type: none"> Understands and applies the concept of percentage as a rate per hundred (e.g., calculating sales tax, tips, or discounts).
<p>Discrete linear relations, using expressions, tables, and graphs:</p> <ul style="list-style-type: none"> four quadrants, limited to integral coordinates $3n + 2$; 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 	<p>Patterning Unit 1: Linear Patterns and Equations</p> <p>1: Representing Patterns</p>	<p>Unit 1 Questions 1-14 (pp. 2–9)</p> <p>Unit 13 Questions 1-10 (pp. 117–120)</p>	<p>Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.</p> <p>Representing patterns, relations, and functions</p> <ul style="list-style-type: none"> 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. <p>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</p> <p>Using variables, algebraic expressions, and equations to represent mathematical relations</p> <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>Two-step equations with whole-number coefficients, constants, and solutions:</p> <ul style="list-style-type: none"> • 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 	<p>Patterning Unit 1: Linear Patterns and Equations</p> <p>4: Modelling and Solving One-Step Equations</p> <p>5: Modelling and Solving Two-Step Equations</p>	<p>Unit 13 Questions 11-19 (pp. 120–124)</p>	<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"> - 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., $-4m + 16 = -12$).
<p>Circumference and area of circles:</p> <ul style="list-style-type: none"> • 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.) 	<p>Measurement Unit 1: 2-D Shapes and 3-D Solids</p> <p>1: Exploring Circles</p> <p>2: Calculating Circumference</p> <p>5: Estimating and Determining the Area of a Circle</p>	<p>Unit 4 Questions 1-10, 13, 14c, 15 (pp. 29–35)</p>	<p>Big Idea: Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared.</p> <p>Understanding attributes that can be measured, compared, or ordered</p> <ul style="list-style-type: none"> - Understands circumference as the measure around a circle. <p>Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.</p> <p>Selecting and using units to estimate, measure, construct, and make comparisons</p> <ul style="list-style-type: none"> - Constructs circles based on radius and diameter measures. <p>Understanding relationships among measured units</p> <ul style="list-style-type: none"> - Develops and generalizes strategies to compute the circumference and area of circles.

<p>Volume of rectangular prisms and cylinders:</p> <ul style="list-style-type: none"> • volume = area of base x height • bentwood boxes, wiigwaasabak and mide-wiigwaas (birch bark scrolls) • Exploring Math through Haida Legends: Culturally Responsive Mathematics 	<p>Measurement Unit 1: 2-D Shapes and 3-D Solids</p> <p>8: Determining the Volume of Rectangular Prisms and Cylinders</p>	<p>Unit 5 Questions 13, 17, 18, 19 (pp. 43, 45, 46)</p>	<p>Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.</p> <p>Understanding relationships among measured units</p> <ul style="list-style-type: none"> - Develops and generalizes strategies to compute volumes of right rectangular prisms.
<p>Cartesian coordinates and graphing:</p> <ul style="list-style-type: none"> • 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 	<p>Geometry Unit 1: Transformations on a Cartesian Plane</p> <p>1: Exploring the Cartesian Plane</p> <p>2: Translating 2-D Shapes on a Cartesian Plane</p> <p>3: Reflecting and Rotating 2-D Shapes on a Cartesian Plane</p>	<p>Unit 6 Questions 1-5 (pp. 47–50)</p>	<p>Big Idea: Objects can be located in space and viewed from multiple perspectives.</p> <p>Locating and mapping objects in space</p> <ul style="list-style-type: none"> - 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.
<p>Combinations of transformations:</p> <ul style="list-style-type: none"> • 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 	<p>Geometry Unit 1: Transformations on a Cartesian Plane</p> <p>2: Translating 2-D Shapes on a Cartesian Plane</p> <p>3: Reflecting and Rotating 2-D Shapes on a Cartesian Plane</p> <p>4: Combining Transformations</p> <p>5: Exploring Tessellations</p>	<p>Unit 6 Questions 6-16 (pp. 50–56)</p>	<p>Big Idea: Objects can be located in space and viewed from multiple perspectives.</p> <p>Locating and mapping objects in space</p> <ul style="list-style-type: none"> - 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. <p>Big Idea: 2-D shapes and 3-D solids can be transformed in many ways and analyzed for change.</p> <p>Exploring 2-D Shapes and 3-D Solids by Applying and Visualizing Transformations</p> <ul style="list-style-type: none"> - Uses properties of shapes and transformations to design tessellations.

<p>Circle graphs:</p> <ul style="list-style-type: none"> 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 	<p>Data Management Unit 1: Data Management 6: Exploring Circle Graphs 7: Constructing Circle Graphs</p>	<p>Unit 10 Questions 3, 4, 15 (pp. 86, 87, 94)</p>	<p>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.</p>
<p>Experimental probability with two independent events</p> <ul style="list-style-type: none"> experimental probability, multiple trials (e.g., toss two coins, roll two dice, spin a spinner twice, or a combination thereof) dice games 	<p>Data Management Unit 2: Probability 8: Writing Experimental Probabilities</p>	<p>Unit 9 Questions 1-6 (p. 78)</p>	<p>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.</p>
<p>Financial literacy – financial percentage</p> <ul style="list-style-type: none"> financial percentage calculations sales tax, tips, discount, sale price 	<p>Number Unit 4: Operations with Fractions, Decimals, and Percents 19: Working with Percents</p> <p>Number Unit 5: Financial Literacy 22: Calculating Sales Taxes and Tips 23: Calculating Sales Taxes and Discounts</p>	<p>Unit 8 Questions 20, 21 (p. 74)</p> <p>Unit 11 Questions 7-9, 11, 12 (pp. 99–100)</p>	<p>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).</p>

Mathology 7 Practice Workbook Unit 14: Coding

Not required, but recommended as it aligns with Applied Design, Skills, and Technologies (Computational Thinking Learning Standard)