



## Correlation of the Yukon Mathematics Curriculum with Mathology Grade 7

Learning Standards	Grade 7 Mathology.ca	Pearson Canada Grades 4–9 Mathematics Learning Progression
<b>Content - Elaborations</b>		
<p><b>Multiplication and division facts to 100 (extending computational fluency):</b></p> <ul style="list-style-type: none"> <li>When multiplying 214 by 5, we can multiply by 10, then divide by 2 to get 1070.</li> </ul>	<p><b>Number Unit 1: Number Relationships</b></p> <p>4: Applying Multiplication and Division Facts to 100</p>	<p><b>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</b></p> <p><b>Developing Fluency of Operations</b></p> <ul style="list-style-type: none"> <li>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)</li> </ul>
<p><b>Operations with integers (addition, subtraction, multiplication, division, and order of operations):</b></p> <ul style="list-style-type: none"> <li>addition, subtraction, multiplication, division, and order of operations</li> <li>concretely, pictorially, symbolically</li> <li>order of operations includes the use of brackets, excludes exponents</li> <li>using two-sided counters</li> <li><math>9 - (-4) = 13</math> because <math>-4</math> is 13 away from <math>+9</math></li> <li>extending whole-number strategies to decimals</li> </ul>	<p><b>Number Unit 2: Fluency with Integers</b></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><b>Big Idea: The set of real numbers is infinite.</b></p> <p><b>Extending whole number understanding to the set of real numbers</b></p> <ul style="list-style-type: none"> <li>Understands that a positive integer and its negative opposite are the same distance from zero (e.g., both 5 and <math>-5</math> are five units from zero on a number line).</li> </ul> <p><b>Big Idea: Numbers are related in many ways.</b></p> <p><b>Comparing and ordering quantities (multitude or magnitude)</b></p> <ul style="list-style-type: none"> <li>Compares, orders, and locates integers.</li> </ul> <p><b>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</b></p> <p><b>Developing conceptual meaning of operations</b></p> <ul style="list-style-type: none"> <li>Models and demonstrates an understanding of integer addition and subtraction.</li> <li>Models and demonstrates an understanding of integer multiplication and division.</li> </ul> <p><b>Investigating Number and Arithmetic Properties</b></p> <ul style="list-style-type: none"> <li>Evaluates equations with brackets using order of operations.</li> </ul>

<p><b>Operations with decimals (addition, subtraction, multiplication, division, and order of operations):</b></p> <ul style="list-style-type: none"> <li>includes the use of brackets, but excludes exponents</li> </ul>	<p><b>Number Unit 4: Operations with Fractions, Decimals, and Percents</b></p> <p>16: Multiplying Decimals 17: Dividing Decimals 18: Applying the Order of Operations with Decimals</p>	<p><b>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</b></p> <p><b>Developing conceptual meaning of operations</b></p> <ul style="list-style-type: none"> <li>Demonstrates an understanding of decimal number computation through modelling and flexible strategies.</li> </ul> <p><b>Developing fluency of operations</b></p> <ul style="list-style-type: none"> <li>Solves decimal number computation using efficient strategies.</li> </ul>
<p><b>Relationships between decimals, fractions, ratios, and percents:</b></p> <ul style="list-style-type: none"> <li>conversions, equivalency, and terminating versus repeating decimals, place value, and benchmarks</li> <li>comparing and ordering decimals and fractions using the number line</li> <li><math>\frac{1}{2} = 0.5 = 50\% = 50:100</math></li> <li>shoreline cleanup</li> </ul>	<p><b>Number Unit 3: Fractions, Decimals, and Percents</b></p> <p>12: Converting Between Fractions and Decimals 13: Comparing and Ordering Fractions and Decimals 14: Relating Fractions, Decimals, and Percents</p>	<p><b>Big Idea: Numbers are related in many ways.</b></p> <p><b>Decomposing and composing numbers to investigate equivalencies</b></p> <ul style="list-style-type: none"> <li>Understands that all fractions are equivalent to either terminating or repeating decimals.</li> <li>Models and explains the relationship between a fraction and its equivalent decimal form.</li> </ul> <p><b>Comparing and ordering quantities (multitude or magnitude)</b></p> <ul style="list-style-type: none"> <li>Compares, orders, and locates positive rational numbers using flexible strategies.</li> </ul> <p><b>Using ratios, rates, proportions, and percents creates a relationship between quantities</b></p> <ul style="list-style-type: none"> <li>Understands and applies the concept of percentage as a rate per hundred (e.g., calculating sales tax, tips, or discounts).</li> </ul>
<p><b>Discrete linear relations, using expressions, tables, and graphs:</b></p> <ul style="list-style-type: none"> <li>four quadrants, limited to integral coordinates</li> <li><math>3n + 2</math>; values increase by 3 starting from y-intercept of 2</li> <li>deriving relation from the graph or table of values</li> <li>Small Number stories: Small Number and the Old Canoe, Small Number Counts to 100</li> </ul>	<p><b>Patterning Unit 1: Linear Patterns and Equations</b></p> <p>1: Representing Patterns</p>	<p><b>Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.</b></p> <p><b>Representing patterns, relations, and functions</b></p> <ul style="list-style-type: none"> <li>Generates ordered pairs for a linear relation and plots the coordinates on a graph. (Limited to integer values on four quadrants.)</li> <li>Matches different representations of the same linear relation (e.g., graph, equation, table of values)</li> <li>Differentiates between linear and non-linear relations by their graphical representation.</li> </ul> <p><b>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</b></p> <p><b>Using variables, algebraic expressions, and equations to represent mathematical relations</b></p> <ul style="list-style-type: none"> <li>Writes expressions to describe patterns and contexts representing linear relations (e.g., 5, 8, 11, 14 can be represented as <math>3n + 2</math>).</li> </ul>

<p><b>Two-step equations with whole-number coefficients, constants, and solutions:</b></p> <ul style="list-style-type: none"> <li>• solving and verifying <math>3x + 4 = 16</math></li> <li>• modelling the preservation of equality (e.g., using balance, pictorial representation, algebra tiles)</li> <li>• spirit canoe trip pre-planning and calculations</li> <li>• Small Number stories: Small Number and the Big Tree</li> </ul>	<p><b>Patterning Unit 1: Linear Patterns and Equations</b></p> <p>4: Modelling and Solving One-Step Equations 5: Modelling and Solving Two-Step Equations</p>	<p><b>Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.</b></p> <p><b>Understanding equality and inequality, building on generalized properties of numbers and operations.</b></p> <ul style="list-style-type: none"> <li>- Investigates and models the meaning of preservation of equality of single variable equations (e.g., <math>3x = 12</math>).</li> <li>- Models the preservation of equality to solve equations involving integer coefficients (e.g., <math>-4m + 16 = -12</math>).</li> </ul>
<p><b>Circumference and area of circles:</b></p> <ul style="list-style-type: none"> <li>• constructing circles given radius, diameter, area, or circumference</li> <li>• finding relationships between radius, diameter, circumference, and area to develop <math>C = \pi \times d</math> formula</li> <li>• applying <math>A = \pi \times r \times r</math> formula to find the area given radius or diameter</li> <li>• 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.)</li> </ul>	<p><b>Measurement Unit 1: 2-D Shapes and 3-D Solids</b></p> <p>1: Exploring Circles 2: Calculating Circumference 5: Estimating and Determining the Area of a Circle</p>	<p><b>Big Idea: Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared.</b></p> <p><b>Understanding attributes that can be measured, compared, or ordered</b></p> <ul style="list-style-type: none"> <li>- Understands circumference as the measure around a circle.</li> </ul> <p><b>Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.</b></p> <p><b>Selecting and using units to estimate, measure, construct, and make comparisons</b></p> <ul style="list-style-type: none"> <li>- Constructs circles based on radius and diameter measures.</li> </ul> <p><b>Understanding relationships among measured units</b></p> <ul style="list-style-type: none"> <li>- Develops and generalizes strategies to compute the circumference and area of circles.</li> </ul>

<p><b>Volume of rectangular prisms and cylinders:</b></p> <ul style="list-style-type: none"> <li>• volume = area of base x height</li> <li>• bentwood boxes, wiigwaasabak and mide-wiigwaas (birch bark scrolls)</li> <li>• Exploring Math through Haida Legends: Culturally Responsive Mathematics</li> </ul>	<p><b>Measurement Unit 1: 2-D Shapes and 3-D Solids</b></p> <p>8: Determining the Volume of Rectangular Prisms and Cylinders</p>	<p><b>Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.</b></p> <p><b>Understanding relationships among measured units</b></p> <ul style="list-style-type: none"> <li>- Develops and generalizes strategies to compute volumes of right rectangular prisms.</li> </ul>
<p><b>Cartesian coordinates and graphing:</b></p> <ul style="list-style-type: none"> <li>• origin, four quadrants, integral coordinates, connections to linear relations, transformations</li> <li>• overlaying coordinate plane on medicine wheel, beading on dreamcatcher, overlaying coordinate plane on traditional maps</li> </ul>	<p><b>Geometry Unit 1: Transformations on a Cartesian Plane</b></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><b>Big Idea: Objects can be located in space and viewed from multiple perspectives.</b></p> <p><b>Locating and mapping objects in space</b></p> <ul style="list-style-type: none"> <li>- Identifies, locates, and plots points, polygon vertices, and lines on a Cartesian plane in all four quadrants. (Limited to integers.)</li> <li>- Analyzes and predicts the location of 2-D shapes under transformation on a Cartesian plane.</li> <li>- Analyzes and locates points, lines, and shapes on a Cartesian plane after successive transformations.</li> </ul>
<p><b>Combinations of transformations:</b></p> <ul style="list-style-type: none"> <li>• four quadrants, integral coordinates</li> <li>• translation(s), rotation(s), and/or reflection(s) on a single 2-D shape; combination of successive transformations of 2-D shapes; tessellations</li> <li>• First Peoples art, jewelry making, birchbark biting</li> </ul>	<p><b>Geometry Unit 1: Transformations on a Cartesian Plane</b></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><b>Big Idea: Objects can be located in space and viewed from multiple perspectives.</b></p> <p><b>Locating and mapping objects in space</b></p> <ul style="list-style-type: none"> <li>- Analyzes and predicts the location of 2-D shapes under transformation on a Cartesian plane.</li> <li>- Analyzes and locates points, lines, and shapes on a Cartesian plane after successive transformations.</li> </ul> <p><b>Big Idea: 2-D shapes and 3-D solids can be transformed in many ways and analyzed for change.</b></p> <p><b>Exploring 2-D Shapes and 3-D Solids by Applying and Visualizing Transformations</b></p> <ul style="list-style-type: none"> <li>- Uses properties of shapes and transformations to design tessellations.</li> </ul>

<p><b>Circle graphs:</b></p> <ul style="list-style-type: none"> <li>• constructing, labelling, and interpreting circle graphs</li> <li>• translating percentages displayed in a circle graph into quantities and vice versa</li> <li>• visual representations of tidepools or traditional meals on plates</li> </ul>	<p><b>Data Management Unit 1: Data Management</b></p> <p>6: Exploring Circle Graphs 7: Constructing Circle Graphs</p>	<p><b>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.</b></p> <p><b>Creating graphical displays of collected data</b></p> <ul style="list-style-type: none"> <li>- Creates graphical representations to illustrate parts of a whole (e.g., circle graph)</li> </ul> <p><b>Drawing conclusions by making inferences and justifying decisions based on data collected</b></p> <ul style="list-style-type: none"> <li>- Draw conclusions based on data presented.</li> </ul>
<p><b>Experimental probability with two independent events</b></p> <ul style="list-style-type: none"> <li>• experimental probability, multiple trials (e.g., toss two coins, roll two dice, spin a spinner twice, or a combination thereof)</li> <li>• dice games</li> </ul>	<p><b>Data Management Unit 2: Probability</b></p> <p>8: Writing Experimental Probabilities</p>	<p><b>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.</b></p> <p><b>Using the language and tools of chance to describe and predict events</b></p> <ul style="list-style-type: none"> <li>- Determines the relative frequency of each outcome in an experiment involving two independent events by performing multiple trials.</li> </ul>
<p><b>Financial literacy – financial percentage</b></p> <ul style="list-style-type: none"> <li>• financial percentage calculations</li> <li>• sales tax, tips, discount, sale price</li> </ul>	<p><b>Number Unit 4: Operations with Fractions, Decimals, and Percents</b></p> <p>19: Working with Percents</p> <p><b>Number Unit 5: Financial Literacy</b></p> <p>22: Calculating Sales Taxes and Tips 23: Calculating Sales Taxes and Discounts</p>	<p><b>Big Idea: Numbers are related in many ways.</b></p> <p><b>Using ratios, rates, proportions, and percents creates a relationship between quantities</b></p> <p>Understands and applies the concept of percentage as a rate per hundred (e.g., calculating sales tax, tips, or discounts).</p>