



Correlation of Saskatchewan Program of Studies with Mathology Grade 5 (Number)

Curriculum Expectations	Grade 5 Mathology.ca	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
<p>Outcomes N5.1 Represent, compare, and describe whole numbers to 1 000 000 within the contexts of place value and the base ten system, and quantity.</p>	<p>Number Unit 1: Number Relationships and Place Value 1: Representing Larger Numbers 2: Comparing Larger Numbers 4: Consolidation of Number Relationships and Place Value</p>	<p>Big Idea: The set of real numbers is infinite. Extending whole number understanding to the set of real numbers - Extends whole number understanding to 1 000 000. Big Idea: Numbers are related in many ways. Comparing and ordering quantities (multitude or magnitude) - Compares, orders, and locates whole numbers based on place-value understanding and records using $<$, $=$, $>$ symbols. Estimating quantities and numbers - Rounds whole numbers using place-value understanding (e.g., 4736 can be rounded to 5000, 4700, 4740). Decomposing and composing numbers to investigate equivalencies - Composes and decomposes whole numbers using standard and non-standard partitioning (e.g., 1000 is 10 hundreds or 100 tens). Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units. Unitizing quantities into base-ten units - Writes and reads whole numbers in multiple forms (e.g., 1358; one thousand three hundred fifty-eight; $1000 + 300 + 50 + 8$). - Understands that the value of a digit is ten times the value of the same digit one place to the right.</p>

<p>N5.2. Analyze models of, develop strategies for, and carry out multiplication of whole numbers.</p>	<p>Number Unit 4: Fluency with Multiplication and Division 19: Relating Multiplication and Division Facts 20: Using Estimation for Multiplication and Division 21: Strategies for Multiplying Larger Numbers 22: Multiplying Whole Numbers 25: Consolidation of Fluency with Multiplication and Division</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much. Developing conceptual meaning of operations - Extends whole number computation models to larger numbers. 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).</p>
<p>N5.3 Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems.</p>	<p>Number Unit 4: Fluency with Multiplication and Division 19: Relating Multiplication and Division Facts 23: Dividing Larger Numbers 25: Consolidation of Fluency with Multiplication and Division</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much. Developing conceptual meaning of operations - Extends whole number computation models to larger numbers. 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).</p>
<p>N5.4 Develop and apply personal strategies for estimation and computation including:</p> <ul style="list-style-type: none"> • front-end rounding • compensation • compatible numbers. 	<p>Number Unit 1: Number Relationships and Place Value 3: Estimating to Solve Problems</p> <p>Number Unit 2: Fluency with Addition and Subtraction 5: Estimating Sums and Differences 6: Exploring Addition Strategies 7: Exploring Estimation Strategies</p> <p>Number Unit 4: Fluency with Multiplication and Division 20: Using Estimation for Multiplication and Division</p>	<p>Big Idea: Numbers are related in many ways. Comparing and ordering quantities (multitude or magnitude) - Compares, orders, and locates whole numbers based on place-value understanding and records using $<$, $=$, $>$ symbols. Estimating quantities and numbers - Rounds whole numbers using place-value understanding (e.g., 4736 can be rounded to 5000, 4700, 4740). Big Idea: Quantities and numbers can be operated on to determine how many and how much. Developing conceptual meaning of operations - Extends whole number computation models to larger numbers. Developing fluency of operations - Estimates the result of whole number operations using contextually relevant strategies (e.g., How many buses are needed to take the Grade 8 classes to the</p>

		<p>museum?).</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>N5.5 Demonstrate an understanding of fractions by using concrete and pictorial representations to:</p> <ul style="list-style-type: none"> • create sets of equivalent fractions • compare fractions with like and unlike denominators. 	<p>Number Unit 3: Fractions and Decimals</p> <p>10: Equivalent Fractions 12: Comparing and Ordering Fractions 18: Consolidation of Fractions and Decimals</p>	<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 fractions with the same numerator or denominator using reasoning (e.g., $\frac{3}{5} > \frac{3}{6}$ because fifths are larger parts). - Compares, orders, and locates fractions using flexible strategies (e.g., comparing models; creating common denominators or numerators). <p>Estimating quantities and numbers</p> <ul style="list-style-type: none"> - Estimates the location of decimals and fractions on a number line. - Estimates the size and magnitude of fractions by comparing to benchmarks. <p>Decomposing and composing numbers to investigate equivalencies</p> <ul style="list-style-type: none"> - Generates and identifies equivalent fractions using flexible strategies (e.g., represents the same part of a whole; same part of a set; same location on a number line). <p>Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.</p> <ul style="list-style-type: none"> - Partitions fractional parts into smaller fractional units (e.g., partitions halves into thirds to create sixths).
<p>N5.6 Demonstrate understanding of decimals to thousandths by:</p> <ul style="list-style-type: none"> • describing and representing • relating to fractions • comparing and ordering. 	<p>Number Unit 3: Fractions and Decimals</p> <p>13: Representing Decimals 15: Comparing and Ordering Decimals 16: Relating Fractions and Decimals 18: Consolidation of Fractions and Decimals</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"> - Extends decimal number understanding to thousandths. <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 decimal numbers using place-value understanding. <p>Estimating quantities and numbers</p> <ul style="list-style-type: none"> - Estimates the location of decimals and fractions on a number line.

		<p>Decomposing and composing numbers to investigate equivalencies</p> <ul style="list-style-type: none"> - Composes and decomposes decimal numbers using standard and non-standard partitioning (e.g., 1.6 is 16 tenths or 0.16 tens). - Models and explains the relationship between a fraction and its equivalent decimal form (e.g., $\frac{2}{5} = \frac{4}{10} = 0.4$). <p>Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.</p> <p>Unitizing quantities into base-ten units</p> <ul style="list-style-type: none"> - Uses fractions with denominators of 10 to develop decimal fraction understanding and notation (e.g., five-tenths is $\frac{5}{10}$ or 0.5). - Understands that the value of a digit is ten times the value of the same digit one place to the right. - Understands that the value of a digit is one-tenth the value of the same digit one place to the left. - Writes and reads decimal numbers in multiple forms (i.e., numerals, number names, expanded form).
<p>N5.7 Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).</p>	<p>Number Unit 5: Operations with Fractions and Decimals</p> <p>26: Estimating Sums and Differences with Decimals</p> <p>27: Adding with Decimal Numbers</p> <p>28: Subtracting with Decimal Numbers</p> <p>32: Consolidation of Operations with Fractions and Decimals</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"> - Estimates sums and differences of decimal numbers (e.g., calculating cost of transactions involving dollars and cents). - Solves decimal number computation using efficient strategies.

Correlation of Saskatchewan Program of Studies with Mathology Grade 5 (Patterns and Relations)

Curriculum Expectations	Grade 5 Mathology.ca	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
<p>Outcomes P5.1 Represent, analyze, and apply patterns using mathematical language and notation.</p>	<p>Patterning Unit 1: Patterning 1: Investigating Geometric Patterns 2: Investigating Number Patterns 3: Using Pattern Rules to Solve Problems 4: Consolidation of Patterning</p>	<p>Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically. Representing patterns, relations, and functions</p> <ul style="list-style-type: none"> - Describes, generates, extends, translates, and corrects number and shape patterns that follow a predetermined rule. - Uses multiple approaches to model situations involving repetition (i.e., repeating patterns) and change (i.e., increasing/decreasing patterns) (e.g., using objects, tables, graphs, symbols, loops and nested loops in coding). - Represents a numeric or shape pattern using a table of values by pairing the term value with a term number. - Generates a visual model to represent a simple number pattern. - Represents a mathematical context or problem with expressions and equations using variables to represent unknowns. <p>Generalizing and analyzing patterns, relations, and functions</p> <ul style="list-style-type: none"> - Explains the rule for numeric patterns including the starting point and change (e.g., given: 16, 22, 28, 34, Start at 16 and add 6 each time). - Describes numeric and shape patterns using words and numbers. - Predicts the value of a given element in a numeric or shape pattern using pattern rules.
<p>P5.2 Write, solve, and verify solutions of single-variable one-step equations with whole number coefficients and whole number solutions.</p>	<p>Patterning Unit 2: Variables and Equations 5: Using Variables 6: Solving Addition and Subtraction Equations</p>	<p>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</p>

	<p>7: Solving Multiplication and Division Equations</p> <p>8: Using Equations to Solve Problems</p> <p>10: Consolidation of Variables and Equations</p>	<ul style="list-style-type: none"> - Expresses a one-step mathematical problem as an equation using a symbol or letter to represent an unknown number (e.g., Sena had some tokens and used four. She has seven left: $\square - 4 = 7$). - Determines an unknown number in simple one-step equations using different strategies (e.g., $n \times 3 = 12$; $13 - \square = 8$). - Uses arithmetic properties to investigate and transform one-step addition and multiplication equations (e.g., $5 + 4 = 9$ and $5 + a = 9$ have the same structure and can be rearranged in similar ways to maintain equality: $4 + 5 = 9$ and $a + 5 = 9$). - Uses arithmetic properties to investigate and transform one-step subtraction and division equations (e.g., $12 - 5 = 7$ and $12 - b = 7$ have the same structure and can be rearranged in similar ways to maintain equality: $12 - 7 = 5$ and $12 - 7 = b$). <p>Using variables, algebraic expressions, and equations to represent mathematical relations</p> <ul style="list-style-type: none"> - Understands an unknown quantity (i.e., variable) may be represented by a symbol or letter (e.g., $13 - \square = 8$; $4n = 12$). - Flexibly uses symbols and letters to represent unknown quantities in equations (e.g., knows that $4 + \square = 7$; $4 + x = 7$; and $4 + y = 7$ all represent the same equation with \square, x, and y representing the same value). - Interprets and writes algebraic expressions (e.g., $2n$ means two times a number; subtracting a number from 7 can be written as $7 - n$).
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Correlation of Saskatchewan Program of Studies with Mathology Grade 5 (Shape and Space)

Curriculum Expectations	Grade 5 Mathology.ca	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
<p>Outcomes SS5.1 Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions.</p>	<p>Measurement Unit 1: Length, Perimeter, and Area 4: Relating the Perimeter and Area of Rectangles 6: Consolidation of Length, Perimeter, and Area</p>	<p>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 and perimeter of rectangles. - Investigates the relationship between perimeter and area in rectangles.</p>
<p>SS5.2 Demonstrate understanding of measuring length (mm) by:</p> <ul style="list-style-type: none"> selecting and justifying referents for the unit mm modelling and describing the relationship between mm, cm, and m units. 	<p>Measurement Unit 1: Length, Perimeter, and Area 1: Estimating and Measuring in Millimetres 2: Measuring Length in Different Units 6: Consolidation of Length, Perimeter, and Area</p>	<p>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 - Chooses the most appropriate unit to measure a given attribute of an object (e.g., classroom area measured in square metres). Understanding relationships among measured units - Understands and applies the multiplicative relationship among metric units of length, mass, and capacity.</p>
<p>SS5.3 Demonstrate an understanding of volume by:</p> <ul style="list-style-type: none"> selecting and justifying referents for cm^3 or m^3 units estimating volume by using referents for cm^3 or m^3 measuring and recording volume (cm^3 or m^3) constructing rectangular prisms for a given volume. 	<p>Measurement Unit 2: Volume, Capacity, and Mass 10: Investigating Volume 11: Investigating Volume with Rectangular Prisms 12: Consolidation of Volume, Capacity, and Mass</p>	<p>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 volume and capacity as attributes of 3-D objects that can be measured and compared. 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"> - Chooses the most appropriate unit to measure a given attribute of an object (e.g., classroom area measured in square metres). - Develops understanding of a unit cube and uses unit cubes to estimate and measure volume of 3-D objects. - Measures, constructs, and estimates volume using standard cubic units (e.g., cubic centimetre). <p>Understanding relationships among measured units</p> <ul style="list-style-type: none"> - Understands and applies the multiplicative relationship among metric units of length, mass, and capacity.
<p>SS5.4 Demonstrate understanding of capacity by:</p> <ul style="list-style-type: none"> • describing the relationship between mL and L • selecting and justifying referents for mL or L units • estimating capacity by using referents for mL or L • measuring and recording capacity (mL or L). 	<p>Measurement Unit 2: Volume, Capacity, and Mass</p> <p>8: Investigating Capacity 12: Consolidation of Volume, Capacity, and Mass</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, and ordered</p> <ul style="list-style-type: none"> - Understands volume and capacity as attributes of 3-D objects that can be measured and compared. <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"> - Chooses the most appropriate unit to measure a given attribute of an object (e.g., classroom area measured in square metres). <p>Understanding relationships among measured units</p> <ul style="list-style-type: none"> - Understands and applies the multiplicative relationship among metric units of length, mass, and capacity.
<p>Goals: Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour</p>		
<p>SS5.5 Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes that are:</p> <ul style="list-style-type: none"> • parallel • intersecting • perpendicular • vertical 	<p>Geometry Unit 1A: 2-D Shapes and 3-D Solids</p> <p>1: Properties of 2-D Shapes and 3-D Objects 2: Investigating Quadrilaterals</p>	<p>Big Ideas: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes. Investigating geometric attributes and properties of 2-D shapes and 3-D solids</p> <ul style="list-style-type: none"> - Sorts, describes, constructs, and

<ul style="list-style-type: none"> horizontal. 	<p>4: Consolidation of 2-D Shapes and 3-D Solids</p>	<p>classifies polygons based on side attributes (e.g., parallel, perpendicular, regular/irregular).</p> <ul style="list-style-type: none"> - Sorts, describes, constructs, and classifies 3-D objects based on edges, faces, vertices, and angles (e.g., prisms, pyramids). <p>Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition</p> <ul style="list-style-type: none"> - Identifies types of lines in 2-D images (e.g., parallel, intersecting, perpendicular). - Investigates 2-D shapes that do or do not have parallel and perpendicular lines.
<p>Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour</p>		
<p>Outcomes</p> <p>SS5.6 Identify and sort quadrilaterals, including:</p> <ul style="list-style-type: none"> rectangles squares trapezoids parallelograms rhombuses <p>according to their attributes.</p>	<p>Geometry Unit 1A: 2-D Shapes and 3-D Solids</p> <p>2: Investigating Quadrilaterals</p> <p>4: Consolidation of 2-D Shapes and 3-D Solids</p>	<p>Big Ideas: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes. Investigating geometric attributes and properties of 2-D shapes and 3-D solids</p> <ul style="list-style-type: none"> - Identifies and draws parallel, intersecting, and perpendicular lines. - Sorts, describes, constructs, and classifies polygons based on side attributes (e.g., parallel, perpendicular, regular/irregular). - Sorts, describes, classifies 2-D shapes based on their geometric properties (e.g., side lengths, angles, diagonals). - Classifies 2-D shapes within a hierarchy based on their properties (e.g., rectangles are a subset of parallelograms). <p>Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition</p> <ul style="list-style-type: none"> - Identifies types of lines in 2-D images (e.g., parallel, intersecting, perpendicular). - Investigates 2-D shapes that do or do not have parallel and perpendicular lines.

Goals: Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
<p>Outcomes SS5.7 Identify, create, and analyze single transformations of 2-D shapes (with and without the use of technology).</p>	<p>Geometry Unit 2A: Transformations 5: Investigating Translations 6: Investigating Reflections 7: Investigating Rotations 8: Identifying Transformations 9: Consolidation of Transformations</p>	<p>Big Ideas: 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 - Identifies, describes, and performs single transformations (i.e., translation, reflection, rotation) on 2-D shapes.</p>



Correlation of Saskatchewan Program of Studies with Mathology Grade 5 (Statistics and Probability)

Curriculum Expectations	Grade 5 Mathology.ca	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Logical Thinking, Mathematics as a Human Endeavour		
<p>Outcomes SP5.1 Differentiate between first-hand and second-hand data.</p>	<p>Data Management Unit 1A: Data Management 1: Exploring First-Hand and Second-Hand Data</p>	<p>Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphical displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness. Collecting data and organizing it into categories - Differentiates between primary (i.e., first-hand) and secondary (i.e., second-hand) data sources.</p>
Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
<p>Outcomes SP5.2 Construct and interpret double bar graphs to draw conclusions.</p>	<p>Data Management Unit 1A: Data Management 2: Constructing Double-Bar Graphs 3: Interpreting Double-Bar Graphs 4: Consolidation of Data Management</p>	<p>Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphical displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness. Creating graphical displays of collected data - Represents data graphically using many-to-one correspondence with appropriate scales and intervals (e.g., each symbol on pictograph represents 10 people). - Visually represents two or more data sets (e.g., double bar chart, stacked bar graph, multi-line graph, multi-column table). Reading and interpreting data displays and analyzing variability - Reads and interprets data displays using many-to-one correspondence. Drawing conclusions by making inferences and justifying decisions</p>

		<p>based on data collected.</p> <ul style="list-style-type: none"> - Draws conclusions based on data presented. - Interprets the results of data presented graphically from primary (e.g., class survey) and secondary (e.g., online news reports) sources.
<p>Goals: Number Sense, Logical Thinking, Mathematics as a Human Endeavour</p>		
<p>Outcomes SP5.3 Describe, compare, predict, and test the likelihood of outcomes in probability situations.</p>	<p>Data Management Unit 2A: Probability 5: Describing Likelihood of Outcomes 6: Conducting Experiments 7: Designing Experiments 8: Consolidation of Probability</p>	<p>Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphical displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.</p> <p>Using the language and tools of chance to describe and predict events</p> <ul style="list-style-type: none"> - Locates the likelihood of outcomes on a vocabulary-based probability continuum (e.g., impossible, unlikely, likely, certain). - Distinguishes between equally likely events (e.g., heads or tails on a fair coin) and unequally likely events (e.g., spinner with differently sized sections). - Identifies the sample space of independent events in an experiment (e.g., flipping a cup, drawing a coloured cube from a bag). - Investigates and calculates the experimental probability (i.e., relative frequency) of simple events (e.g., 3 heads in 5 coin tosses is $\frac{3}{5}$).