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		
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.	**Number Unit 1: Number Relationships and Place Value** 1: Representing Larger Numbers 2: Comparing Larger Numbers 4: Consolidation of Number Relationships and Place Value	**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.

N5.2. Analyze models of, develop strategies for, and carry out multiplication of whole numbers.	**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	**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).
N5.3 Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems.	**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	**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).
N5.4 Develop and apply personal strategies for estimation and computation including: • front-end rounding • compensation • compatible numbers.	**Number Unit 1: Number Relationships and Place Value** 3: Estimating to Solve Problems **Number Unit 2: Fluency with Addition and Subtraction** 5: Estimating Sums and Differences 6: Exploring Addition Strategies 7: Exploring Estimation Strategies **Number Unit 4: Fluency with Multiplication and Division** 20: Using Estimation for Multiplication and Division	**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

		museum?). - 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).
N5.5 Demonstrate an understanding of fractions by using concrete and pictorial representations to: • create sets of equivalent fractions • compare fractions with like and unlike denominators.	**Number Unit 3: Fractions and Decimals** 10: Equivalent Fractions 12: Comparing and Ordering Fractions 18: Consolidation of Fractions and Decimals	**Big Idea: Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)** - 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). **Estimating quantities and numbers** - Estimates the location of decimals and fractions on a number line. - Estimates the size and magnitude of fractions by comparing to benchmarks. **Decomposing and composing numbers to investigate equivalencies** - 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). **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** - Partitions fractional parts into smaller fractional units (e.g., partitions halves into thirds to create sixths).
N5.6 Demonstrate understanding of decimals to thousandths by: • describing and representing • relating to fractions • comparing and ordering.	**Number Unit 3: Fractions and Decimals** 13: Representing Decimals 15: Comparing and Ordering Decimals 16: Relating Fractions and Decimals 18: Consolidation of Fractions and Decimals	**Big Idea: The set of real numbers is infinite.** **Extending whole number understanding to the set of real numbers** - Extends decimal number understanding to thousandths. **Big Idea: Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)** - Compares, orders, and locates decimal numbers using place-value understanding. **Estimating quantities and numbers** - Estimates the location of decimals and fractions on a number line.

		Decomposing and composing numbers to investigate equivalencies - 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., $\frac{2}{5} = \frac{4}{10} = 0.4$). **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing quantities into base-ten units** - 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).
N5.7 Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).	**Number Unit 5: Operations with Fractions and Decimals** 26: Estimating Sums and Differences with Decimals 27: Adding with Decimal Numbers 28: Subtracting with Decimal Numbers 32: Consolidation of Operations with Fractions and 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** - Estimates sums and differences of decimal numbers (e.g., calculating cost of transactions involving dollars and cents). - Solves decimal number computation using efficient strategies.

Pearson

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		
Outcomes P5.1 Represent, analyze, and apply patterns using mathematical language and notation.	**Patterning Unit 1: Patterning** 1: Investigating Geometric Patterns 2: Investigating Number Patterns 3: Using Pattern Rules to Solve Problems 4: Consolidation of Patterning	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing patterns, relations, and functions** - 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. **Generalizing and analyzing patterns, relations, and functions** - 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.
P5.2 Write, solve, and verify solutions of single-variable one-step equations with whole number coefficients and whole number solutions.	**Patterning Unit 2: Variables and Equations** 5: Using Variables 6: Solving Addition and Subtraction Equations	**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**

	7: Solving Multiplication and Division Equations 8: Using Equations to Solve Problems 10: Consolidation of Variables and Equations	- 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 $12 - 7 = b$). **Using variables, algebraic expressions, and equations to represent mathematical relations** - 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 $7 - n$).

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		
Outcomes SS5.1 Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions.	**Measurement Unit 1: Length, Perimeter, and Area** 4: Relating the Perimeter and Area of Rectangles 6: Consolidation of Length, Perimeter, and Area	**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.
SS5.2 Demonstrate understanding of measuring length (mm) by: • selecting and justifying referents for the unit mm • modelling and describing the relationship between mm, cm, and m units.	**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	**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.
SS5.3 Demonstrate an understanding of volume by: • 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.	**Measurement Unit 2: Volume, Capacity, and Mass** 10: Investigating Volume 11: Investigating Volume with Rectangular Prisms 12: Consolidation of Volume, Capacity, and Mass	**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.**

		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). - 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). **Understanding relationships among measured units** - Understands and applies the multiplicative relationship among metric units of length, mass, and capacity.
SS5.4 Demonstrate understanding of capacity by: • 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).	**Measurement Unit 2: Volume, Capacity, and Mass** 8: Investigating Capacity 12: Consolidation of Volume, Capacity, and Mass	**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.** **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.
Goals: Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
SS5.5 Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes that are: • parallel • intersecting • perpendicular • vertical	**Geometry Unit 1A: 2-D Shapes and 3-D Solids** 1: Properties of 2-D Shapes and 3-D Objects 2: Investigating Quadrilaterals	**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** - Sorts, describes, constructs, and

Pearson

	4: Consolidation of 2-D Shapes and 3-D Solids	classifies polygons based on side attributes (e.g., parallel, perpendicular, regular/irregular). - Sorts, describes, constructs, and classifies 3-D objects based on edges, faces, vertices, and angles (e.g., prisms, pyramids). **Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition** - 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.
• horizontal.		

Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour

Outcomes SS5.6 Identify and sort quadrilaterals, including: • rectangles • squares • trapezoids • parallelograms • rhombuses according to their attributes.	**Geometry Unit 1A: 2-D Shapes and 3-D Solids** 2: Investigating Quadrilaterals 4: Consolidation of 2-D Shapes and 3-D Solids	**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** - 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). **Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition** - 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		
Outcomes SS5.7 Identify, create, and analyze single transformations of 2-D shapes (with and without the use of technology).	**Geometry Unit 2A:** **Transformations** 5: Investigating Translations 6: Investigating Reflections 7: Investigating Rotations 8: Identifying Transformations 9: Consolidation of Transformations	**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.

Pearson

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		
Outcomes SP5.1 Differentiate between first-hand and second-hand data.	**Data Management Unit 1A: Data Management** 1: Exploring First-Hand and Second-Hand Data	**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.
Goals: Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour		
Outcomes SP5.2 Construct and interpret double bar graphs to draw conclusions.	**Data Management Unit 1A: Data Management** 2: Constructing Double-Bar Graphs 3: Interpreting Double-Bar Graphs 4: Consolidation of Data Management	**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**

		based on data collected.
		- 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.
Goals: Number Sense, Logical Thinking, Mathematics as a Human Endeavour		
Outcomes SP5.3 Describe, compare, predict, and test the likelihood of outcomes in probability situations.	**Data Management Unit 2A: Probability** 5: Describing Likelihood of Outcomes 6: Conducting Experiments 7: Designing Experiments 8: Consolidation of Probability	**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.** **Using the language and tools of chance to describe and predict events** - 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 $\frac{3}{5}$).