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

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| **Curriculum Expectations** | **Grade 5 Mathology.ca** | **Mathology Practice Workbook 5** | **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 Numbers2: Comparing Larger Numbers4: Consolidation of Number Relationships and Place Value | Unit 2 Questions 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 15 (pp. 8-11, 13)  | **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 Facts20: Using Estimation for Multiplication and Division21: Strategies for Multiplying Larger Numbers22: Multiplying Whole Numbers25: Consolidation of Fluency with Multiplication and Division | Unit 13 Questions 1, 2, 3, 4, 5, 7, 8, 9, 13 (pp. 80-83, 85) | **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). |
| N5.3Demonstrate, 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 Facts23: Dividing Larger Numbers 25: Consolidation of Fluency with Multiplication and Division | Unit 13 Questions 3, 6, 7, 9, 14 (pp. 81-83, 85) | **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 Differences6: Exploring Addition Strategies7: Exploring Estimation Strategies**Number Unit 4: Fluency with Multiplication and Division**20: Using Estimation for Multiplication and Division | Unit 2 Questions 5, 12, 13, 14 (pp. 9, 12) Unit 3 Questions 1, 2, 3, 5 (pp. 14-15, 17)Unit 9 Questions 1, 2, 3, 4, 5, 12 (pp. 52-54, 57)Unit 12 Question 4 (p. 73)Unit 13 Question 3 (p. 81) | **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 Fractions18: Consolidation of Fractions and Decimals | Unit 7 Questions 1, 2, 3, 4, 8, 9, 12 (pp. 42-43, 45, 47) | **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 Decimals15: Comparing and Ordering Decimals 16: Relating Fractions and Decimals18: Consolidation of Fractions and Decimals | Unit 7 Questions 5, 6, 7, 8, 9, 10, 12 (pp. 44-47) | **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 Decimals27: Adding with Decimal Numbers28: Subtracting with Decimal Numbers32: Consolidation of Operations with Fractions and Decimals | Unit 9 Question 1, 2, 3, 4, 5, 12 (pp. 52-54, 57)Unit 12 Questions 1, 3, 4 (pp. 72-73) | **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. |

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

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| **Curriculum Expectations** | **Grade 5 Mathology.ca** | **Mathology Practice Workbook 5** | **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 Patterns2: Investigating Number Patterns3: Using Pattern Rules to Solve Problems4: Consolidation of Patterning | Unit 1 Questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (pp. 2-7)  | **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 Variables6: Solving Addition and Subtraction Equations7: Solving Multiplication and Division Equations8: Using Equations to Solve Problems 10: Consolidation of Variables and Equations | Unit 16 Questions 1, 2, 3a, 3c, 5, 7, 8, 9, 13 (pp. 99-102, 104)  | **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**- 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: □ – 4 = 7).- Determines an unknown number in simple one-step equations using different strategies (e.g., *n* × 3 = 12; 13 – □ = 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 – □ = 8; 4*n* = 12).- Flexibly uses symbols and letters to represent unknown quantities in equations (e.g., knows that 4 + □ = 7; 4 + *x* = 7; and 4 + *y* = 7 all represent the same equation with □, *x*, and *y* representing the same value).- Interprets and writes algebraic expressions (e.g., 2*n* 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)**

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| **Curriculum Expectations** | **Grade 5 Mathology.ca** | **Mathology Practice Workbook 5** | **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 Rectangles6: Consolidation of Length, Perimeter, and Area | Unit 14 Questions 5, 6, 7, 8, 9, 12 (pp. 87-90, 92)  | **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 Millimetres2: Measuring Length in Different Units6: Consolidation of Length, Perimeter, and Area | Unit 14 Questions 1, 2, 3 (pp. 86-87) | **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 cm3 or m3 units
* estimating volume by using referents for cm3 or m3
* measuring and recording volume (cm3 or m3)
* constructing rectangular prisms for a given volume.
 | **Measurement Unit 2: Mass, Capacity, and Volume**10: Investigating Volume11: Investigating Volume with Rectangular Prisms12: Consolidation of Mass, Capacity, and Volume | Unit 15 Questions 8, 9, 10, 11, 12, 13 (pp. 95-98) | **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: Mass, Capacity, and Volume**8: Investigating Capacity12: Consolidation of Mass, Capacity, and Volume | Unit 15 Questions 4, 5, 6, 7 (pp. 94-95) | **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
* horizontal.
 | **Geometry Unit 1A: 2-D Shapes and 3-D Solids**1: Properties of 2-D Shapes and 3-D Objects2: Investigating Quadrilaterals4: Consolidation of 2-D Shapes and 3-D Solids | Unit 4 Questions 1, 2, 4, 9, 10 (pp. 22-24, 26-27)  | **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 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. |
| **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 Quadrilaterals4: Consolidation of 2-D Shapes and 3-D Solids | Unit 4 Questions 1, 2, 3, 4, 5, 10 (pp. 22-24, 27)  | **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 Translations6: Investigating Reflections7: Investigating Rotations8: Identifying Transformations9: Consolidation of Transformations | Unit 5 Questions 4, 5, 6, 7, 8, 9, 10 (pp. 30-33) | **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. |



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

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| **Curriculum Expectations** | **Grade 5 Mathology.ca** | **Mathology Practice Workbook 5** | **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 | Unit 10 Question 3 (p. 61) | **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 Graphs4: Consolidation of Data Management  | Unit 10 Questions 4, 8(pp. 62, 65) | **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 Events6: Conducting Experiments7: Designing Experiments8: Consolidation of Probability | Unit 11 Questions 1, 2, 3, 4, 5, 6, 7, 8, 9 (pp. 66-71) | **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 $\frac{3}{5}$). |

**Unit 6: Coding** Not required, but recommended

**Unit 12: Financial Literacy** Not required, but recommended