**Correlation of Saskatchewan Program of Studies with Mathology Grade 6
(Number)**

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| **Curriculum Expectations** | **Grade 6 Mathology.ca** | **Pearson Canada Grades 4-6 Mathematics Learning Progression** |
| **Goals:** Number Sense, Logical Thinking, Spatial Sense, Mathematics as a Human Endeavour |
| **Outcomes**N6.1 Demonstrate understanding of place value including:* greater than one million
* less than one thousandth

with and without technology. | **Number Unit 1: Number Relationships and Place Value**1: Representing Larger Numbers (to 1 000 000 and Beyond)2: Representing Numbers in Different Forms5: Consolidation of Number Relationships and Place Value**Number Unit 2: Fluency with Whole Numbers** 6: Solving Problems with Whole Numbers 7: Estimating Reasonableness of Solutions 12: Consolidation of Fluency with Whole Numbers**Number Unit 3: Fractions, Decimals, Percents, and Integers**15: Representing Decimals16: Comparing and Ordering Decimals21: Consolidation of Fractions, Decimals, Percents and Integers**Number Unit 4: Operations with Fractions and Decimals** 22: Multiplying Decimals by 1-Digit Numbers 24: Dividing Decimals by 1-Digit Numbers 26: Adding and Subtracting Decimals30: Consolidation of Operations Fractions and Decimals | **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.**-** 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 whole numbers based on place-value understanding, and records using <, =, and > symbols.**-** Compares, orders, and locates decimal numbers using place-value understanding.**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).**-** Composes and decomposes decimal numbers using standard and non-standard partitioning (e.g., 1.6 is 16 tenths or 0.16 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.**-** 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 (e.g., numerals, number names, expanded form).**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.- Demonstrates an understanding of decimal number computation through modelling and flexible strategies.**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).- Solves decimal number computation using efficient strategies. |
| N6.2 Demonstrate understanding of factors and multiples (concretely, pictorially, and symbolically) including:* determining factors and multiples of numbers less than 100
* relating factors and multiples to multiplication and division
* determining and relating prime and composite numbers.
 | **Number Unit 1: Number Relationships and Place Value**3: Identifying Factors and Multiples4: Identifying Prime and Composite Numbers5: Consolidation of Number Relationships and Place Value | **Big Idea: Numbers are related in many ways.Decomposing and composing numbers to investigate equivalencies**- Decomposes numbers into prime factors.**Big Idea: Quantities and numbers can be operated on to determine how many and how much.****Investigating number and arithmetic properties**- Determines whether one number is a multiple of any one-digit number.- Examines and classifies whole numbers based on their properties (e.g., even/odd; prime; composite; divisible by 2, 5, and 10).- Generates multiples and factors for numbers using flexible strategies.- Distinguishes between and investigates properties of prime and composite numbers (e.g., prime factorization).**Developing fluency of operations**- Fluently recalls multiplication and division facts to 100. |
| N6.3 Demonstrate understanding of the order of operations on whole numbers, (excluding exponents) with and without technology. | **Number Unit 2: Fluency with Whole Numbers**8: The Order of Operations9: Mental Math Strategies12: Consolidation of Fluency with Whole Numbers | **Big Idea: Quantities and numbers can be operated on to determine how many and how much.Investigating number and arithmetic properties**- Applies order of operations for whole numbers and explains the effect when order is not followed.  |
| N6.4 Extend understanding of multiplication and division to decimals (1-digit whole number multipliers and 1-digit natural number divisors). | **Number Unit 4: Operations with Fractions and Decimals**22: Multiplying Decimals by 1-Digit Numbers24: Dividing Decimals by 1-Digit Numbers30: 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**- Solves decimal number computation using efficient strategies. |
| N6.5Demonstrate understanding of percent (limited to whole numbers to 100), concretely, pictorially, and symbolically. | **Number Unit 3: Fractions, Decimals, Percents, and Integers**18: Relating Fractions, Decimals, and Percents21: Consolidation of Fractions, Decimals, Percents and Integers | **Big Idea: Numbers are related in many ways.Decomposing and composing numbers to investigate equivalencies**- Models and explains the relationships among fractions, decimals, and percents.- Translates flexibly between representations. |
| N6.6 Demonstrate understanding of integers, concretely, pictorially, and symbolically. | **Number Unit 3: Fractions, Decimals, Percents, and Integers**19: Representing Integers20: Comparing and Ordering Integers21: Consolidation of Fractions, Decimals, Percents and Integers | **Big Idea: The set of real numbers is infinite****Extending whole number understanding to the set of real numbers**- Extends whole number understanding to negative numbers. |
| N6.7 Extend understanding of fractions to improper fractions and mixed numbers. | **Number Unit 3: Fractions, Decimals, Percents, and Integers**13: Representing Fractions14: Comparing and Ordering Fractions21: Consolidation of Fractions, Decimals, Percents and Integers | **Big Idea: Numbers are related in many ways.Comparing and ordering quantities (multitude or magnitude)**- Compares, orders, and locates fractions using flexible strategies (e.g., comparing models; creating common denominators or numerators).**Estimating quantities and numbers**- Estimates the size and magnitude of fractions by comparing to benchmarks.**Decomposing and composing numbers to investigate equivalencies**- Models equivalent forms of improper fractions and mixed numbers using flexible strategies. |
| N6.8Demonstrate an understanding of ratio, concretely, pictorially, and symbolically. | **Number Unit 2: Fluency with Whole Numbers**11: Exploring Ratios12: Consolidation of Fluency with Whole Numbers | **Big Idea: Numbers are related in many ways.Using ratios, rates, proportions, and percents creates a relationship between quantities**- Understands the concept of ratio as a relationship between two quantities (e.g., 3 wins to 2 losses). |
| N6.9 Research and present how First Nations and Metis peoples, past and present, envision, represent, and use quantity in their lifestyles and worldviews. |  |  |



**Correlation of Saskatchewan Program of Studies with Mathology Grade 6
(Patterns and Relationships)**

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| **Curriculum Expectations** | **Grade 6 Mathology.ca** | **Pearson Canada Grades 4-6 Mathematics Learning Progression** |
| **Goals:** Number Sense, Spatial Sense, Logical Thinking, Mathematics as a Human Endeavour |
| **Outcomes**P6.1 Extend understanding of patterns and relationships in tables of values and graphs. | **Patterning Unit 1: Patterning**1: Investigating Patterns and Relationships in Tables and Graphs2: Solving Problems4: Consolidation of Patterning | **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.****Representing patterns, relations, and functions**- Represents a numeric or shape pattern using a table of values by pairing the term value with a term number.- 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.- Describes the relationship between two numeric patterns (e.g., for every 4 steps, she travels 3 metres). |
| P6.2 Extend understanding of preservation of equality concretely, pictorially, physically, and symbolically. | **Patterning Unit 2: Variables and Equations**6: Investigating Equality in Equations10: Consolidation of Variables and 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**- Recognizes that an equal sign between two expressions with variables indicates that the expressions are equivalent (e.g., 5*n* – 4 = 3*n*; 3*r* = 2 + *s*).- Investigates and models the meaning of preservation of equality of single variable equations (e.g., 3*x* = 12). |
| P6.3 Extend understanding of patterns and relationships by using expressions and equations involving variables. | **Patterning Unit 2: Variables and Equations**6: Investigating Equality in Equations7: Representing Generalizations in Patterns10: Consolidation of Variables and Equations**Measurement Unit 1A: Perimeter, Area, Volume, and Capacity**1: Determining the Perimeter of Polygons2: Determining the Area of Rectangles | **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).- 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*).- Understands a variable as a changing quantity (e.g., 5*s*, where *s* can be any value).- Uses expressions and equations with variables to represent generalized relations and algorithms (e.g., *P* = 2*l* + 2w).**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. |

**Correlation of Saskatchewan Program of Studies with Mathology Grade 6
(Shape and Space)**

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| **Curriculum Expectations** | **Grade 6 Mathology.ca** | **Pearson Canada Grades 4-6 Mathematics Learning Progression** |
| **Goals:** Spatial Sense, Number Sense, Logical Thinking, Mathematics as a Human Endeavour |
| **Outcomes**SS6.1 Demonstrate understanding of angles including:* identifying examples
* classifying angles
* estimating the measure
* determining angle measures in degrees
* drawing angles
* applying angle relationships in triangles and quadrilaterals.
 | **Geometry Unit 1A: 2-D Shapes and Angles**1: Classifying and Measuring Angles2: Measuring and Constructing Angles3: Classifying Triangles4: Identifying and Constructing Triangles6: Consolidation of 2-D Shapes and Angles | **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 angle as an attribute that can be measured and compared.- Understands angle is additive (e.g., 90° can be visualized as nine sectors that are 10° each).**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**- Measures, constructs, and estimates angles using degrees.**Understanding relationships among measured units**- Investigates and generalizes sum of interior angles of triangles (i.e., sum of angles of a triangle is 180°).**Big Idea: 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**- Draws, compares, and classifies angles (i.e., right, acute, obtuse, straight, reflex). |
| SS6.2 Extend and apply understanding of perimeter of polygons, area of rectangles, and volume of right rectangular prisms (concretely, pictorially, and symbolically) including:* relating area to volume
* comparing perimeter and area
* comparing area and volume
* generalizing strategies and formulae
* analyzing the effect of orientation
* solving situational questions.
 | **Measurement Unit 1A: Perimeter, Area, Volume, and Capacity**1: Determining the Perimeter of Polygons2: Determining the Area of Rectangles4: Determining the Volume of Right Rectangular Prisms6: Consolidation of Perimeter, Area, Volume, and Capacity | **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**- Measures, constructs, and estimates perimeter and area of regular and irregular polygons.**Understanding relationships among measured units**- Develops and generalizes strategies to compute area and perimeter of rectangles.- Develops and generalizes strategies and formulas to compute volumes of right rectangular prisms. |
| SS6.3 Demonstrate understanding of regular and irregular polygons including:* classifying types of triangles
* comparing side lengths
* comparing angle measures
* differentiating between regular and irregular polygons
* analyzing for congruence.
 | **Geometry Unit 1A: 2-D Shapes and Angles**3: Classifying Triangles4: Identifying and Constructing Triangles5: Investigating Polygons6: Consolidation of 2-D Shapes and Angles | **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, and classifies 2-D shapes based on their geometric properties (e.g., side length, angles, diagonals).- Classifies 2-D shapes within a hierarchy based on their properties (e.g., rectangles are a subset of parallelograms). |
| **Goals:** Logical Thinking, Spatial Sense, Mathematics as a Human Endeavour |
| **Outcomes**SS6.4 Demonstrate understanding of the first quadrant of the Cartesian plane and ordered pairs with whole number coordinates. | **Geometry Unit 2A: Transformations**10: Plotting and Reading Coordinates12: Consolidation of Transformations | **Big Idea: Objects can be located in space and viewed from multiple perspectives.Locating and mapping objects in space**- Develops understanding of a Cartesian plane as a coordinate system using perpendicular axes.- Plots and locates points on a Cartesian plane, and relates the location to the two axes. (Limited to the first quadrant.) |
| SS6.5 Demonstrate understanding of single, and combinations of, transformations of 2-D shapes (with and without the use of technology) including:* identifying
* describing
* performing.
 | **Geometry Unit 2A: Transformations**7: Rotating 2-D Shapes on a Grid8: Single Transformations on a Grid9: Combining Transformations on a Grid10: Plotting and Reading Coordinates11: Transformations on a Coordinate Plane12: 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.- Identifies, describes, applies, and creates a combination of successive transformations on 2-D shapes. |

**Correlation of Saskatchewan Program of Studies with Mathology Grade 6
(Statistics and Probability)**

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| **Curriculum Expectations** | **Grade 6 Mathology.ca** | **Pearson Canada Grades 4-6 Mathematics Learning Progression** |
| **Goals:** Spatial Sense, Number Sense, Logical Thinking, Mathematics as a Human Endeavour |
| **Outcomes**SP6.1 Extend understanding of data analysis to include:* line graphs
* graphs of discrete data
* data collection through questionnaires, experiments, databases, and electronic media
* interpolation and extrapolation.
 | **Data Management Unit 1: Data Management**1: Exploring Line Graphs3: Collecting and Organizing Data4: Interpreting Graphs to Solve Problems6: 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.****Collecting data and organizing it into categories**- Constructs data organizers to support data collection (e.g., creates tally chart or line plot on a grid to collect survey data).- Differentiates between discrete (e.g., votes) and continuous (e.g., height) data.- Selects and justifies an appropriate method of data collection (e.g., experiment, observation, survey) based on question posed.**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).- Chooses and justifies appropriate visual representations for displaying discrete (e.g., bar graph) and continuous (e.g., line graph) data.**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 on data presented.- Interprets the results of data presented graphically from primary (e.g., class survey) and secondary (e.g., online news report) sources. |
| **Goals:** Number Sense, Logical Thinking, Mathematics as a Human Endeavour |
| **Outcomes**SP6.2 Demonstrate understanding of probability by:* determining sample space
* differentiating between experimental and theoretical probability
* determining the theoretical probability
* determining the experimental probability
* comparing experimental and theoretical probabilities.
 | **Data Management Unit 2: Probability**7: Exploring Theoretical Probability8: Identifying Possible Outcomes9: Conducting Experiments10: 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.****Collecting data and organizing it into categories**- Records the results of multiple trials of simple events.**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) 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 coins tosses is $\frac{3}{5}$). |