



Correlation of Saskatchewan Program of Studies with Mathology Grade 4 (Number)

Curriculum Expectations	Grade 4 Mathology.ca	Mathology Practice Workbook 4	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Logical Thinking, Mathematical Attitude			
<p>Outcomes N4.1 Demonstrate an understanding of whole numbers to 10 000 (pictorially, physically, orally, in writing, and symbolically) by:</p> <ul style="list-style-type: none"> • representing • describing • comparing two numbers • ordering three or more numbers. 	<p>Number Unit 1: Number Relationships and Place Value 1: Representing Numbers to 10 000 2: Composing and Decomposing Larger Numbers 4: Comparing and Ordering Numbers 6: Consolidation of Number Relationships and Place Value</p>	<p>Unit 2 Questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16 (pp. 8-13)</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. 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>N4.2 Demonstrate an understanding of addition of whole numbers with answers to 10 000 and their corresponding subtractions (limited to 3- and 4-digit numerals) by:</p>	<p>Number Unit 2: Fluency with Addition and Subtraction 7: Estimating Sums and Differences 8: Modelling Addition and Subtraction</p>	<p>Unit 3 Questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (pp. 14-20)</p> <p>Unit 14 Questions 2, 9 (pp. 91, 95)</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much. Investigating number and arithmetic properties - Recognizes and generates equivalent</p>

<ul style="list-style-type: none"> • using personal strategies for adding and subtracting • estimating sums and differences • solving problems involving addition and subtraction. 	<p>9: Adding and Subtracting Larger Numbers</p> <p>10: Using Mental Math to Add and Subtract</p> <p>11: Creating and Solving Problems</p> <p>12: Consolidation of Fluency with Addition and Subtraction</p>		<p>numerical expressions using commutative and associative properties.</p> <ul style="list-style-type: none"> - Understands operation relationships (e.g., inverse relationship between multiplication/division, addition/subtraction). - Understands the identity of operations (e.g., $5 + 0 = 5$; $7 \times 1 = 7$). <p>Developing conceptual meaning of operations</p> <ul style="list-style-type: none"> - Models and develops meaning for whole number computation to four digits. <p>Developing fluency of operations</p> <ul style="list-style-type: none"> - 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).
<p>N4.3 Demonstrate an understanding of multiplication of whole numbers (limited to numbers less than or equal to 10) by:</p> <ul style="list-style-type: none"> • applying mental mathematics strategies • explaining the results of multiplying by 0 and 1. 	<p>Number Unit 5: Fluency with Multiplication and Division Facts</p> <p>24: Strategies for Multiplication</p> <p>25: Solving Multiplication Problems</p> <p>26: Relating Multiplication and Division</p> <p>27: Strategies for Division</p> <p>29: Consolidation of Fluency with Multiplication and Division Facts</p> <p>Patterning Unit 1: Patterns and Relations</p> <p>4: Investigating Number Relationships</p>	<p>Unit 15 Questions 1, 2, 3, 4, 11 (pp. 99-100, 103)</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Investigating number and arithmetic properties</p> <ul style="list-style-type: none"> - Recognizes and generates equivalent numerical expressions using commutative and associative properties. - Understands operational relationships (e.g., inverse relationship between multiplication/division, addition/subtraction). - Understands the identity of operations (e.g., $5 + 0 = 5$; $7 \times 1 = 7$). <p>Developing fluency of operations</p> <ul style="list-style-type: none"> - Fluently recalls multiplication and division facts to 100.

Goals: Number Sense, Logical Thinking, Mathematical Attitude, Spatial Sense			
<p>Outcomes N4.4 Demonstrate an understanding of multiplication (2- or 3-digit by 1-digit) by:</p> <ul style="list-style-type: none"> • using personal strategies for multiplication with and without concrete materials • using arrays to represent multiplication • connecting concrete representations to symbolic representations • estimating products • solving problems. 	<p>Number Unit 6: Multiplying and Dividing Larger Numbers 30: Exploring Strategies for Multiplying 31: Estimating Products 35: Consolidation of Multiplying and Dividing Larger Numbers</p>	<p>Unit 18 Questions 1, 3, 4, 5, 7, 9, 10 (pp. 117-120)</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much. Developing conceptual meaning of operations - Models and develops meaning for whole number computation to four digits. 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).</p>
<p>N4.5 Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by:</p> <ul style="list-style-type: none"> • using personal strategies for dividing with and without concrete materials • estimating quotients • explaining the results of dividing by 1 • solving problems involving division of whole numbers • relating division to multiplication. 	<p>Number Unit 5: Fluency with Multiplication and Division Facts 27: Strategies for Division 29: Consolidation of Fluency with Multiplication and Division Facts</p> <p>Number Unit 6: Multiplying and Dividing Larger Numbers 32: Exploring Strategies for Dividing 33: Estimating Quotients 34: Dividing with Remainders 35: Consolidation of Multiplying and Dividing Larger Numbers</p>	<p>Unit 18 Questions 1, 4, 5, 8, 9, 11, 12, 13, 14 (pp. 117-122)</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much. Investigating number and arithmetic properties - Understands operation relationships (e.g., inverse relationship between multiplication/division, addition/subtraction). - Understands the identity of operations (e.g., $5 + 0 = 5$; $7 \times 1 = 7$). Developing conceptual meaning of operations - Models and develops meaning for whole number computation to four digits. Developing fluency of operations - Estimates the results 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,</p>

			algorithms, calculating cost of transactions and change owing, saving money to make a purchase).
<p>N4.6 Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to:</p> <ul style="list-style-type: none"> name and record fractions for the parts of a whole or a set compare and order fractions model and explain that for different wholes, two identical fractions may not represent the same quantity provide examples of where fractions are used. 	<p>Number Unit 3: Fractions</p> <p>13: What Are Fractions?</p> <p>14: Counting by Unit Fractions</p> <p>15: Exploring Different Representations of Fractions</p> <p>17: Exploring Equivalence in Fractions</p> <p>18: Comparing and Ordering Fractions</p> <p>19: Consolidation of Fractions</p>	<p>Unit 8 Questions 1, 2, 8, 9, 10, 11, 12, 13 (pp. 50-51, 53-55)</p>	<p>Big Idea: Numbers are related in many ways. Comparing and ordering quantities (multitude or magnitude)</p> <p>- 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).</p> <p>Estimating quantities and numbers</p> <p>- Estimates the size and magnitude of fractions by comparing to benchmarks.</p> <p>Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.</p> <p>Partitioning quantities to form fractions</p> <p>- Partitions fractional parts into smaller fractional parts (e.g., partitions halves into thirds to create sixths).</p> <p>- Uses models to describe, name, and count forward and backward by unit fractions.</p> <p>- Explains that two equivalent fractions represent the same part of a whole, but not necessarily equal quantities (e.g., $\frac{1}{2}$ of a set of 12 and $\frac{1}{2}$ of a set of 6 are equal fractions, but unequal quantities).</p>
<p>N4.7 Demonstrate an understanding of decimal numbers in tenths and hundredths (pictorially, orally, in writing, and symbolically) by:</p> <ul style="list-style-type: none"> describing representing relating to fractions. 	<p>Number Unit 4: Decimals</p> <p>20: Exploring Tenths</p> <p>21: Exploring Hundredths</p> <p>23: Consolidation of Decimals</p>	<p>Unit 9 Questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18 (fractions and decimals only) (pp. 56-62)</p>	<p>Big Idea: The set of real numbers is infinite. Extending whole number understanding to the set of real numbers</p> <p>- Explores decimal fractions to tenths (e.g., 0.1, 0.5, 0.8) and hundredths (e.g., 0.42, 0.05, 0.90).</p> <p>Big Idea: Numbers are related in many ways. Estimating quantities and numbers</p>

			<p>- Estimates the location of decimals and fractions on a number line.</p> <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> <p>- Uses fractions with denominators of 10 to develop decimal fraction understanding and notation (e.g., five-tenths is $\frac{5}{10}$ or 0.5).</p> <p>- Counts forwards and backwards by decimal units (e.g., 0.1, 0.2, ... 0.9, 1.0).</p> <p>- Understands that the value of a digit is ten times the value of the same digit one place to the right.</p> <p>- Understands that the value of a digit is one-tenth the value of the same digit one place to the left.</p> <p>- Writes and reads decimal numbers in multiple forms (e.g., numerals, number names, expanded form).</p>
<p>N4.8 Demonstrate an understanding of addition and subtraction of decimals limited to hundredths (concretely, pictorially, and symbolically) by:</p> <ul style="list-style-type: none"> • using compatible numbers • estimating sums and differences • using mental math strategies • solving problems. 	<p>Number Unit 7: Operations with Fractions and Decimals</p> <p>36: Estimating Sums and Differences with Decimals</p> <p>37: Adding and Subtracting Decimals</p> <p>38: Using Mental Math to Add and Subtract Decimals</p> <p>39: Consolidation of Operations with Fractions and Decimals</p>	<p>Unit 11 Questions 1, 2, 3, 4, 5, 6, 7, 8, 9, 12 (pp. 69-74)</p> <p>Unit 14 Questions 1, 9 (pp. 90-91, 95)</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> <p>- Demonstrates an understanding of decimal number computation through modelling and flexible strategies.</p> <p>Developing fluency of operations</p> <p>- Estimates sums and differences of decimal numbers (e.g., calculating cost of transactions involving dollars and cents).</p> <p>- Solves decimal number computation using efficient strategies.</p>



Correlation of Saskatchewan Program of Studies with Mathology Grade 4 (Patterns and Relations)

Curriculum Expectations	Grade 4 Mathology.ca	Mathology Practice Workbook 4	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Logical Thinking, Mathematical Attitude, Spatial Sense			
<p>Outcomes P4.1 Demonstrate an understanding of patterns and relations by:</p> <ul style="list-style-type: none"> identifying and describing patterns and relations in a chart, table, or diagram reproducing patterns and relations in a chart, table, or diagram using manipulatives creating charts, tables, or diagrams to represent patterns and relations solving problems involving patterns and relations. 	<p>Patterning Unit 1: Patterns and Relations 2: Investigating Increasing and Decreasing Patterns 3: Representing Patterns 4: Investigating Number Relationships 5: Sorting in Venn Diagrams and Carroll Diagrams 6: Consolidation of Patterns and Relations</p>	<p>Unit 1 Questions 1, 3, 4, 5, 6, 7, 8, 12 (pp. 2-5, 7)</p>	<p>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). 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.</p>
<p>P4.2 Demonstrate an understanding of equations involving symbols to represent an unknown value by:</p> <ul style="list-style-type: none"> writing an equation to represent a problem solving one-step equations. 	<p>Patterning Unit 2: Variables and Equations 7: Using Symbols 8: Solving Equations Concretely 9: Solving Addition and Subtraction Equations</p>	<p>Unit 17 Questions 1, 2, 3, 4, 5, 6, 7, 11 (pp. 111-114, 116)</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 - 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: $\square - 4 = 7$).</p>

	<p>11: Solving Multiplication and Division Equations</p> <p>12: Using Equations to Solve Problems</p> <p>13: Consolidation of Variables and Equations</p>	<ul style="list-style-type: none"> - 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 $7 - n$). - Understands a variable as a changing quantity (e.g., $5s$, where s can be any value).
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Correlation of Saskatchewan Program of Studies with Mathology Grade 4 (Shape and Space)

Curriculum Expectations	Grade 4 Mathology.ca	Mathology Practice Workbook 4	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Logical Thinking, Mathematical Attitude			
<p>Outcomes SS4.1 Demonstrate an understanding of time by:</p> <ul style="list-style-type: none"> • reading and recording time using digital and analog clocks (including 24-hour clocks) • reading and recording calendar dates in a variety of formats. 	<p>Measurement Unit 3: Time 12: Exploring Time 13: Telling Time in One- and Five-Minute Intervals 14: Telling Time on a 24-Hour Clock 17: Exploring Calendar Dates 18: Consolidation of Time</p>	<p>Unit 10 Questions 1, 2, 3, 4, 5, 6, 13 (pp. 63-65, 68)</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 - Reads and records time (i.e., digital and analogue) and calendar dates. Understanding relationships among measured units - Understands relationship among different measures of time (e.g., seconds, minutes, hours, days, decades).</p>
<p>SS4.2 Demonstrate an understanding of area of regular and irregular 2-D shapes by:</p> <ul style="list-style-type: none"> • recognizing that area is measured in square units • selecting and justifying referents for the units cm^2 or m^2 • estimating area by using referents for cm^2 or m^2 • determining and recording area (cm^2 or m^2) • constructing different rectangles for a given area 	<p>Measurement Unit 1: Length, Perimeter, and Area 4: Estimating and Measuring Area in Square Metres 5: Estimating and Measuring Area in Square Centimetres 6: Exploring the Area of Rectangles 7: Consolidation of Length, Perimeter, and Area</p>	<p>Unit 16 Questions 5, 6, 7, 8, 9, 10, 11 (pp. 106-110)</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 area as an attribute of 2-D shapes 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 - Develops understanding of square units (e.g., square unit, square cm, square m) to measure area of 2-D shapes.</p>

(cm ² or m ²) in order to demonstrate that many different rectangles may have the same area.			
Goals: Logical Thinking, Mathematical Attitude, Spatial Sense			
Outcomes SS4.3 Demonstrate an understanding of rectangular and triangular prisms by: <ul style="list-style-type: none"> identifying common attributes comparing constructing models. 	Geometry Unit 1A: 2-D Shapes and 3-D Solids 2: Identifying and Describing Prisms 3: Constructing Models of Prisms 5: Consolidation of 2-D Shapes and 3-D Solids	Unit 5 Questions 3, 4, 14 (pp. 28-29, 34)	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 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 and constructs nets for 3-D objects made from triangles and rectangles.
SS4.4 Demonstrate an understanding of line symmetry by: <ul style="list-style-type: none"> identifying symmetrical 2-D shapes creating symmetrical 2-D shapes drawing one or more lines of symmetry in a 2-D shape. 	Geometry Unit 1A: 2-D Shapes and 3-D Solids 4: Understanding Line Symmetry 5: Consolidation of 2-D Shapes and 3-D Solids	Unit 5 Questions 5, 6, 7, 14 (pp. 29-30, 34)	Big Ideas: 2-D shapes and 3-D solids can be transformed in many ways and analyzed for change. Exploring symmetry to analyze 2-D shapes and 3-D solids - Draws and identifies lines of symmetry (i.e., vertical, horizontal, diagonal, oblique) in 2-D shapes and designs.



Correlation of Saskatchewan Program of Studies with Mathology Grade 4 (Statistics and Probability)

Curriculum Expectations	Grade 4 Mathology.ca	Mathology Practice Workbook 4	Pearson Canada Grades 4-6 Mathematics Learning Progression
Goals: Number Sense, Logical Thinking, Mathematical Attitude, Spatial Sense			
<p>Outcomes SP4.1 Demonstrate an understanding of many-to-one correspondence by:</p> <ul style="list-style-type: none"> • comparing correspondences on graphs • justifying the use of many-to-one correspondences • interpreting data shown using a many-to-one correspondence • creating bar graphs and pictographs using many-to-one correspondence. 	<p>Data Management Unit 1A: Data Management</p> <p>1: Interpreting and Drawing Pictographs 2: Interpreting and Drawing Bar Graphs 3: Comparing Graphs 4: Consolidation of Data Management</p>	<p>Unit 12 Questions 1, 2, 3, 9 (pp. 77-79, 83)</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>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).</p> <p>Reading and interpreting data displays and analyzing variability - Reads and interprets data displays using many-to-one correspondence.</p> <p>Drawing conclusions by making inferences and justifying decisions based on data collected. - Draws conclusions based on data presented.</p>

Unit 7: Coding Not required, but recommended

Unit 14: Financial Literacy Not required, but recommended