



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

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Develop number sense.			
Specific Learning Outcomes 5.N.1. Represent and describe whole numbers to 1 000 000.	Number Unit 1: Number Relationships and Place Value 1: Representing Larger Numbers 2: Comparing Larger Numbers 4: 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).

			<p>Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.</p> <p>Unitizing quantities into base-ten units</p> <ul style="list-style-type: none"> - 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>5.N.2. Apply estimation strategies, including</p> <ul style="list-style-type: none"> • front-end rounding • compensation • compatible numbers in problem-solving contexts. 	<p>Number Unit 1: Number Relationships and Place Value</p> <p>3: Estimating to Solve Problems</p> <p>Number Unit 2: Fluency with Addition and Subtraction</p> <p>5: Estimating Sums and Differences</p> <p>Number Unit 4: Fluency with Multiplication and Division</p> <p>20: Using Estimation for Multiplication and Division</p>	<p>Unit 2 Questions 5, 12, 13, 14 (pp. 9, 12)</p> <p>Unit 3 Questions 1, 2, 3, 5 (pp. 14-15, 17)</p> <p>Unit 9 Questions 1, 2, 3, 4, 5, 12 (pp. 52-54, 57)</p> <p>Unit 12 Question 4 (p. 73)</p> <p>Unit 13 Question 3 (p. 81)</p>	<p>Big Idea: Numbers are related in many ways.</p> <p>Comparing and ordering quantities (multitude or magnitude)</p> <ul style="list-style-type: none"> - Compares, orders, and locates whole numbers based on place-value understanding and records using $<$, $=$, $>$ symbols. <p>Estimating quantities and numbers</p> <ul style="list-style-type: none"> - Rounds whole numbers using place-value understanding (e.g., 4736 can be rounded to 5000, 4700, 4740). <p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Developing conceptual meaning of operations</p> <ul style="list-style-type: none"> - Extends whole number computation models to larger numbers. <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>5.N.3. Apply mental math strategies to determine multiplication and related division facts to 81 (9×9).</p> <p>Recall of multiplication facts to 81 and related division facts is expected by the end of Grade 5.</p>	<p>Number Unit 4: Fluency with Multiplication and Division</p> <p>19: Relating Multiplication and Division Facts</p> <p>25: Consolidation of Fluency with Multiplication and Division</p>	Unit 13 Questions 1, 2 (pp. 80-81)	<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.
<p>5.N.4. Apply mental mathematics strategies for multiplication, such as</p> <ul style="list-style-type: none"> • annexing then adding zeros • halving and doubling • using the distributive property 	<p>Number Unit 4: Fluency with Multiplication and Division</p> <p>20: Using Estimation for Multiplication and Division</p> <p>21: Strategies for Multiplying Larger Numbers</p> <p>25: Consolidation of Fluency with Multiplication and Division</p>	Unit 13 Questions 5, 9, 13 (pp. 81, 83, 85)	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Developing conceptual meaning of operations</p> <ul style="list-style-type: none"> - Understands the effect of multiplying and dividing whole numbers by powers of 10. - Extends whole number computation models to larger numbers.
<p>5.N.5. Demonstrate an understanding of multiplication (1- and 2-digit multipliers and up to 4-digit multiplicands), concretely, pictorially, and symbolically, by</p> <ul style="list-style-type: none"> • using personal strategies • using the standard algorithm • estimating products 	<p>Number Unit 4: Fluency with Multiplication and Division</p> <p>22: Multiplying Whole Numbers</p> <p>25: Consolidation of Fluency with Multiplication and Division</p>	Unit 13 Questions 3, 4, 5, 7, 8, 9, 13 (pp. 81-83, 85)	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much.</p> <p>Developing conceptual meaning of operations</p> <ul style="list-style-type: none"> - Extends whole number computation models to larger numbers. <p>Developing fluency of operations</p> <ul style="list-style-type: none"> - Solves whole number computation

to solve problems.			using efficient strategies (e.g., mental computation, algorithms, calculating cost of transactions and change owing, saving money to make a purchase).
<p>5.N.6. Demonstrate an understanding of division (1- and 2-digit divisors and up to 4-digit dividends), concretely, pictorially, and symbolically, and interpret remainders by</p> <ul style="list-style-type: none"> • using personal strategies • using the standard algorithm • estimating quotients to solve problems. 	<p>Number Unit 4: Fluency with Multiplication and Division 23: Dividing Larger Numbers 25: Consolidation of Fluency with Multiplication and Division</p>	<p>Unit 13 Questions 3, 6, 7, 9, 14 (pp. 81-83, 85)</p>	<p>Big Idea: Quantities and numbers can be operated on to determine how many and how much. Developing conceptual meaning of operations - Extends whole number computation models to larger numbers. Developing fluency of operations - Solves whole number computation using efficient strategies (e.g., mental computation, algorithms, calculating cost of transactions and change owing, saving money to make a purchase).</p>
<p>5.N.7. Demonstrate an understanding of fractions by using concrete and pictorial representations to</p> <ul style="list-style-type: none"> • create sets of equivalent fractions • compare fractions with like and unlike denominators 	<p>Number Unit 3: Fractions and Decimals 10: Equivalent Fractions 12: Comparing and Ordering Fractions 18: Consolidation of Fractions and Decimals</p>	<p>Unit 7 Questions 1, 2, 3, 4, 8, 9, 12 (pp. 42-43, 45, 47)</p>	<p>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.,</p>

			<p>represents the same part of a whole; same part of a set; same location on a number line).</p> <p>Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.</p> <ul style="list-style-type: none"> - Partitions fractional parts into smaller fractional units (e.g., partitions halves into thirds to create sixths).
<p>5.N.8. Describe and represent decimals (tenths, hundredths, thousandths), concretely, pictorially, and symbolically.</p>	<p>Number Unit 3: Fractions and Decimals</p> <p>13: Representing Decimals</p> <p>18: Consolidation of Fractions and Decimals</p>	<p>Unit 7 Questions 5, 6, 7, 12 (pp. 44, 47)</p>	<p>Big Idea: The set of real numbers is infinite.</p> <p>Extending whole number understanding to the set of real numbers.</p> <ul style="list-style-type: none"> - Extends decimal number understanding to thousandths. <p>Big Idea: Numbers are related in many ways.</p> <p>Decomposing and composing numbers to investigate equivalencies</p> <ul style="list-style-type: none"> - Composes and decomposes decimal numbers using standard and non-standard partitioning (e.g., 1.6 is 16 tenths or 0.16 tens). <p>Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.</p> <p>Unitizing quantities into base-ten units</p> <ul style="list-style-type: none"> - Understands that the value of a digit is ten times the value of the same digit one place to the right. - Understands that the value of a digit is one-tenth the value of the same digit one place to the left. - Writes and reads decimal numbers in multiple forms (i.e., numerals, number names, expanded form).

<p>5.N.9. Relate decimals to fractions (tenths, hundredths, thousandths).</p>	<p>Number Unit 3: Fractions and Decimals 13: Representing Decimals 16: Relating Fractions and Decimals 18: Consolidation of Fractions and Decimals</p>	<p>Unit 7 Questions 10, 12 (pp. 46-47)</p>	<p>Big Idea: Numbers are related in many ways. Decomposing and composing numbers to investigate equivalencies - 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).</p>
<p>5.N.10. Compare and order decimals (tenths, hundredths, thousandths) by using</p> <ul style="list-style-type: none"> • benchmarks • place value • equivalent decimals 	<p>Number Unit 3: Fractions and Decimals 15: Comparing and Ordering Decimals 18: Consolidation of Fractions and Decimals</p>	<p>Unit 7 Questions 8, 9, 12 (pp. 45, 47)</p>	<p>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. Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units. Unitizing quantities into base-ten units - Understands that the value of a digit is</p>

			<p>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>5.N.11. Demonstrate an understanding of addition and subtraction of decimals (to thousandths), concretely, pictorially, and symbolically, by</p> <ul style="list-style-type: none"> • using personal strategies • using the standard algorithms • using estimation • solving problems 	<p>Number Unit 5: Operations with Fractions and Decimals</p> <p>26: Estimating Sums and Differences with Decimals</p> <p>27: Adding with Decimal Numbers</p> <p>28: Subtracting with Decimal Numbers</p> <p>32: Consolidation of Operations with Fractions and Decimals</p>	<p>Unit 9 Question 1, 2, 3, 4, 5, 12 (pp. 52-54, 57)</p> <p>Unit 12 Questions 1, 3, 4 (pp. 72-73)</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 Manitoba Program of Studies with Mathology Grade 5 (Patterns and Relations: Patterns)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Use patterns to describe the world and solve problems.			
Specific Learning Outcomes 5.PR.1. Determine the pattern rule to make predictions about subsequent elements.	Patterning Unit 1: Patterning 1: Investigating Geometric Patterns 2: Investigating Number Patterns 3: Using Pattern Rules to Solve Problems 4: 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 <ul style="list-style-type: none"> - Describes, generates, extends, translates, and corrects number and shape patterns that follow a predetermined rule. - Uses multiple approaches to model situations involving repetition (i.e., repeating patterns) and change (i.e., increasing/decreasing patterns) (e.g., using objects, tables, graphs, symbols, loops and nested loops in coding). - Represents a numeric or shape pattern using a table of values by pairing the term value with a term number. - Generates a visual model to represent a simple number pattern. - Represents a mathematical context or problem with expressions and equations using variables to represent unknowns. Generalizing and analyzing patterns, relations, and functions

			<ul style="list-style-type: none">- Explains the rule for numeric patterns including the starting point and change (e.g., given: 16, 22, 28, 34, Start at 16 and add 6 each time).- Describes numeric and shape patterns using words and numbers.- Predicts the value of a given element in a numeric or shape pattern using pattern rules.
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Correlation of Manitoba Program of Studies with Mathology Grade 5 (Patterns and Relations: Variables and Equations)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Represent algebraic expressions in multiple ways.			
Specific Learning Outcomes 5.PR.2 Solve problems involving single-variable (expressed as symbols or letters), 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 7: Solving Multiplication and Division Equations 8: 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 <ul style="list-style-type: none"> - Expresses a one-step mathematical problem as an equation using a symbol or letter to represent an unknown number (e.g., Sena had some tokens and used four. She has seven left: $\square - 4 = 7$). - Determines an unknown number in simple one-step equations using different strategies (e.g., $n \times 3 = 12$; $13 - \square = 8$). - Uses arithmetic properties to investigate and transform one-step addition and multiplication equations (e.g., $5 + 4 = 9$ and $5 + a = 9$ have the same structure and can be rearranged in similar ways to maintain equality: $4 + 5 = 9$ and $a + 5 = 9$). - Uses arithmetic properties to investigate and transform one-step subtraction and division equations (e.g., $12 - 5 = 7$ and $12 - b = 7$ have the same structure and can be rearranged in similar ways to maintain equality: $12 - 7 = 5$ and $12 - 7 = b$).

			<p>Using variables, algebraic expressions, and equations to represent mathematical relations</p> <ul style="list-style-type: none"> - Understands an unknown quantity (i.e., variable) may be represented by a symbol or letter (e.g., $13 - \square = 8$; $4n = 12$). - Flexibly uses symbols and letters to represent unknown quantities in equations (e.g., knows that $4 + \square = 7$; $4 + x = 7$; and $4 + y = 7$ all represent the same equation with \square, x, and y representing the same value). - Interprets and writes algebraic expressions (e.g., $2n$ means two times a number; subtracting a number from 7 can be written as $7 - n$). - Understands a variable as a changing quantity (e.g., $5s$, where s can be any value).
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Correlation of Manitoba Program of Studies with Mathology Grade 5 (Shape and Space: Measurement)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Use direct or indirect measurement to solve problems.			
Specific Learning Outcomes 5.SS.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	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.
5.SS.2. Demonstrate an understanding of measuring length (mm) by <ul style="list-style-type: none"> • selecting and justifying referents for the unit mm • modelling and describing the relationship between mm and cm units, and between mm 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	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.

<p>5.SS.3. Demonstrate an understanding of volume by</p> <ul style="list-style-type: none"> • selecting and justifying referents for cm^3 or m^3 units • estimating volume by using referents for cm^3 or m^3 • measuring and recording volume (cm^3 or m^3) • constructing rectangular prisms for a given volume 	<p>Measurement Unit 2: Mass, Capacity, and Volume</p> <p>10: Investigating Volume 11: Investigating Volume with Rectangular Prisms 12: Consolidation of Mass, Capacity, and Volume</p>	<p>Unit 15 Questions 8, 9, 10, 11, 12, 13 (pp. 95-98)</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</p> <ul style="list-style-type: none"> - Understands volume and capacity as attributes of 3-D objects that can be measured and compared. <p>Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons. Selecting and using units to estimate, measure, construct, and make comparisons</p> <ul style="list-style-type: none"> - Chooses the most appropriate unit to measure a given attribute of an object (e.g., classroom area measured in square metres). - Develops understanding of a unit cube and uses unit cubes to estimate and measure volume of 3-D objects. - Measures, constructs, and estimates volume using standard cubic units (e.g., cubic centimetre). <p>Understanding relationships among measured units</p> <ul style="list-style-type: none"> - Understands and applies the multiplicative relationship among metric units of length, mass, and capacity.
<p>5.SS.4. Demonstrate an understanding of capacity by</p> <ul style="list-style-type: none"> • describing the relationship between mL and L • selecting and justifying referents for mL or L units • estimating capacity by using referents for mL or L • measuring and recording capacity (mL or L) 	<p>Measurement Unit 2: Mass, Capacity, and Volume</p> <p>8: Investigating Capacity 12: Consolidation of Mass, Capacity, and Volume</p>	<p>Unit 15 Questions 4, 5, 6, 7 (pp. 94-95)</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</p> <ul style="list-style-type: none"> - Understands volume and capacity as attributes of 3-D objects that can be measured and compared. <p>Big Idea: Assigning a unit to a continuous attribute allows us to measure and make</p>

			<p>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).</p> <p>Understanding relationships among measured units - Understands and applies the multiplicative relationship among metric units of length, mass, and capacity.</p>
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Correlation of Manitoba Program of Studies with Mathology Grade 5 (Shape and Space: 3-D Objects and 2-D Shapes)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.			
Specific Learning Outcomes 5.SS.5. Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes, that are <ul style="list-style-type: none"> • parallel • intersecting • perpendicular • vertical • horizontal 	Geometry Unit 1A: 2-D Shapes and 3-D Solids 1: Properties of 2-D Shapes and 3-D Objects 2: Investigating Quadrilaterals 4: 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.

<p>5.SS.6. Identify and sort quadrilaterals, including</p> <ul style="list-style-type: none"> • rectangles • squares • trapezoids • parallelograms • rhombuses <p>according to their attributes.</p>	<p>Geometry Unit 1A: 2-D Shapes and 3-D Solids</p> <p>2: Investigating Quadrilaterals</p> <p>4: Consolidation of 2-D Shapes and 3-D Solids</p>	<p>Unit 4 Questions 1, 2, 3, 4, 5, 10 (pp. 22-24, 27)</p>	<p>Big Ideas: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes. Investigating geometric attributes and properties of 2-D shapes and 3-D solids</p> <ul style="list-style-type: none"> - Identifies and draws parallel, intersecting, and perpendicular lines. - Sorts, describes, constructs, and classifies polygons based on side attributes (e.g., parallel, perpendicular, regular/irregular). - Sorts, describes, classifies 2-D shapes based on their geometric properties (e.g., side lengths, angles, diagonals). - Classifies 2-D shapes within a hierarchy based on their properties (e.g., rectangles are a subset of parallelograms). <p>Investigating 2-D shapes, 3-D solids, and their attributes through composition and decomposition</p> <ul style="list-style-type: none"> - Identifies types of lines in 2-D images (e.g., parallel, intersecting, perpendicular). - Investigates 2-D shapes that do or do not have parallel and perpendicular lines.
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Correlation of Manitoba Program of Studies with Mathology Grade 5 (Shape and Space: Transformations)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Describe and analyze position and motion of objects and shapes.			
Specific Learning Outcomes 5.SS.7. Perform a single transformation (translation, rotation, or reflection) of a 2-D shape, and draw and describe the image.	Geometry Unit 2A: Transformations 5: Investigating Translations 6: Investigating Reflections 7: Investigating Rotations 8: Identifying Transformations 9: Consolidation of Transformations	Unit 5 Questions 4, 6, 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.
5.SS.8. Identify a single transformation (translation, rotation, or reflection) of 2-D shapes.	Geometry Unit 2A: Transformations 5: Investigating Translations 6: Investigating Reflections 7: Investigating Rotations 8: Identifying Transformations 9: Consolidation of Transformations	Unit 5 Questions 5, 7, 8, 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 Manitoba Program of Studies with Mathology Grade 5 (Statistics and Probability: Data Analysis)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Collect, display, and analyze data to solve problems.			
Specific Learning Outcomes 5.SP.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.
5.SP.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	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).

			<p>- Visually represents two or more data sets (e.g., double bar chart, stacked bar graph, multi-line graph, multi-column table).</p> <p>Reading and interpreting data displays and analyzing variability</p> <p>- Reads and interprets data displays using many-to-one correspondence.</p> <p>Drawing conclusions by making inferences and justifying decisions based on data collected.</p> <p>- Draws conclusions based on data presented.</p> <p>- Interprets the results of data presented graphically from primary (e.g., class survey) and secondary (e.g., online news reports) sources.</p>
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Correlation of Manitoba Program of Studies with Mathology Grade 5 (Statistics and Probability: Chance and Uncertainty)

Curriculum Expectations	Grade 5 Mathology.ca	Mathology Practice Workbook 5	Pearson Canada Grades 4-6 Mathematics Learning Progression
General Learning Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.			
Specific Learning Outcomes 5.SP.3. Describe the likelihood of a single outcome, using words such as <ul style="list-style-type: none"> • impossible • possible • certain 	Data Management Unit 2A: Probability 5: Describing Likelihood of Events 6: Conducting Experiments 7: Designing Experiments 8: Consolidation of Probability	Unit 11 Questions 1, 2, 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).
5.SP.4. Compare the likelihood of two possible outcomes occurring, using words such as <ul style="list-style-type: none"> • less likely • equally likely • more likely 	Data Management Unit 2A: Probability 5: Describing Likelihood of Events 6: Conducting Experiments 7: Designing Experiments 8: Consolidation of Probability	Unit 11 Questions 3, 4, 5, 7, 8, 9 (pp. 67-68, 70-71)	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 - 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

			<p>independent events in an experiment (e.g., flipping a cup, drawing a coloured cube from a bag).</p> <p>- Investigates and calculates the experimental probability (i.e., relative frequency) of simple events (e.g., 3 heads in 5 coin tosses is $\frac{3}{5}$).</p>
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Unit 6: Coding Not required, but recommended

Unit 12: Financial Literacy Not required, but recommended