Mathology Grade 5 Correlation (Number) – Alberta Curriculum

Note: A Readiness Task precedes each unit and determines students' readiness for the upcoming lessons.

Organizing Idea:

Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: How can the infinite nature of place value enhance our insight into number?
Learning Outcome: Students analyze patterns in place value.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
A number expressed with more decimal places is more precise. A zero in the rightmost place of a decimal number does not change the value of the number. There are infinitely many decimal numbers between any two decimal numbers.	Place value symmetry extends infinitely to the left and right of the ones place.	Relate the names of place values that are the same number of places to the left and right of the ones place.	**Number Unit 1: Number Relationships and Place Value** 1: Representing Numbers to 10 000 000 2: Representing Numbers in Different Forms 4: Consolidation **Number Unit 3: Fractions, Decimals, and Ratios** 12: Representing Decimals 15: Consolidation	N/A
		Express numbers within 10 000 000, including decimal numbers to thousandths, using words and numerals.	**Number Unit 1: Number Relationships and Place Value** 1: Representing Numbers to 10 000 000 2: Representing Numbers in Different Forms 4: Consolidation **Number Unit 3: Fractions, Decimals, and Ratios** 12: Representing Decimals 15: Consolidation	Unit 2 Questions 1, 2, 3, 4, 6, 7, 15 (pp. 8-9, 13) Unit 7 Question 6 (p. 44)

		Relate a decimal number to its position on the number line.	**Number Unit 3: Fractions, Decimals, and Ratios** 13: Comparing and Ordering Decimals√ 15: Consolidation	Unit 7 Questions 8, 9 (p. 45)
		Determine a decimal number between any two other decimal numbers	**Number Unit 3: Fractions, Decimals, and Ratios** 13: Comparing and Ordering Decimals 15: Consolidation	Unit 7 Question 8 (p. 45)
		Compare and order numbers, including decimal numbers.	**Number Unit 1: Number Relationships and Place Value** 1: Representing Numbers to 10 000 000 3: Comparing and Rounding Numbers 4: Consolidation **Number Unit 3: Fractions, Decimals, and Ratios** 13: Comparing and Ordering Decimals 15: Consolidation	Unit 2 Questions 8, 10, 11, 15 (pp. 10-11, 13) Unit 7 Questions 8, 9, 12 (pp. 45, 47)
		Express the relationship between two numbers, including decimal numbers, using <, >, or =.	**Number Unit 1: Number Relationships and Place Value** 3: Comparing and Rounding Numbers 4: Consolidation **Number Unit 3: Fractions, Decimals, and Ratios** 13: Comparing and Ordering Decimals 15: Consolidation	Unit 2 Question 9 (p. 10)
		Round numbers, including decimal numbers, to various places according to context.	**Number Unit 1: Number Relationships and Place Value** 3: Comparing and Rounding Numbers 4: Consolidation **Number Unit 3: Fractions, Decimals, and Ratios** 13: Comparing and Ordering Decimals 15: Consolidation	Unit 2 Questions 12, 13, 14, 15 (pp. 12-13) Unit 7 Questions 5, 7, 12 (pp. 44, 47)

Guiding Question: In what ways can the processes of addition and subtraction be articulated? **Learning Outcome:** Students add and subtract within 1 000 000, including decimal numbers to thousandths, using standard algorithms.				
Knowledge	**Understanding**	**Skills & Procedures**	**Mathology Grade 5 Activities**	**Mathology Practice Workbook 5**
Standard algorithms are efficient procedures for addition and subtraction.	Addition and subtraction of numbers with many digits is facilitated by standard algorithms.	Add and subtract numbers, including decimal numbers, using standard algorithms.	**Number Unit 2: Fluency with Addition and Subtraction** 5: Exploring Addition Strategies 6: Exploring Subtraction Strategies 7: Consolidation **Number Unit 5: Operations with Fractions and Decimals** 22: Adding and Subtracting Decimals to Thousandths 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	Unit 3 Questions 4, 5, 6, 7, 8 (pp. 16-19) Unit 9 Questions 4, 5, 12 (pp. 53-54, 57)
		Assess the reasonableness of a sum or difference using estimation.	**Number Unit 2: Fluency with Addition and Subtraction** 5: Exploring Addition Strategies 6: Exploring Subtraction Strategies 7: Consolidation **Number Unit 5: Operations with Fractions and Decimals** 21: Estimating Sums and Differences with Decimals 22: Adding and Subtracting Decimals to Thousandths 24: Consolidation	Unit 2 Question 13 (p. 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)

		Solve problems using addition and subtraction, including problems involving money.	**Number Unit 5: Operations with Fractions and Decimals** 21: Estimating Sums and Differences with Decimals 22: Adding and Subtracting Decimals to Thousandths 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	Unit 3 Questions 5, 6, 7 (pp. 16-18) Unit 9 Question 5 (p. 54) Unit 12 Questions 1, 2, 3, 4 (pp. 72-73)

Guiding Question: In what ways can divisibility characterize natural numbers?
Learning Outcome: Students determine divisibility of natural numbers.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
A divisibility test can be used to determine factors of a natural number. Division by zero is not possible.	A number is divisible by another number if it can be divided with a remainder of 0.	Investigate divisibility by natural numbers to 10, including 0.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 16: Investigating Divisibility Tests 20: Consolidation	Unit 13 Questions 6, 7, 9, 14 (pp. 82-83, 85)
		Generalize divisibility tests for 2, 3, and 5.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 16: Investigating Divisibility Tests 20: Consolidation	N/A
		Determine factors of natural numbers using divisibility tests.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 16: Investigating Divisibility Tests 20: Consolidation	Unit 13 Questions 6, 7, 9, 14 (pp. 82-83, 85)

Guiding Question: In what ways can the processes of multiplication and division be articulated? **Learning Outcome:** Students multiply and divide natural numbers within 100 000, including with standard algorithms.				
Knowledge	**Understanding**	**Skills & Procedures**	**Mathology Grade 5 Activities**	**Mathology Practice Workbook 5**
Multiplication and division of numbers with many digits is facilitated by standard algorithms.	Standard algorithms are efficient procedures for multiplication and division.	Explain the standard algorithms for multiplication and division of natural numbers.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 18: Multiplying Larger Numbers 19: Dividing Larger Numbers 20: Consolidation	N/A
		Multiply up to 3-digit by 2-digit natural numbers using standard algorithms.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 18: Multiplying Larger Numbers 20: Consolidation	Unit 13 Questions 5, 8, 9, 13 (pp. 81-83, 85)
		Divide 3-digit by 1-digit natural numbers using standard algorithms.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 19: Dividing Larger Numbers 20: Consolidation	Unit 13 Questions 6, 7, 9, 14 (pp. 82-83, 85)
		Express a quotient with or without a remainder according to context.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 17: Using Estimation for Multiplication and Division 19: Dividing Larger Numbers 20: Consolidation	Unit 13 Question 9 (p. 83)
		Assess the reasonableness of a product or quotient using estimation.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 17: Using Estimation for Multiplication and Division 18: Multiplying Larger Numbers 19: Dividing Larger Numbers 20: Consolidation	Unit 2 Question 5 (p. 9) Unit 13 Question 3 (p. 81)

		Solve problems using multiplication and division of natural numbers.	**Number Unit 4: Multiplying and Dividing Larger Numbers** 17: Using Estimation for Multiplication and Division 18: Multiplying Larger Numbers 19: Dividing Larger Numbers 20: Consolidation	Unit 13 Questions 4, 8, 9 (pp. 81-83)

Guiding Question: In what ways can fractions communicate numbers greater than one? **Learning Outcome:** Students interpret improper fractions.				
Knowledge	**Understanding**	**Skills & Procedures**	**Mathology Grade 5 Activities**	**Mathology Practice Workbook 5**
A fraction can represent quantities greater than one. An improper fraction has a numerator that is greater than its denominator. Natural numbers can be expressed as improper fractions with a denominator of 1.	Fractions allow counting and measuring between whole quantities. Improper fractions and mixed numbers that represent the same number are associated with the same point on the number line.	Relate fractions, improper fractions, and mixed numbers to their positions on the number line.	**Number Unit 3: Fractions, Decimals, and Ratios** 9: Exploring Different Representations of Fractions 10: Exploring Improper Fractions and Mixed Numbers 15: Consolidation	Unit 7 Questions 8, 9 (p. 45)
		Count beyond 1 using fractions with the same denominator.	**Number Unit 3: Fractions, Decimals, and Ratios** 8: Counting by Unit Fractions 9: Exploring Different Representations of Fractions 10: Exploring Improper Fractions and Mixed Numbers 15: Consolidation	N/A

A mixed number of the form $A\frac{b}{c}$, composed of a number of wholes, A, and a fractional part, $\frac{b}{c}$, can represent an improper fraction.		Model fractions, including improper fractions and mixed numbers, using quantities, lengths, and areas.	**Number Unit 3: Fractions, Decimals, and Ratios** 9: Exploring Different Representations of Fractions 10: Exploring Improper Fractions and Mixed Numbers 15: Consolidation	Unit 7 Questions 1, 2, 3, 8, 9 (pp. 42-43, 45)
		Express improper fractions and mixed numbers symbolically.	**Number Unit 3: Fractions, Decimals, and Ratios** 9: Exploring Different Representations of Fractions 10: Exploring Improper Fractions and Mixed Numbers 15: Consolidation	Unit 7 Questions 4, 8, 9, 12 (pp. 43, 45, 47)
		Express an improper fraction as a mixed number and vice versa.	**Number Unit 3: Fractions, Decimals, and Ratios** 10: Exploring Improper Fractions and Mixed Numbers 15: Consolidation	Unit 7 Questions 4, 8, 9, 12 (pp. 43, 45, 47)
		Compare fractions, including improper fractions and mixed numbers, to benchmarks of 0, $\frac{1}{2}$, and 1.	**Number Unit 3: Fractions, Decimals, and Ratios** 11: Comparing and Ordering Fractions 15: Consolidation	Unit 7 Question 9 (p. 45)

Guiding Question: How can the composition of fractions facilitate operating with fractions?
Learning Outcome: Students add and subtract fractions with common denominators.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
Fractions with common denominators can be composed or decomposed to model the change in a quantity of unit fractions. Addition and subtraction of fractions with common denominators does not change the unit fraction from which they are composed. Fractions greater than one can be added or subtracted as mixed numbers or improper fractions.	Fractions with common denominators are multiples of the same unit fraction. Properties for addition and subtraction of natural numbers apply to fractions.	Investigate the composition and decomposition of a quantity within 1 using unit fractions.	**Number Unit 3: Fractions, Decimals, and Ratios** 8: Counting by Unit Fractions **Number Unit 5: Operations with Fractions and Decimals** 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	Unit 9 Question 6 (p. 54)
		Express the composition or decomposition of fractions with common denominators as a sum or difference.	**Number Unit 3: Fractions, Decimals, and Ratios** 8: Counting by Unit Fractions **Number Unit 5: Operations with Fractions and Decimals** 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	Unit 9 Question 7 (p. 55)
		Compare strategies for adding or subtracting improper fractions to strategies for adding or subtracting mixed numbers.	**Number Unit 5: Operations with Fractions and Decimals** 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	N/A
		Add and subtract fractions with common denominators within 100, including improper fractions and mixed numbers.	**Number Unit 5: Operations with Fractions and Decimals** 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	Unit 9 Questions 6, 7, 8, 12 (pp. 54-55, 57)

		Solve problems requiring addition and subtraction of fractions with common denominators, including improper fractions and mixed numbers.	**Number Unit 5: Operations with Fractions and Decimals** 23: Adding and Subtracting Fractions with Like Denominators 24: Consolidation	Unit 9 Questions 6, 8 (pp. 54-55)

Guiding Question: How can ratios provide new ways to relate numbers? **Learning Outcome:** Students employ ratios to represent relationships between quantities.				
Knowledge	**Understanding**	**Skills & Procedures**	**Mathology Grade 5 Activities**	**Mathology Practice Workbook 5**
A ratio can express part-part or part-whole relationships between two countable or measurable quantities. A ratio can be expressed with a fraction or with a colon. A percentage represents a part-whole ratio that compares a quantity to 100.	A ratio is a comparison of two quantities in a specific situation. Fractions, decimals, ratios, and percentages can represent the same part-whole relationship.	Express part-part ratios and part-whole ratios of the same whole to describe various situations.	**Number Unit 3: Fractions, Decimals, and Ratios** 14: Exploring Ratios 15: Consolidation	Unit 13 Questions 11, 12 (p. 84)
		Express, symbolically, the same part-whole relationship as a ratio, fraction, decimal, and percentage.	**Number Unit 3: Fractions, Decimals, and Ratios** 14: Exploring Ratios 15: Consolidation	Unit 7 Question 10 (p. 46)

Mathology Grade 5 Correlation (Algebra) – Alberta Curriculum

Organizing Idea:
Algebra: Equations express relationships between quantities.

Guiding Question: How can expressions enhance communication of number?
Learning Outcome: Students interpret numerical and algebraic expressions.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
Numerical expressions with multiple operations may include parentheses to group numbers and operations. The conventional order of operations includes performing operations in parentheses before other operations.	Numerical expressions represent a quantity of known value. Parentheses change the order of operations in a numerical expression.	Evaluate numerical expressions involving addition or subtraction in parentheses according to the order of operations.	**Patterning Unit 2: Variables and Equations** 4: The Order of Operations 10: Consolidation	Unit 16 Question 7 (p. 101)
Expressions that include variables are called algebraic expressions. A variable can be interpreted as a specific unknown value and is represented symbolically with a letter.	Algebraic expressions use variables to represent quantities of unknown value. Algebraic expressions may be composed of one algebraic term or the sum of algebraic and constant terms.	Relate repeated addition of a variable to the product of a number and a variable.	**Patterning Unit 2: Variables and Equations** 5: Using Variables 10: Consolidation	Unit 16 Questions 1, 4 (pp. 99-100)
		Express the product of a number and a variable using a coefficient.	**Patterning Unit 2: Variables and Equations** 5: Using Variables 10: Consolidation	Unit 16 Questions 1, 2, 6, 7, 9, 10 (pp. 99, 101-102)

Products with variables are expressed without the multiplication sign. Quotients with variables are expressed using fraction notation. An algebraic term is the product of a number, called a coefficient, and a variable. A constant term is a number. A variable can be replaced by a given number in order to evaluate an expression.		Express the quotient of a variable and a number as a fraction.	**Patterning Unit 2: Variables and Equations** 7: Solving Multiplication and Division Equations 10: Consolidation	Unit 16 Questions 1, 7 (pp. 99, 101)
		Recognize a product with a variable, a quotient with a variable, or a number as a single term.	**Patterning Unit 2: Variables and Equations** 5: Using Variables 10: Consolidation	Unit 16 Questions 1, 2, 3, 4, 7, 13 (pp. 99-101, 104)
		Write an algebraic expression involving one or two terms to describe an unknown value.	**Patterning Unit 2: Variables and Equations** 5: Using Variables 8: Using Equations to Solve Problems 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Question 1 (p. 99)
		Evaluate an algebraic expression by substituting a given number for the variable.	**Patterning Unit 1: Patterns and Relations** 2: Investigating Numeric Sequences 3: Consolidation **Patterning Unit 2: Variables and Equations** 5: Using Variables 8: Using Equations to Solve Problems 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Question 1 (p. 99)

The process of applying inverse operations can be used to solve an equation. The value of the variable obtained by solving an equation is the solution.	Equality is preserved by applying inverse operations to algebraic expressions on each side of an equation. The expressions on each side of an equation will be equal when evaluated using the correct solution.	Write equations involving one or two operations to represent a situation.	**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 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Questions 2, 5, 6, 7, 8, 9, 10 (pp. 99-102)
		Investigate order of operations when performing inverse operations on both sides of an equation.	**Patterning Unit 2: Variables and Equations** 6: Solving Addition and Subtraction Equations 7: Solving Multiplication and Division Equations 8: Using Equations to Solve Problems 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Questions 3, 7, 8, 9, 10, 13 (pp. 100-102, 104)
		Apply inverse operations to solve an equation, limited to equations with one or two operations.	**Patterning Unit 2: Variables and Equations** 6: Solving Addition and Subtraction Equations 7: Solving Multiplication and Division Equations 8: Using Equations to Solve Problems 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Questions 3, 7, 8, 9, 10, 13 (pp. 100-102, 104)

		Verify the solution to an equation by evaluating expressions on each side of the equation.	**Patterning Unit 2: Variables and Equations** 6: Solving Addition and Subtraction Equations 7: Solving Multiplication and Division Equations 8: Using Equations to Solve Problems 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Questions 3, 8, 10, 13 (pp. 100-102, 104)
		Solve problems using equations, limited to equations with one or two operations.	**Patterning Unit 2: Variables and Equations** 4: The Order of Operations 6: Solving Addition and Subtraction Equations 7: Solving Multiplication and Division Equations 8: Using Equations to Solve Problems 9: Using Equations with Two Operations to Solve Problems 10: Consolidation	Unit 16 Questions 6, 8, 9, 10 (pp. 101-102)

Mathology Grade 5 Correlation (Geometry) – Alberta Curriculum

Organizing Idea:
Geometry: Shapes are defined and related by geometric attributes

Guiding Question: In what ways might symmetry characterize shape?
Learning Outcome: Students investigate symmetry as a geometric property.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
A 2-D shape has reflection symmetry if there is a straight line over which the shape reflects and the two halves exactly match. A 3-D shape has reflection symmetry if there is a plane over which the shape reflects and the two halves exactly match. A 2-D shape has rotation symmetry if it exactly overlaps itself one or more times within a rotation of less than 360° around its centre point. Order of rotation symmetry describes the number of times a shape coincides with itself within	Symmetry is a property of shapes. Symmetry can be created and can occur in nature.	Recognize symmetry in nature.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 1: Recognizing Symmetry in First Nations Designs 5: Coding and Rotation Symmetry 6: Consolidation	N/A
		Recognize symmetry in First Nations, Métis, and Inuit designs.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 1: Recognizing Symmetry in First Nations Designs	N/A
		Investigate symmetry in familiar 2-D and 3-D shapes using hands-on materials or digital applications.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 2: Understanding Line Symmetry 5: Coding and Rotation Symmetry 6: Consolidation	Unit 4 Questions 1, 2, 3, 4, 10 (pp. 22-24, 27)

a rotation of 360° around its centre point. Central symmetry is the rotational symmetry by 180°. The straight line that connects a point with its image in the central symmetry passes through the centre of rotation. Symmetry can be found in First Nations, Métis, and Inuit designs, such as: • basket weaving • Wampum belts • quilts • First Nations beadwork, Inuit beadwork, or Métis floral beadwork • architecture such as tipis or longhouses		Show the line of symmetry of a 2-D shape.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 2: Understanding Line Symmetry 6: Consolidation	Unit 4 Questions 3, 10 (pp. 23, 27)
		Describe the order of rotation symmetry of a 2-D shape.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 3. Investigating Reflection and Rotation Symmetry 5: Coding and Rotation Symmetry 6: Consolidation	Unit 4 Questions 1, 2, 10 (pp. 22-23, 27)
In a regular polygon, the number of sides equals the number of reflection symmetries and the number of rotation symmetries. A circle has infinitely many reflection and rotation symmetries.	Symmetry is related to other geometric properties.	Compare the number of reflection and rotation symmetries of a 2-D shape to the number of equal sides and angles.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 3. Investigating Reflection and Rotation Symmetry 5: Coding and Rotation Symmetry 6: Consolidation	N/A
		Classify 2-D shapes according to the number of reflection or rotation symmetries.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 3. Investigating Reflection and Rotation Symmetry 5: Coding and Rotation Symmetry 6: Consolidation	Unit 4 Questions 1, 10 (pp. 22, 27)

Mathology Grade 5 Correlation (Coordinate Geometry) – Alberta Curriculum

Organizing Idea:

Coordinate Geometry: Location and movement of objects in space can be communicated using a coordinate grid.

Guiding Question: How can location enhance the ways in which space is defined?
Learning Outcome: Students relate location to position on a grid.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
Coordinate grids use coordinates to indicate the location of the point where the vertical and horizontal grid lines intersect. Coordinates are ordered pairs of numbers in which the first number indicates the distance from the vertical axis and the second number indicates the distance from the horizontal axis. Positional language includes • left • right • up • down	Location can describe the position of shapes in space. Location can be described precisely using a coordinate grid.	Locate a point on a coordinate grid given the coordinates of the point.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 4: Plotting and Reading Coordinates 6: Consolidation	Unit 5 Questions 2, 11 (pp. 29, 34)
		Describe the location of a point on a coordinate grid using coordinates.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 4: Plotting and Reading Coordinates 6: Consolidation	Unit 5 Questions 1, 3, 11 (pp. 28-29, 34)
		Describe the location of a point on a coordinate grid in relation to the location of another point using positional language.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 4: Plotting and Reading Coordinates 6: Consolidation	N/A
		Model a polygon on a coordinate grid using coordinates to indicate the vertices.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 4: Plotting and Reading Coordinates 6: Consolidation	Unit 5 Questions 3, 11 (pp. 29, 34)

		Describe the location of the vertices of a polygon on a coordinate grid using coordinates.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 4: Plotting and Reading Coordinates 6: Consolidation	Unit 5 Questions 3, 11 (pp. 29, 34)

Mathology Grade 5 Correlation (Measurement) – Alberta Curriculum

Organizing Idea:
Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.

Guiding Question: In what ways can area be communicated? **Learning Outcome:** Students estimate and calculate area using standard units.				
Knowledge	**Understanding**	**Skills & Procedures**	**Mathology Grade 5 Activities**	**Mathology Practice Workbook 5**
Area is expressed in the following standard units, derived from standard units of length: • square centimetres • square metres • square kilometres A square centimetre (cm^2) is an area equivalent to the area of a square measuring 1 centimetre by 1 centimetre.	Area can be expressed in various units according to context and desired precision. Rectangles with the same area can have different perimeters.	Relate a centimetre to a square centimetre.	**Measurement Unit 1: Area and Perimeter** 2: Exploring the Relationships among Metric Units of Area 4: Consolidation	Unit 14 Questions 5, 7, 8, 11, 12 (pp. 87, 89, 91-92)
		Relate a metre to a square metre.	**Measurement Unit 1: Area and Perimeter** 1: Estimating and Measuring Area in Square Metres 2: Exploring the Relationships among Metric Units of Area 4: Consolidation	Unit 14 Questions 5, 7, 9 (pp. 87, 89-90)
		Relate a square centimetre to a square metre.	**Measurement Unit 1: Area and Perimeter** 2: Exploring the Relationships among Metric Units of Area 4: Consolidation	Unit 14 Questions 5, 7 (pp. 88-89)

A square metre (m^2) is an area equivalent to the area of a square measuring 1 metre by 1 metre. A square kilometre (km^2) is an area equivalent to the area of a square measuring 1 kilometre by 1 kilometre. Among all rectangles with the same area, the square has the least perimeter.		Express the relationship between square centimetres, square metres, and square kilometres.	**Measurement Unit 1: Area and Perimeter** 2: Exploring the Relationships among Metric Units of Area 4: Consolidation	N/A
		Justify the choice of square centimetres, square metres, or square kilometres as appropriate units to express various areas.	**Measurement Unit 1: Area and Perimeter** 2: Exploring the Relationships among Metric Units of Area 4: Consolidation	Unit 14 Question 7 (p. 89)
		Estimate an area by comparing to a benchmark of a square centimetre or square metre.	**Measurement Unit 1: Area and Perimeter** 1: Estimating and Measuring Area in Square Metres 2: Exploring the Relationships among Metric Units of Area 4: Consolidation	N/A
		Express the area of a rectangle using standard units given the lengths of its sides.	**Measurement Unit 1: Area and Perimeter** 1: Estimating and Measuring Area in Square Metres 4: Consolidation	Unit 14 Question 8 (p. 89)
		Compare the perimeters of various rectangles with the same area.	**Measurement Unit 1: Area and Perimeter** 3: Relating Perimeter and Area of Rectangles 4: Consolidation	Unit 14 Question 8 (p. 89)

		Describe the rectangle with the least perimeter for a given area.	**Measurement Unit 1: Area and Perimeter** 3: Relating Perimeter and Area of Rectangles 4: Consolidation	N/A
		Solve problems involving perimeter and area of rectangles.	**Measurement Unit 1: Area and Perimeter** 3: Relating Perimeter and Area of Rectangles 4: Consolidation	Unit 14 Questions 5, 6, 8, 9, 12 (pp. 87-90, 92)

Mathology Grade 5 Correlation (Patterns) – Alberta Curriculum

Organizing Idea:

Patterns: Awareness of patterns supports problem solving in various situations.

Guiding Question: How might representation of a sequence provide insight into change?
Learning Outcome: Students relate terms to position within an arithmetic sequence.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
A table of values representing an arithmetic sequence lists the position in the first column or row and the corresponding term in the second column or row. Points representing an arithmetic sequence on a coordinate grid fit on a straight line. An algebraic expression can describe the relationship between the positions and terms of an arithmetic sequence.	Each term of an arithmetic sequence corresponds to a natural number indicating position in the sequence.	Represent one-to-one correspondence between positions and terms of an arithmetic sequence in a table of values and on a coordinate grid.	**Patterning Unit 1: Patterns and Relations** 1: Investigating Visual Sequences 2: Investigating Numeric Sequences 3: Consolidation	Unit 1 Questions 2, 7, 8, 10 (pp. 2, 5-7)
		Describe the graph of an arithmetic sequence as a straight line.	**Patterning Unit 1: Patterns and Relations** 1: Investigating Visual Sequences 2: Investigating Numeric Sequences 3: Consolidation	Unit 1 Questions 2, 7, 10 (pp. 3, 5, 7)
		Describe a rule, limited to one operation, that expresses correspondence between positions and terms of an arithmetic sequence.	**Patterning Unit 1: Patterns and Relations** 1: Investigating Visual Sequences 2: Investigating Numeric Sequences 3: Consolidation	Unit 1 Questions 1, 2, 4, 5, 6, 8, 10 (pp. 2-7)

		Write an algebraic expression, limited to one operation, that represents correspondence between positions and terms of an arithmetic sequence.	**Patterning Unit 1: Patterns and Relations** 1: Investigating Visual Sequences 2: Investigating Numeric Sequences 3: Consolidation	Unit 1 Questions 3, 8, 9, 10 (pp. 4, 6-7)
		Determine the missing term in an arithmetic sequence that corresponds to a given position.	**Patterning Unit 1: Patterns and Relations** 1: Investigating Visual Sequences 2: Investigating Numeric Sequences 3: Consolidation	Unit 1 Question 6 (p. 5)
		Solve problems involving an arithmetic sequence.	**Patterning Unit 1: Patterns and Relations** 1: Investigating Visual Sequences 2: Investigating Numeric Sequences 3: Consolidation	Unit 1 Questions 6, 7, 8 (pp. 5-6)

Mathology Grade 5 Correlation (Statistics) – Alberta Curriculum

Organizing Idea:
Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

Guiding Question: How might frequency bring meaning to data? **Learning Outcome:** Students analyze frequency in categorical data.				
Knowledge	**Understanding**	**Skills & Procedures**	**Mathology Grade 5 Activities**	**Mathology Practice Workbook 5**
Frequency can be compared across categories to answer statistical questions. The mode is the category with the highest frequency.	Frequency is a count of categorized data, but it is not the data value itself.	Examine categorized data in tables and graphs.	**Data Unit 1: Data Management** 2: Investigating Frequency of Data 4: Interpreting Data 5: Consolidation	Unit 10 Questions 1, 2, 5 (pp. 60-62)
		Determine frequency for each category of a set of data by counting individual data points.	**Data Unit 1: Data Management** 2: Investigating Frequency of Data 4: Interpreting Data 5: Consolidation	Unit 10 Questions 1, 2 (pp. 60-61)
		Identify the mode in various representations of data.	**Data Unit 1: Data Management** 2: Investigating Frequency of Data 5: Consolidation	Unit 10 Question 6 (p. 63)
		Recognize data sets with no mode, one mode, or multiple modes.	**Data Unit 1: Data Management** 2: Investigating Frequency of Data 5: Consolidation	Unit 10 Question 6 (p. 63)

		Justify possible answers to a statistical question using mode.	**Data Unit 1: Data Management** 2: Investigating Frequency of Data 4: Interpreting Data 5: Consolidation	Unit 10 Questions 6, 8 (pp. 63, 65)
Data can be collected by asking closed-list and open-ended questions. Closed-list questions provide a list of possible responses to choose from. Open-ended questions allow any response. Responses can be categorized in various ways. Representations of frequency can include • bar graphs • dot plots • stem-and-leaf plots	Frequency can be a count of categorized responses to a question. Frequency can be used to summarize data. Frequency can be represented in various forms.	Discuss potential categories for open-ended questions and closed-list questions in relation to the same statistical question.	**Data Unit 1: Data Management** 1: Formulating Questions to Collect Data 5: Consolidation	N/A
		Formulate closed-list questions to collect data to answer a statistical question.	**Data Unit 1: Data Management** 1: Formulating Questions to Collect Data 5: Consolidation	N/A
		Categorize data that was collected using closed-list questions.	**Data Unit 1: Data Management** 1: Formulating Questions to Collect Data 5: Consolidation	N/A
		Organize counts of categorized data in a frequency table.	**Data Unit 1: Data Management** 1: Formulating Questions to Collect Data 2: Investigating Frequency of Data 5: Consolidation	Unit 10 Questions 1, 2 (pp. 60-61)
		Create various representations of data, including with technology, to interpret frequency.	**Data Unit 1: Data Management** 3: Representing Data 5: Consolidation	Unit 10 Questions 4, 5 (pp. 62-63)

Pearson mathology

Mathology Grade 5 Correlation (Financial Literacy) – Alberta Curriculum

Organizing Idea:
Financial Literacy: Informed financial decision making contributes to the well-being of individuals, groups and communities.

Guiding Question: In what ways can financial goals be supported?
Learning Outcome: Students demonstrate how planning can support financial goals.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
A budget is a plan that supports an individual when making decisions on how to earn, spend, save, invest, and donate over a period. A budget consists of money currently on-hand (assets), money expected to be earned (income), and money planned on spending (expenses). A budget can be divided into needs and wants.	Budgeting is important to responsible financial decision making and can support achieving short-term and long-term financial goals.	Develop a simple budget for an activity or event.	**Number Unit 6: Financial Literacy** 25: Designing a Simple Budget 28: Consolidation	Unit 12 Questions 9, 10, 11 (p. 76)
		Examine the components of a budget.	**Number Unit 6: Financial Literacy** 25: Designing a Simple Budget 28: Consolidation	Unit 12 Question 11 (p. 76)
		Create a savings plan for short-term and long-term goals.	**Number Unit 6: Financial Literacy** 26: Planning for Financial Goals 28: Consolidation	Unit 12 Question 10 (p. 76)

Budgets can be used for a variety of situations, such as • personal • household • business • event or activity Budgets may need to be adjusted due to unforeseen circumstances. Short-term financial goals can be immediate and can support attainment of long-term goals. Long-term financial goals can take several years to achieve, involve more money, and require commitment.				
A consumer is an individual who purchases goods and services. Factors that can influence consumer choice include • marketing • advertising • media • availability • trends • price	When purchasing goods and services, individuals have the ability to make choices.	Examine factors that influence consumer choice.	**Number Unit 6: Financial Literacy** 27: Factors Influencing Consumer Choices 28: Consolidation	N/A

Mathology Grade 5 Correlation (Computer Science) – Alberta Curriculum

Organizing Idea:
Computer Science: Problem solving and scientific inquiry are developed through the knowledgeable application of creativity, design, and computational thinking.

Guiding Question: In what ways can design be used to help achieve desired outcomes or purposes?
Learning Outcome: Students apply design processes when creating artifacts that can be used by a human or machine to address a need.

Knowledge	Understanding	Skills & Procedures	Mathology Grade 5 Activities	Mathology Practice Workbook 5
A computational artifact is anything created by a human using a computer, such as • computer programs and code • images • audio • video • presentations • web pages Design can be used to create algorithms and translate them into code.	Design can be used by humans or machines to meet needs.	Engage in the design process to create computational artifacts. Relate a block of code to an outcome or a behaviour. Explain what will happen when single or multiple blocks of code are executed. Translate a given algorithm to code using a visual block-based language. Design an algorithm that includes a loop and translate it into code.	**Geometry Unit 1: 2-D Shapes and Coordinate Grids** 5: Coding and Rotation Symmetry	Unit 6 Questions 1, 2, 3, 5, 6, 7 (pp. 35-39)

Code is any language that can be understood by and run on a computer. There are many ways to code, including using visual block-based languages. Visual block-based languages are a form of code in which prepared chunks of instructions are in drag-and-drop blocks that fit together like puzzle pieces to design a program. A computer cannot think for itself and must rely on code for all that it does. A loop is a repetition of instructions used in an algorithm.				