Mathology Grade 2 Correlation (Number) – Alberta

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

Guiding Question: How can quantity contribute to a sense of number?
Learning Outcome: Students analyze quantity to 1000.

Knowledge	Understanding	Skills & Procedures	Grade 2 Mathology	Mathology Little Books	Pearson Canada Grades K–3 Mathematics Learning Progression
Any number of objects in a set can be represented by a natural number: 0, 1, 2, 3.... The values of the places in a four-digit natural number are thousands, hundreds, tens, and ones. Places that have no value within a given number use zero as a placeholder. The number line is a spatial representation of quantity.	There are infinitely many natural numbers. Every digit in a natural number has a value based on its place. Each natural number is associated with exactly one point on the number line.	Represent quantities using words and natural numbers.	**Number Cluster 2: Number Relationships 1** 7: Odd and Even Numbers **Number Cluster 3: Place Value** 9: Building Numbers 10: Representing Numbers in Different Ways 11: What's the Number? **Number Math Every Day** 2: Guess My Number	Ways to Count	**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Adds/removes object(s) to make a set equal to a given set. - Knows what number is one or two more and one or two less than another number. - Orders three or more quantities using sets and/or numerals. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes and decomposes three-digit numbers using ones, tens, and hundreds.
		Identify the digits representing thousands, hundreds, tens, and ones based on place in a natural number.	**Number Cluster 2: Number Relationships 1** 7: Odd and Even Numbers **Number Cluster 3: Place Value** 9: Building Numbers 10: Representing Numbers in Different Ways 11: What's the Number? **Number Math Every Day** 3A: Adding Ten 3A: Taking Away Ten 3B: Thinking Tens 3B: Describe Me	Ways to Count	**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Adds/removes object(s) to make a set equal to a given set. - Knows what number is one or two more and one or two less than another number. - Orders three or more quantities using sets and/or numerals. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes and decomposes three-digit numbers using ones, tens, and hundreds.

		Relate a number, including zero, to its position on the number line.	**Number Cluster 3: Place Value** 12: Making a Number Line **Number Math Every Day** 2: Building an Open Number Line 5A: Which Ten is Nearer?		**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Determines 10 more/less than a given number without counting. **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s).
A quantity can be skip counted in various ways according to context. Quantities of money can be skip counted in amounts that are represented by coins and bills (denominations).	A quantity can be interpreted as a composition of groups.	Decompose quantities into groups of 100s, 10s, and 1s.	**Number Cluster 3: Place Value** 9: Building Numbers 10: Representing Numbers in Different Ways 11: What's the Number 13: Consolidation **Number Cluster 6: Conceptualizing Addition and Subtraction** 25: Visualizing 100 with Groups of 10	Family Fun Day (numbers to 100) Back to Batoche (numbers to 100) The Money Jar (numbers to 100) <u>Grade 3</u> Fantastic Journeys (numbers to 1000) Finding Buster (numbers to 1000) How Numbers Work (3-digit numbers)	**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Orders three or more quantities using sets and/or numerals. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes and decomposes three-digit numbers using ones, tens, and hundreds. **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Models and symbolizes addition and subtraction problem types (i.e., join, separate, part-part-whole, and compare). **Developing Fluency of Addition and Subtraction Computation** - Fluently recalls complements to 100 (e.g., 64 + 36; 73 + 27).
		Count within 1000, forward and backward by 1s, starting at any number.	**Number Cluster 1: Counting** 1: Counting to 1000 4: Consolidation **Number Intervention** 1: Skip-Counting with Objects	Ways to Count (numbers to 100) Family Fun Day (numbers to 100) What Would You Rather? (numbers to 100) <u>Grade 3</u> Fantastic Journeys (numbers to 1000) Finding Buster (numbers to 1000) How Numbers Work (3-digit numbers)	**Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Uses number patterns to bridge hundreds when counting forward and backward (e.g., 399, 400, 401). **Recognizing and Writing Numerals** - Names, writes, and matches two-digit numerals to quantities.

		Skip count by 20s, 25s, or 50s, starting at 0.	**Number Cluster 1: Counting** 2: Skip-Counting Forward **Number Math Every Day** 1A: Skip-Counting on a Hundred Chart 1B: Skip-Counting with Actions 1B: What's Wrong? What's Missing? *Link to other strands:* ***Patterning Intervention*** *3: Skip-Counting* *4: Repeated Addition and Subtraction*	Ways to Count (numbers to 100) Family Fun Day (numbers to 100) What Would You Rather? (numbers to 100) <u>Grade 3</u> Fantastic Journeys (numbers to 1000) Finding Buster (numbers to 1000)	**Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number (e.g., finding the value of a collection of dimes). **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities and Comparing Units to the Whole** - Partitions into and skip-counts by equal-sized units and recognizes that the results will be the same when counted by ones (e.g., counting a set by 1s or by 5s gives the same result).
		Skip count by 2s and 10s, starting at any number.	**Number Cluster 1: Counting** 3: Skip-Counting Flexibly 4: Consolidation **Number Math Every Day** 1A: Skip-Counting on a Hundred Chart 1A: Skip-Counting from Any Number 1B: Skip-Counting with Actions 1B: What's Wrong? What's Missing? **Number Intervention** 1: Skip-Counting with Objects *Link to other strands:* ***Patterning Intervention*** *3: Skip-Counting* *4: Repeated Addition and Subtraction*	Ways to Count (numbers to 100) Family Fun Day (numbers to 100) What Would You Rather? (numbers to 100)	**Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number (e.g., finding the value of a collection of dimes). **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities and Comparing Units to the Whole** - Partitions into and skip-counts by equal-sized units and recognizes that the results will be the same when counted by ones (e.g., counting a set by 1s or by 5s gives the same result).
		Determine the value of a collection of coins or bills of the same denomination by skip counting.	**Number Cluster 9: Financial Literacy** 41: Estimating Money **Number Math Every Day** 8B: Collections of Coins		**Big Idea: Numbers are related in many ways.** **Estimating Quantities and Numbers** - Uses relevant benchmarks to compare and estimate quantities (e.g., more/less than 10). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.**

			8B: Showing Money in Different Ways **Number Intervention** 13: Counting Coins		**Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s).
An even quantity will have no remainder when partitioned into two equal groups or groups of two. An odd quantity will have a remainder of one when partitioned into two equal groups or groups of two.	All natural numbers are either even or odd.	Model even and odd quantities by sharing and grouping.	**Number Cluster 2: Number Relationships 1** 7: Odd and Even Numbers		**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Adds/removes object(s) to make a set equal to a given set. - Knows what number is one or two more and one or two less than another number.
		Describe a quantity as even or odd.	**Number Cluster 2: Number Relationships 1** 7: Odd and Even Numbers		**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Adds/removes object(s) to make a set equal to a given set. - Knows what number is one or two more and one or two less than another number.
		Partition a set of objects by sharing or grouping, with or without remainders.	**Number Cluster 4: Early Fractional Thinking** 19: Partitioning Sets **Number Cluster 8: Early Multiplicative Thinking** 37: Grouping in 2s, 5s, and 10s 38: Making Equal Shares 39: Making Equal Groups 40: Consolidation **Number Math Every Day** 8A: Counting Equal Groups to Find How Many 8A: How Many Blocks? **Number Intervention** 11: How Many Do You See? 12: Messy and Organize It	Array's Bakery Marbles, Alleys, Mibs, and Guli!	**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning Quantities to Form Fractions** - Partitions wholes (e.g., intervals, sets) into equal parts and names the unit fractions. **Unitizing Quantities and Comparing Units to the Whole** - Recognizes that, for a given quantity, increasing the number of sets decreases the number of objects in each set. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities and Comparing Units to the Whole** - Partitions into and skip-counts by equal-sized units and recognizes that the results will be the same when counted by ones (e.g., counting a set by 1s or by 5s gives the same result). **Big Idea: Quantities and numbers can be grouped by, and partitioned into, units to determine how many or how much.** **Developing Conceptual Meaning of Multiplication and Division** - Groups objects in 2s, 5s, and 10s. - Models and solves equal sharing problems to 100. - Models and solves equal grouping problems to 100.
A benchmark is a known quantity to which another quantity can be compared.	A quantity can be estimated when an exact count is not needed.	Estimate quantities using benchmarks.	**Number Cluster 5: Number Relationships 2** 21: Benchmarks on a Number Line **Number Cluster 2: Number Relationships 1** 5: Estimating Quantities	Family Fun Day Ways to Count What Would you Rather?	**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Compares and orders quantities and written numbers using benchmarks (e.g., comparing values of coins and bills). - Orders three or more quantities using sets and/or numerals. **Estimating Quantities and Numbers** - Uses relevant benchmarks to compare and estimate quantities (e.g., more/less than 10).

			6: Comparing and Ordering Quantities **Number Cluster 9: Financial Literacy** 41: Estimating Money **Number Math Every Day** 5A: Which Ten is Nearer?		- Uses relevant benchmarks (e.g., multiples of 10) to compare and estimate quantities. **Big Idea: Numbers tell us how many and how much.** **Recognizing and Writing Numerals** - Names, writes, and matches three-digit numerals to quantities. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes and decomposes three-digit numbers using ones, tens, and hundreds. **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s).
Words that can describe a comparison between two unequal quantities include • not equal • greater than • less than The less than sign, <, and the greater than sign, >, are used to indicate inequality between two quantities. Equality and inequality can be modelled using a balance.	Inequality is an imbalance between two quantities.	Model equality and inequality between two quantities, including with a balance.	*Link to Other Strands:* ***Patterning Cluster 3: Equality and Inequality*** *14: Equal and Unequal Sets* *15: Equal or Not Equal?* *16: Exploring Number Sentences* *18: Consolidation* ***Patterning Math Every Day*** *2A: Equal or Not Equal?* ***Patterning Intervention*** *5: Exploring 10* *6: Balancing Sets*	Nutty and Wolfy	**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** - Models and describes equality (balance; the same as) and inequality (imbalance; not the same as). **Using Symbols, Unknowns, and Variables to Represent Mathematical Relations** - Understands and uses the equal (=) and not equal (≠) symbols when comparing expressions. - Understands and uses the “greater than” (>) and “less than” (<) symbols when comparing expressions. **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Uses symbols and equations to represent addition and subtraction situations.
		Compare and order natural numbers.	**Number Cluster 2: Number Relationships 1** 5: Estimating Quantities 6: Comparing and Ordering Quantities **Number Intervention** 2: Comparing Quantities	Back to Batoche The Great Dogsled Race Ways to Count	**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Orders three or more quantities using sets and/or numerals. **Estimating Quantities and Numbers** - Uses relevant benchmarks (e.g., multiples of 10) to compare and estimate quantities. **Big Idea: Numbers tell us how many and how much.** **Recognizing and Writing Numerals**

					- Names, writes, and matches three-digit numerals to quantities. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes and decomposes three-digit numbers using ones, tens, and hundreds.
		Describe a quantity as less than, greater than, or equal to another quantity.	**Number Cluster 2: Number Relationships** 5: Estimating Quantities 6: Comparing and Ordering Quantities *Link to other strands:* ***Patterning Cluster 3: Equality and Inequality*** *15: Equal or Not Equal?* *16: Exploring Number Sentences*	Kokum's Bannock Back to Batoche	**Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Orders three or more quantities using sets and/or numerals. **Estimating Quantities and Numbers** - Uses relevant benchmarks (e.g., multiples of 10) to compare and estimate quantities. **Big Idea: Numbers tell us how many and how much.** **Recognizing and Writing Numerals** - Names, writes, and matches three-digit numerals to quantities. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes and decomposes three-digit numbers using ones, tens, and hundreds. **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Using Symbols, Unknowns, and Variables to Represent Mathematical Relations** - Understands and uses the equal (=) and not equal (≠) symbols when comparing expressions. - Understands and uses the "greater than" (>) and "less than" (<) symbols when comparing expressions. **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Uses symbols and equations to represent addition and subtraction situations.

Guiding Question: How can addition and subtraction be interpreted? **Learning Outcome:** Students investigate addition and subtraction within 100.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson Canada Grades K–3 Mathematics Learning Progression**
The order in which more than two numbers are added does not affect the sum (associative property).	A sum can be composed in multiple ways.	Visualize 100 as a composition of multiples of 10 in various ways.	**Number Cluster 6: Conceptualizing Addition and Subtraction** 25: Visualizing 100 with Groups of 10	Ways to Count	**Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Models and symbolizes addition and subtraction problem types (i.e., join, separate, part-part-whole, and compare). **Developing Fluency of Addition and Subtraction Computation** - Fluently recalls complements to 100 (e.g., 64 + 36; 73 + 27).
		Compose a sum in multiple ways, including with more than two addends.	**Number Cluster 5: Number Relationships 2** 22: Decomposing 100 23: Jumping on the Number Line 24: Consolidation **Number Cluster 6: Conceptualizing Addition and Subtraction** 26: Exploring Properties 27: Exploring the Associative Property **Number Math Every Day** 5A: Building Numbers 5B: How Many Ways? **Number Intervention** 6: Making 20 *Link to other strands:* ***Patterning Math Every Day*** *2A: How Many Ways?* *2B: Which One Doesn't Belong?*	Paddling the River Family Fun Day A Class Full of Projects Kokum's Bannock The Money Jar	**Big Idea: Numbers are related in many ways.** **Decomposing Wholes into Parts and Composing Wholes from Parts** - Composes two- and three-digit numbers from parts, and decomposes two- and three-digit numbers into parts (e.g., 14 and 14 is 28; 28 is 20 and 8; showing $200 using different coins and bills). **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)** - Writes, reads, composes, and decomposes two-digit numbers as units of tens and leftover ones. **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Uses symbols and equations to represent addition and subtraction situations. **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** - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).
Familiar addition and subtraction number facts facilitate addition and subtraction strategies.	Addition and subtraction can represent the sum or difference of countable quantities or measurable lengths.	Recall and apply addition number facts, with addends to 10, and related subtraction number facts.	**Number Cluster 7: Operational Fluency** 33: Using Doubles 34: Mastering Addition and Subtraction Facts 36: Consolidation **Number Math Every Day**	A Class-full of Projects Array's Bakery Marbles, Alleys, Mibs, and Guli! The Great Dogsled Race The Money Jar	**Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Fluency of Addition and Subtraction Computation** - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). - Fluently adds and subtracts with quantities to 20. **Developing Conceptual Meaning of Addition and Subtraction**

Addition and subtraction strategies for two-digit numbers include making multiples of ten and using doubles.			7A: Doubles and Near-Doubles 7B: Make 10 Sequences **Number Intervention** 7: Adding and Subtracting to 20 9: Making 10 10: Finding Doubles *Link to other strands:* ***Patterning Intervention*** *5: Exploring 10*	Family Fun Day	- Uses properties of addition and subtraction to solve problems (e.g., adding or subtracting 0, commutativity of addition). **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** - Decomposes and combines numbers in equations to make them easier to solve (e.g., 8 + 5 = 3 + 5 + 5).
		Investigate strategies for addition and subtraction of two-digit numbers.	**Number Cluster 7: Operational Fluency** 35: Multi-Digit Fluency		**Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Fluency of Addition and Subtraction Computation** - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers (e.g., calculating the change required for a simple cash transaction). - Estimates sums and differences of multi-digit numbers (e.g., estimating change). **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** - Investigates addition and subtraction as inverse operations.
		Add numbers up to a sum of 100 and subtract numbers with a maximum minuend of 100 Verify a sum or difference using inverse operations. Determine a missing quantity in a sum or difference, within 100, in a variety of ways.	**Number Cluster 7: Operational Fluency** 35: Multi-Digit Fluency 36: Consolidation *Link to other strands:* ***Patterning Cluster 2: Increasing/Decreasing Patterns*** *7: Increasing Patterns 1* ***Patterning Cluster 3: Equality and Inequality*** *17: Missing Numbers* **Number Math Every Day** 3A: Adding Ten 3A: Taking Away Ten 5B: What's the Unknown Part? 7A: I Have… I Need… 7B: Hungry Bird	A Class-full of Projects Array's Bakery Marbles, Alleys, Mibs, and Guli!	**Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Fluency of Addition and Subtraction Computation** - Fluently adds and subtracts with quantities to 20. - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers (e.g., calculating the change required for a simple cash transaction). - Estimates sums and differences of multi-digit numbers (e.g., estimating change). **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** - Investigates addition and subtraction as inverse operations. **Using Symbols, Unknowns, and Variables to Represent Mathematical Relations** - Solves for an unknown value in a one-step addition and subtraction problem (e.g., $n + 5 = 15$).

			Number Intervention 3: Adding Tens 4: Taking Away Tens		**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends non-numeric increasing/decreasing patterns (e.g., jump-clap; jump-clap-clap; jump-clap-clap-clap, etc.).
		Solve problems using addition and subtraction of countable quantities or measurable lengths.	**Number Cluster 6: Conceptualizing Addition and Subtraction** 27: Exploring the Associative Property 28: Solving Problems 1 29: Solving Problems 2 30: Solving Problems 3 31: Solving Problems 4 32: Consolidation **Number Cluster 9: Financial Literacy** 41: Estimating Money 42: Earning Money 43: Spending Money 44: Saving Regularly 45: Money to $100 **Number Math Every Day** 6: What Math Do You See? 6: What Could the Story Be? **Number Intervention** 7: Adding and Subtracting to 20 8: Solving Story Problems	Array's Bakery The Great Dogsled Race The Money Jar Family Fun Day	**Big Idea: Numbers are related in many ways.** **Decomposing Wholes into Parts and Composing Wholes from Parts** - Composes two- and three-digit numbers from parts, and decomposes two- and three-digit numbers into parts (e.g., 14 and 14 is 28; 28 is 20 and 8; showing $200 using different coins and bills). **Estimating Quantities and Numbers** - Uses relevant benchmarks to compare and estimate quantities (e.g., more/less than 10). **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** - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition). **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Uses symbols and equations to represent addition and subtraction situations. - Models and symbolizes addition and subtraction problem types (i.e., join, separate, part-part-whole, and compare). **Developing Fluency of Addition and Subtraction Computation** - Extends known sums and differences to solve other equations (e.g., using 5 + 5 to add 5 + 6). - Fluently adds and subtracts with quantities to 20. - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers (e.g., calculating the change required for a simple cash transaction). - Estimates sums and differences of multi-digit numbers (e.g., estimating change). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s).

					Big Idea: Numbers tell us how many and how much. **Applying the Principles of Counting** - Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number (e.g., finding the value of a collection of dimes). - Fluently skip-counts by factors of 100 (e.g., 20, 25, 50) and multiples of 100 from any given number.
Guiding Question: In what ways can parts compose a whole? **Learning Outcome:** Students interpret part-whole relationships using unit fractions.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson Canada Grades K–3 Mathematics Learning Progression**
A whole can be a whole set of objects, or a whole object, that can be partitioned into a number of equal parts. The whole can be any size and is designated by context. A unit fraction describes any one of the equal parts that compose a whole.	Fractions can represent part-to-whole relationships. One whole can be interpreted as a number of unit fractions.	Model a unit fraction by partitioning a whole object or whole set into equal parts, limited to 10 or fewer equal parts.	**Number Cluster 4: Early Fractional Thinking** 14: Equal Parts 19: Partitioning Sets 20: Consolidation **Number Math Every Day** 4: Modelling Fraction Amounts 4: Naming Equal Parts **Number Intervention** 5: Naming Fractional Amounts	The Best Birthday <u>Grade 3</u> Hockey Homework	**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning Quantities to Form Fractions** - Partitions wholes (e.g., intervals, sets) into equal parts and names the unit fractions. - Relates the size of parts to the number of equal parts in a whole (e.g., a whole cut into 2 equal pieces has larger parts than a whole cut into 3 equal pieces).
		Compare different unit fractions of the same whole, limited to denominators of 10 or less.	**Number Cluster 4: Early Fractional Thinking** 15: Comparing Fractions 1 16: Comparing Fractions 2	The Best Birthday <u>Grade 3</u> Hockey Homework	**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning Quantities to Form Fractions** - Relates the size of parts to the number of equal parts in a whole (e.g., a whole cut into 2 equal pieces has larger parts than a whole cut into 3 equal pieces). - Compares unit fractions to determine relative size.
		Compare the same unit fractions of different wholes, limited to denominators of 10 or less.	**Number Cluster 4: Early Fractional Thinking** 17: Comparing Unit Fractions of Different Wholes	<u>Grade 3</u> Hockey Homework	**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning Quantities to Form Fractions** - Compares unit fractions to determine relative size.
		Model one whole, using a given unit fraction, limited to denominators of 10 or less.	**Number Cluster 4: Early Fractional Thinking** 18: Modelling One Whole with Unit Fractions		**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning Quantities to Form Fractions** - Relates the size of parts to the number of equal parts in a whole (e.g., a whole cut into 2 equal pieces has larger parts than a whole cut into 3 equal pieces).

Mathology Grade 2 Correlation (Geometry) – Alberta

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

Guiding Question: How can shape influence perception of space? **Learning Outcome:** Students analyze and explain geometric attributes of shape.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson Canada Grades K–3 Mathematics Learning Progression**
Common geometric attributes include • sides • vertices • faces or surfaces Two-dimensional shapes may have sides that are line segments. Three-dimensional shapes may have faces that are two-dimensional shapes.	Shapes are defined according to geometric attributes. A shape can be visualized as a composition of other shapes.	Sort shapes according to two geometric attributes and describe the sorting rule.	**Geometry Cluster 1: 2-D Shapes** 1: Sorting 2-D Shapes 2: Exploring 2-D Shapes 3: Consolidation **Geometry Cluster 2: 3-D Solids** 4: Sorting 3-D Solids 5: 3-D Solids Around Us 6: Consolidation **Geometry Math Every Day** 1: Comparing Shapes 2B: Which Solid Does Not Belong? 2B: Solids Around Us **Geometry Intervention** 1: Sorting Shapes 2: Analyzing 2-D Shapes 3: Sorting Solids 4: Attributes of Solids	I Spy Awesome Buildings Sharing Our Stories	**Big Idea: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes.** **Investigating Geometric Attributes and Properties of 2-D Shapes and 3-D Solids** - Identifies 2-D shapes in 3-D objects in the environment. - Analyzes geometric attributes of 2-D shapes and 3-D solids (e.g., number of sides/edges, faces, corners). - Classifies and names 2-D shapes and 3-D solids based on common attributes. **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (e.g., Number of Sides, Shape, Size)** - Records and symbolizes attributes in different ways (e.g., using drawings, words, letters). - Sorts a set of objects based on two attributes (e.g., uses an if-else statement to sort objects: if more than 3 vertices, not a triangle).

		Relate the faces of three-dimensional shapes to two-dimensional shapes.	**Geometry Cluster 2: 3-D Solids** 4: Sorting 3-D Solids 5: 3-D Solids Around Us 6: Consolidation **Geometry Cluster 3: Geometric Relationships** 8: Describing Solids **Geometry Math Every Day** 2A: What Do You See? 2B: Solids Around Us 2B: Which Solid Does Not Belong? 3B: Name the Solid	I Spy Awesome Buildings Sharing Our Stories	**Big Idea: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes.** **Investigating Geometric Attributes and Properties of 2-D Shapes and 3-D Solids** - Identifies 2-D shapes in 3-D objects in the environment. - Analyzes geometric attributes of 2-D shapes and 3-D solids (e.g., number of sides/edges, faces, corners). **Investigating 2-D Shapes, 3-D Solids, and Their Attributes Through Composition and Decomposition** - Constructs composite pictures or structures with 2-D shapes and 3-D solids. **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (e.g., Number of Sides, Shape, Size)** - Records and symbolizes attributes in different ways (e.g., using drawings, words, letters). - Sorts a set of objects based on two attributes (e.g., uses an if-else statement to sort objects: if more than 3 vertices, not a triangle).
		Create a picture or design with shapes from verbal instructions, visualization, or memory.	**Geometry Cluster 3: Geometric Relationships** 7: Making Shapes 8: Describing Solids 9: Visualizing Shapes and Solids 10: Creating Pictures and Designs 11: Covering Outlines 12: Creating Symmetrical Designs 15. Consolidation **Geometry Math Every Day** 1: Visualizing Shapes 2A: Geometry in Poetry 3A: Fill Me In! 3A: Make me a Picture 3B: Draw the Shape **Geometry Intervention** 5: Covering Outlines 6: Describing Solids	I Spy Awesome Buildings Sharing Our Stories	**Big Idea: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes.** **Investigating 2-D Shapes, 3-D Solids, and Their Attributes Through Composition and Decomposition** - Constructs composite pictures or structures with 2-D shapes and 3-D solids. - Constructs and identifies new 2-D shapes and 3-D solids as a composite of other 2-D shapes and 3-D solids. - Completes a picture outline with shapes in more than one way. - Constructs composite 2-D shapes and 3-D solids from verbal instructions, visualization, and memory. **Investigating Geometric Attributes and Properties of 2-D Shapes and 3-D Solids** - Analyzes geometric attributes of 2-D shapes and 3-D solids (e.g., number of sides/edges, faces, corners). **Big Idea: 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** - Constructs and completes 2-D/3-D symmetrical designs.

A shape can change orientation or position through slides (translations), turns (rotations), or flips (reflections). Shapes can be turned or flipped in the creation of art.	Geometric attributes do not change when a shape is translated, rotated, or reflected.	Investigate translation, rotation, and reflection of two- and three-dimensional shapes.	**Geometry Cluster 3: Geometric Relationships** 12: Creating Symmetrical Designs 13: Exploring Transformations 14: Slides, Flips, and Turns in Artwork		**Big Idea: 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** - Constructs and completes 2-D/3-D symmetrical designs. **Exploring 2-D Shapes and 3-D Solids by Applying and Visualizing Transformations** - Identifies congruent 2-D shapes and 3-D solids through visualizing transformations. - Predicts (visualizes) and describes the transformation (i.e., rotation, reflection, translation) needed to match two congruent shapes.
		Describe geometric attributes of two- and three-dimensional shapes in various orientations.	**Geometry Cluster 1: 2-D Shapes** 1: Sorting 2-D Shapes **Geometry Cluster 2: 3-D Solids** 4: Sorting 3-D Solids **Geometry Math Every Day** 2A: What Do You See? 2B: Solids Around Us **Geometry Intervention** 3: Sorting Solids 4: Attributes of Solids	Grade 1 The Tailor Shop	**Big Idea: 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes.** **Investigating Geometric Attributes and Properties of 2-D Shapes and 3-D Solids** - Analyzes geometric attributes of 2-D shapes and 3-D solids (e.g., number of sides/edges, faces, corners). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)** - Sorts a set of objects based on two attributes (e.g., uses an if-else statement to sort objects: if more than 3 vertices, not a triangle).
		Recognize the translation, rotation, or reflection of shapes represented in artwork.	**Geometry Cluster 3: Geometric Relationships** 14: Slides, Flips, and Turns in Artwork	Sharing Our Stories	**Big Idea: 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 congruent 2-D shapes and 3-D solids through visualizing transformations.

Mathology Grade 2 Correlation (Measurement) – Alberta

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

Guiding Question: How can length contribute to interpretations of space? **Learning Outcome:** Students communicate length using units.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson Canada Grades K–3 Mathematics Learning Progression**
Tiling is the process of measuring a length by using many copies of a unit without gaps or overlaps. Iterating is the process of measuring a length by repeating one copy of a unit without gaps or overlaps. The unit can be chosen based on the length to be measured. Length can be measured with non-standard units or standard units. Non-standard units found in nature can be	Length is quantified by measurement. Length is measured with equal-sized units that themselves have length. The number of units required to measure a length is inversely related to the size of the unit.	Measure length with non-standard units by tiling, iterating, or using a self-created measuring tool.	**Measurement Cluster 1: Length** 1: Measuring Length 1 2: Measuring Length 2 3: Measurement Distance Around 6: First Nations, Métis, and Inuit Use of Land to Estimate Length 7: Consolidation **Measurement Math Every Day** 1A: Estimation Scavenger Hunt 1A: Estimation Station **Measurement Intervention** 1: Exploring Length 2: Iterating the Unit	Getting Ready for School The Discovery <u>Grade 1</u> The Amazing Seed	**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Non-standard Units to Estimate, Measure, and Make Comparisons** - Uses whole number measures to estimate, measure, and compare (e.g., this book is 8 cubes long and my pencil is 5 cubes long). - Demonstrates ways to estimate, measure, compare, and order objects by length, area, capacity, and mass with non-standard units by • using an intermediary object • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate non-standard units to estimate, measure, and compare length, area, capacity, and mass. - Uses non-standard units as referents to estimate length (e.g., paper clips), area (e.g., square tiles), mass (e.g., cubes), and capacity (e.g., cups). **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Demonstrates ways to estimate, measure, compare, and order objects by length, perimeter, area, capacity, and mass with standard units by • using an intermediary object of a known measure

used to measure length on the land. Standard units, such as centimetres, can enable a common language around measurement.					• using multiple copies of a unit • iterating a single unit - Selects and uses appropriate standard units to estimate, measure, and compare length, perimeter, area, capacity, mass, and time. - Uses the measurement of familiar objects as benchmarks to estimate another measure in standard units (e.g., doorknob is 1 m from the ground; room temperature is 21°C). **Understanding Relationships Among Measurement Units** - Understands the inverse relationship between the size of the unit and the number of units (length, area, capacity, and mass). **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** - Understands that some things have more than one attribute that can be measured (e.g., an object can have both length and mass). - Understands conservation of length (e.g., a string is the same length when straight and not straight), capacity (e.g., two differently shaped containers may hold the same amount), and area (e.g., two surfaces of different shapes can have the same area). - Extends understanding of length to other linear measurements (e.g., height, width, distance around). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Says the number name sequence forward through the teen numbers.
		Compare and order measurements of different lengths measured with the same non-standard units and explain the choice of unit.	**Measurement Cluster 1: Length** 2: Measuring Length 2 3: Measuring Distance Around **Measurement Math Every Day** 1B: Which Unit?	Getting Ready for School The Discovery	**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Demonstrates ways to estimate, measure, compare, and order objects by length, perimeter, area, capacity, and mass with standard units by • using an intermediary object of a known measure • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate standard units to estimate, measure, and compare length, perimeter, area, capacity, mass, and time.

					- Uses the measurement of familiar objects as benchmarks to estimate another measure in standard units (e.g., doorknob is 1 m from the ground; room temperature is 21°C). **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** - Understands that some things have more than one attribute that can be measured (e.g., an object can have both length and mass). - Understands conservation of length (e.g., a string is the same length when straight and not straight), capacity (e.g., two differently shaped containers may hold the same amount), and area (e.g., two surfaces of different shapes can have the same area). - Extends understanding of length to other linear measurements (e.g., height, width, distance around). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Says the number name sequence forward through the teen numbers.
		Compare measurements of the same length measured with different non-standard units.	**Measurement Cluster 1: Length** 1: Measuring Length 1 7: Consolidation	The Discovery <u>Grade 1</u> Animal Measures	**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Uses whole number measures to estimate, measure, and compare (e.g., this book is 8 cubes long and my pencil is 5 cubes long). - Demonstrates ways to estimate, measure, compare, and order objects by length, area, capacity, and mass with non-standard units by • using an intermediary object • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate non-standard units to estimate, measure, and compare length, area, capacity, and mass. - Uses non-standard units as referents to estimate length (e.g., paper clips), area (e.g., square tiles), mass (e.g., cubes), and capacity (e.g., cups). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Says the number name sequence forward through the teen numbers.

		Measure length with standard units by tiling or iterating with a centimetre.	**Measurement Cluster 1: Length** 5: Using a Centicube Ruler		**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Uses whole number measures to estimate, measure, and compare (e.g., this book is 8 cubes long and my pencil is 5 cubes long). - Demonstrates ways to estimate, measure, compare, and order objects by length, area, capacity, and mass with non-standard units by • using an intermediary object • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate non-standard units to estimate, measure, and compare length, area, capacity, and mass. - Uses non-standard units as referents to estimate length (e.g., paper clips), area (e.g., square tiles), mass (e.g., cubes), and capacity (e.g., cups). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Says the number name sequence backward from numbers to 10. - Knows that the last counting word tells "how many" objects in a set (i.e., cardinality).
		Compare and order measurements of different lengths measured with centimetres.	**Measurement Cluster 1: Length** 5: Using a Centicube Ruler		**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Uses whole number measures to estimate, measure, and compare (e.g., this book is 8 cubes long and my pencil is 5 cubes long). - Demonstrates ways to estimate, measure, compare, and order objects by length, area, capacity, and mass with non-standard units by • using an intermediary object • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate non-standard units to estimate, measure, and compare length, area, capacity, and mass. - Uses non-standard units as referents to estimate length (e.g., paper clips), area (e.g., square tiles), mass (e.g., cubes), and capacity (e.g., cups).

					Big Idea: Numbers tell us how many and how much. **Applying the Principles of Counting** - Says the number name sequence backward from numbers to 10. - Knows that the last counting word tells "how many" objects in a set (i.e., cardinality).
A referent is a personal or familiar representation of a known length. A common referent from the land or body parts can be used to measure length.	Length can be estimated when a measuring tool is not available.	Identify referents for a centimetre.	**Measurement Cluster 1: Length** 4: Benchmarks and Estimation		**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Demonstrates ways to estimate, measure, compare, and order objects by length, perimeter, area, capacity, and mass with standard units by • using an intermediary object of a known measure • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate standard units to estimate, measure, and compare length, perimeter, area, capacity, mass, and time. - Uses the measurement of familiar objects as benchmarks to estimate another measure in standard units (e.g., doorknob is 1 m from the ground; room temperature is 21°C). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Says the number name sequence forward through the teen numbers.
		Estimate length by visualizing the iteration of a referent for a centimetre.	**Measurement Cluster 1: Length** 4: Benchmarks and Estimation **Measurement Math Every Day** 1A: Estimation Station 1B: What Am I?	Getting Ready for School	**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Selecting and Using Standard Units to Estimate, Measure, and Make Comparisons** - Demonstrates ways to estimate, measure, compare, and order objects by length, perimeter, area, capacity, and mass with standard units by • using an intermediary object of a known measure • using multiple copies of a unit • iterating a single unit - Selects and uses appropriate standard units to estimate, measure, and compare length, perimeter, area, capacity, mass, and time. - Uses the measurement of familiar objects as benchmarks to estimate another measure in standard units (e.g., doorknob is 1 m from the ground; room temperature is 21°C).

					Big Idea: Numbers tell us how many and how much. **Applying the Principles of Counting** - Says the number name sequence forward through the teen numbers.
		Investigate First Nations, Métis, or Inuit use of the land in estimations of length.	**Measurement Cluster 1: Length** 6: First Nations, Métis, and Inuit Use of Land to Estimate Length		**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Understanding Relationships Among Measurement Units** - Understands the inverse relationship between the size of the unit and the number of units (length, area, capacity, and mass).

Mathology Grade 2 Correlation (Patterns) – Alberta

Organizing Idea:
Awareness of patterns supports problem solving in various situations.

Guiding Question: How can patterns characterize change?
Learning Outcome: Students explain and analyze patterns in a variety of contexts.

Knowledge	Understanding	Skills & Procedures	Grade 2 Mathology	Mathology Little Books	Pearson Canada Grades K–3 Mathematics Learning Progression
Change can be an increase or a decrease in the number and size of elements. A hundreds chart is an arrangement of natural numbers that illustrates multiple patterns. Patterns can be found and created in cultural designs.	A pattern can show increasing or decreasing change. A pattern is more evident when the elements are represented, organized, aligned, or oriented in familiar ways.	Describe non-repeating patterns encountered in surroundings, including in art, architecture, cultural designs, and nature.	*Link to other strands:* ***Measurement Cluster 2: Time*** *13: First Nations Winter Counts* ***Geometry Cluster 3: Geometric Relationships*** *14: Slides, Flips, and Turns in Artwork* **Patterning Math Every Day** 1: Patterns Around Us	Pattern Quest The Best Surprise	**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** - Explores measurement of visible attributes (e.g., length, capacity, area) and non-visible attributes (e.g., mass, time, temperature). - Uses language to describe attributes (e.g., long, tall, short, wide, heavy). **Big Idea: 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 congruent 2-D shapes and 3-D solids through visualizing transformations.
		Investigate patterns in a hundreds chart.	**Patterning Cluster 1: Repeating Patterns** 2: Finding Patterns *Link to other strands:* ***Number Cluster 3: Place Value*** *12: Making a Number Line* **Patterning Intervention** 3: Skip-Counting		**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s). **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing Quantities into Ones, Tens, and Hundreds (Place-Value Concepts)**

					- Determines 10 more/less than a given number without counting.
		Create increasing patterns using sounds, objects, pictures, or actions.	**Patterning Cluster 2: Increasing/Decreasing Patterns** 7: Increasing Patterns 1 8: Increasing Patterns 2 9: Reproducing Patterns 10: Creating Patterns 11: Errors and Missing Terms 12: Solving Problems 13: Consolidation **Patterning Math Every Day** 1A: Show Another Way 1A: Patterns Around Us 1B: How Many Can We Make? 1B: Error Hunt **Patterning Intervention** 3: Skip-Counting 4: Repeated Addition and Subtraction	The Best Surprise	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends non-numeric increasing/decreasing patterns (e.g., jump-clap; jump-clap-clap; jump-clap-clap-clap, etc.). - Identifies, reproduces, and extends increasing/decreasing patterns concretely, pictorially, and numerically using repeated addition or subtraction. - Extends number patterns and finds missing elements (e.g., 1, 3, 5, __, 9, …). - Creates an increasing/decreasing pattern (concretely, pictorially, and/or numerically) and explains the pattern rule. **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Fluency of Addition and Subtraction Computation** - Fluently adds and subtracts with quantities to 20.
Attributes of elements, such as size and colour, can contribute to a pattern.	A pattern core can vary in complexity.	Create and express a repeating pattern with a pattern core of up to four elements that change by more than one attribute.	**Patterning Cluster 1: Repeating Patterns** 1: Exploring Patterns 3: Extending and Predicting 4: Error and Missing Elements 5: Combining Attributes 6: Consolidation **Patterning Math Every Day** 1A: Show Another Way 1A: Patterns Around Us **Patterning Intervention** 1: Finding the Core 2: Representing Patterns	Pattern Quest	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Reproducing, Extending, and Creating Patterns That Repeat** - Predicts missing element(s) and corrects errors in repeating patterns. - Recognizes similarities and differences between patterns. - Reproduces, creates, and extends repeating patterns based on copies of the repeating unit (core). - Recognizes, extends, and creates repeating patterns based on two or more attributes (e.g., shape and orientation).

Mathology Grade 2 Correlation (Time) – Alberta

Organizing Idea:
Duration is described and quantified by time.

Guiding Question: How can duration support interpretation of time? **Learning Outcome:** Students relate duration to time.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson Canada Grades K–3 Mathematics Learning Progression**
Events can be related to calendar dates. Duration can be described using comparative language such as longer or shorter. Duration can be measured in non-standard units, including events, natural cycles, or personal referents. Winter counts are First Nations symbolic calendars that record oral traditions and significant events.	Time can be communicated in various ways. Duration is the measure of an amount of time from beginning to end.	Express significant events using calendar dates.	**Measurement Cluster 2: Time** 8: Days and Weeks **Measurement Math Every Day** 2: Calendar Questions 2: Monthly Mix-Up		**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Understanding Relationships Among Measurement Units** - Understands relationship of units of length (mm, cm, m), mass (g, kg), capacity (mL, L), and time (e.g., seconds, minutes, hours). **Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Uses ordinal numbers in context (e.g., days on a calendar: the 3rd of March).
		Describe the duration between or until significant events using comparative language.	**Measurement Cluster 2: Time** 11: Duration of Time 12: Measuring the Duration of Time	Grade 3 Goat Island	**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** - Explores measurement of visible attributes (e.g., length, capacity, area) and non-visible attributes (e.g., mass, time, temperature). **Big Idea: Numbers are related in many ways.** **Estimating Quantities and Numbers** - Uses relevant benchmarks to compare and estimate quantities (e.g., more/less than 10).
		Describe the duration of events	**Measurement Cluster 2: Time** 10: Measuring Time	Getting Ready for School	**Big Idea: Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared.**

		using non-standard units.	11: Duration of Time 12: Measuring the Duration of Time	Grade 3 Goat Island	**Understanding Attributes That Can Be Measured** - Explores measurement of visible attributes (e.g., length, capacity, area) and non-visible attributes (e.g., mass, time, temperature). **Big Idea: Numbers are related in many ways.** **Estimating Quantities and Numbers** - Uses relevant benchmarks to compare and estimate quantities (e.g., more/less than 10). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Says the number name sequence forward through the teen numbers.
		Relate First Nations' winter counts to duration.	**Measurement Cluster 2: Time** 13: First Nations Winter Counts		**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** - Explores measurement of visible attributes (e.g., length, capacity, area) and non-visible attributes (e.g., mass, time, temperature). - Uses language to describe attributes (e.g., long, tall, short, wide, heavy).
Time can be described using standard units.	Duration is quantified by measurement.	Describe the relationship between days, weeks, months, and years.	**Measurement Cluster 2: Time** 8: Days and Weeks 9: Months in a Year 14: Consolidation **Measurement Intervention** 3: Months of the Year	Grade 3 Goat Island	**Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Understanding Relationships Among Measurement Units** - Understands relationship of units of length (mm, cm, m), mass (g, kg), capacity (mL, L), and time (e.g., seconds, minutes, hours). **Big Idea: Numbers are related in many ways.** **Comparing and Ordering Quantities (Multitude or Magnitude)** - Uses ordinal numbers in context (e.g., days on a calendar: the 3rd of March).
		Describe the duration between or until significant events using standard units of time.	**Measurement Cluster 2: Time** 12: Measuring the Duration of Time 14: Consolidation		**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** - Explores measurement of visible attributes (e.g., length, capacity, area) and non-visible attributes (e.g., mass, time, temperature). **Big Idea: Numbers are related in many ways.** **Estimating Quantities and Numbers** - Uses relevant benchmarks to compare and estimate quantities (e.g., more/less than 10).

Mathology Grade 2 Correlation (Statistics) – Alberta

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

Guiding Question: How can data inform representation? **Learning Outcome:** Students relate data to a variety of representations.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson Canada Grades K–3 Mathematics Learning Progression**
Data can be collected by asking questions. First-hand data is data collected by the person using the data.	Data can be collected to answer questions.	Generate questions for a specific investigation within the learning environment.	**Data Cluster 1: Data Management** 3: Creating a Survey 5: Making Graphs 2 7: Consolidation	Marsh Watch	**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** - Collects data from simple surveys concretely (e.g., shoes, popsicle sticks) or using simple records (e.g., check marks, tallies). **Creating Graphical Displays of Collected Data** - Creates displays using objects or simple pictographs (may use symbol for data). - Organizes display so categories are ordered by frequency. - Creates one-to-one displays (e.g., line plot, dot plot, bar graph). - Displays data collected in more than one way and describes the differences (e.g., bar graph, pictograph). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)** - Sorts a set of objects in different ways using a single attribute (e.g., buttons sorted by the number of holes or by shape).
		Collect first-hand data by questioning people	**Data Cluster 1: Data Management** 3: Creating a Survey	Marsh Watch Big Buddy Days	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphical displays help us**

		within the learning environment.	5: Making Graphs 2 6: Representing Data Through First Nations, Metis, and Inuit Stories **Data Math Every Day** 1: Conducting Surveys		**understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Collecting Data and Organizing It into Categories** - Collects data from simple surveys concretely (e.g., shoes, popsicle sticks) or using simple records (e.g., check marks, tallies). **Creating Graphical Displays of Collected Data** - Creates displays using objects or simple pictographs (may use symbol for data). - Organizes display so categories are ordered by frequency. - Creates one-to-one displays (e.g., line plot, dot plot, bar graph). - Displays data collected in more than one way and describes the differences (e.g., bar graph, pictograph). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)** - Sorts a set of objects in different ways using a single attribute (e.g., buttons sorted by the number of holes or by shape).
Data can be recorded using tally marks, words, or counts. Data can be expressed through First Nations, Métis, or Inuit stories. A graph includes features such as • a title • a legend • axes • axis labels	Data can be represented in various ways.	Record data in a table.	**Data Cluster 1: Data Management** 3: Creating a Survey 5: Making Graphs 2 7: Consolidation	Marsh Watch Big Buddy Days	**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** - Collects data from simple surveys concretely (e.g., shoes, popsicle sticks) or using simple records (e.g., check marks, tallies). **Creating Graphical Displays of Collected Data** - Creates displays using objects or simple pictographs (may use symbol for data). - Organizes display so categories are ordered by frequency. - Creates one-to-one displays (e.g., line plot, dot plot, bar graph). - Displays data collected in more than one way and describes the differences (e.g., bar graph, pictograph). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)**

Data can be represented with graphs such as • pictographs • bar graphs • dot plots					- Sorts a set of objects in different ways using a single attribute (e.g., buttons sorted by the number of holes or by shape).
		Construct graphs to represent data.	**Data Cluster 1: Data Management** 4: Making Graphs 1 5: Making Graphs 2 7: Consolidation **Data Intervention** 2: Sorting Objects	Marsh Watch Big Buddy Days	**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** - Creates displays using objects or simple pictographs (may use symbol for data). - Organizes display so categories are ordered by frequency. - Creates one-to-one displays (e.g., line plot, dot plot, bar graph). - Displays data collected in more than one way and describes the differences (e.g., bar graph, pictograph). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)** - Sorts a set of objects in different ways using a single attribute (e.g., buttons sorted by the number of holes or by shape).
		Interpret graphs to answer questions.	**Data Cluster 1: Data Management** 1: Interpreting Graphs 1 4: Making Graphs 1 5: Making Graphs 2 **Data Math Every Day** 1: Reading and Interpreting Graphs **Data Intervention** 1: Interpreting Pictographs	Marsh Watch Big Buddy Days	**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** - Creates displays using objects or simple pictographs (may use symbol for data). - Organizes display so categories are ordered by frequency. - Creates one-to-one displays (e.g., line plot, dot plot, bar graph). - Displays data collected in more than one way and describes the differences (e.g., bar graph, pictograph). **Drawing Conclusions by Making Inferences and Justifying Decisions Based on Data Collected** - Poses and answers questions about data collected and displayed. **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)**

					- Sorts a set of objects in different ways using a single attribute (e.g., buttons sorted by the number of holes or by shape).
		Compare the features of pictographs, dot plots, and bar graphs.	**Data Cluster 1: Data Management** 2: Interpreting Graphs 2 5: Making Graphs 2 7: Consolidation **Data Math Every Day** 1: Reading and Interpreting Graphs	Marsh Watch	**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** - Creates displays using objects or simple pictographs (may use symbol for data). - Organizes display so categories are ordered by frequency. - Creates one-to-one displays (e.g., line plot, dot plot, bar graph). - Displays data collected in more than one way and describes the differences (e.g., bar graph, pictograph). **Drawing Conclusions by Making Inferences and Justifying Decisions Based on Data Collected** - Poses and answers questions about data collected and displayed. **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, Sorting, and Classifying Attributes and Patterns Mathematically (E.g., Number of Sides, Shape, Size)** - Sorts a set of objects in different ways using a single attribute (e.g., buttons sorted by the number of holes or by shape).

Mathology Grade 2 Correlation (Financial Literacy) – Alberta

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

Guiding Question: How does decision making influence money management? **Learning Outcome:** Students relate money and decision making.					
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 2 Mathology**	**Mathology Little Books**	**Pearson K–3 Learning Progression**
Decisions about money include how much to • spend • save • share Individuals can have a limited amount of money to spend. Money spent on one item means less money for other items or activities. Individuals can save money for an item, an event, or the future. Individuals can donate money through charities, organizations, and agencies to help others or support a cause.	Managing money involves making decisions. Decisions related to money are based on needs and wants.	Distinguish between a paying job and volunteer work.	**Number Cluster 9: Financial Literacy** 42: Earning Money		**Big Idea: Numbers are related in many ways.** **Decomposing Wholes into Parts and Composing Wholes from Parts** - Composes two- and three-digit numbers from parts, and decomposes two- and three-digit numbers into parts (e.g., 14 and 14 is 28; 28 is 20 and 8; showing $200 using different coins and bills). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s).
		Describe how money can be divided for different purposes.	**Number Cluster 9: Financial Literacy** 43: Spending Money 44: Saving Regularly **Financial Literacy Intervention** 14: Wants and Needs	The Money Jar	**Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Uses symbols and equations to represent addition and subtraction situations. **Developing Fluency of Addition and Subtraction Computation** - Fluently adds and subtracts with quantities to 20. - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers (e.g., calculating the change required for a simple cash transaction).

Money can be earned in exchange for work that is done or goods and services that are provided. Responsible decision making involves spending money on needs before wants.					- Estimates sums and differences of multi-digit numbers (e.g., estimating change). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number (e.g., finding the value of a collection of dimes).
		Practice making money-related decisions in a variety of contexts.	**Number Cluster 9: Financial Literacy** 42: Earning Money 43: Spending Money 44: Saving Regularly 46: Consolidation		**Big Idea: Numbers are related in many ways.** **Decomposing Wholes into Parts and Composing Wholes from Parts** - Composes two- and three-digit numbers from parts, and decomposes two- and three-digit numbers into parts (e.g., 14 and 14 is 28; 28 is 20 and 8; showing $200 using different coins and bills). **Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and Generalizing Increasing/Decreasing Patterns** - Identifies and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s). **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.** **Developing Conceptual Meaning of Addition and Subtraction** - Uses symbols and equations to represent addition and subtraction situations. **Developing Fluency of Addition and Subtraction Computation** - Fluently adds and subtracts with quantities to 20. - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers (e.g., calculating the change required for a simple cash transaction). - Estimates sums and differences of multi-digit numbers (e.g., estimating change). **Big Idea: Numbers tell us how many and how much.** **Applying the Principles of Counting** - Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number (e.g., finding the value of a collection of dimes).