Mathology 2 Correlation (Number) – Ontario

Overall Expectation **A1. Social-Emotional Learning (SEL) Skills and the Mathematical Processes**
Mathology provides teachers with a flexible framework to support the development of students' Social-Emotional Learning: ○ By using diverse resources that represent a variety of students in real-world contexts, students can see themselves and others while positively engaging in mathematics ○ By providing differentiated support that allows students to cope with challenges, start at a level that works for them, and build from there ○ By providing students with opportunities to learn by way of different approaches, through the use of digital (e.g., virtual tools) and print resources (e.g., laminated student cards and math mats), allowing students to reveal their mathematical thinking in a risk-free environment. ○ By providing students with a variety of learning opportunities (small group, pair, whole class), to work collaboratively on math problems, share their own thinking, and listen to the thinking of others ○ By including a variety of voices (built by and for Canadian learners) and opportunities to support local contexts (modifiable resources)

Curriculum Expectations 2020	**Mathology Grade 2 Activity Kit**	**Mathology Little Books**	**Pearson Canada K–3 Mathematics Learning Progression**
Overall Expectation B1. Number Sense: demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life			
Specific Expectation **Whole Numbers**			
B1.1 read, represent, compose, and decompose whole numbers up to and including 200, using a variety of tools and strategies, and describe various ways they are used in everyday life	**Teacher Cards** **Number Cluster 2: Number Relationships 1** 11: Number Relationships 1 Consolidation **Number Cluster 3: Grouping and Place Value** 12: Building Numbers to 100 13: Making a Number Line 15: Building Numbers to 200 16: Grouping and Place Value Consolidation (Revision 2020) **Number Cluster 5: Number Relationships 2**	What Would You Rather? Ways to Count Back to Batoche The Great Dogsled Race **To Scaffold:** Paddling the River A Family Cookout At the Corn Farm How Many Is Too Many? **To Extend:**	**Big idea: Numbers tell us how many and how much.** **Recognizing and writing numerals** - Names, writes, and matches two-digit numerals to quantities. - Names, writes, and matches three-digit numerals to quantities. **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.

	23: Benchmarks on a Number Line (Revision 2020) 25: Composing and Decomposing Numbers to 200 **Number Cluster 9: Financial Literacy** 45: Earning Money **Number Math Every Day Cards** 1A: Skip-Counting on a Hundred Chart 1A: Skip-Counting from Any Number 1B: Skip-Counting with Actions 2A: Show Me in Different Ways 2A: Guess My Number 2B: Math Commander 2B: Building an Open Number Line 3A: Adding Ten 3B: Describe Me 5A: Building Numbers 5B: How Many Ways?	Fantastic Journeys Finding Buster Math Makes Me Laugh The Street Party Sports Camp	- Writes, reads, composes, and decomposes three-digit numbers using ones, tens, and hundreds.
B1.2 compare and order whole numbers up to and including 200, in various contexts	**Teacher Cards** **Number Cluster 2: Number Relationships 1** 6: Comparing Quantities 7: Ordering Quantities 8: Comparing and Ordering Numbers to 200 11: Number Relationships 1 Consolidation **Number Cluster 5: Number Relationships 2** 23: Benchmarks on a Number Line	What Would You Rather? Back to Batoche The Great Dogsled Race Family Fun Day **To Scaffold:** Paddling the River A Family Cookout **To Extend** Fantastic Journeys	**Big Idea: Numbers are related in many ways.** **Comparing and ordering quantities (multitude or magnitude)** - Compares and order quantities and written numbers using benchmarks. - Orders three or more quantities using sets and/or numerals.
B1.3 estimate the number of objects in collections of up to 200 and verify their estimates by counting .	**Teacher Cards** **Number Cluster 2: Number Relationships 1** 10: Estimating with Benchmarks	What Would You Rather? Ways to Count **To Scaffold:** At the Corn Farm A Family Cookout **To Extend** Fantastic Journeys	**Big Idea: Numbers are related in many ways.** **Estimating quantities and numbers** - Uses relevant benchmarks (e.g., multiples of 10) to compare and estimate quantities.
B1.4 count to 200, including by 20s, 25s, and 50s, using a variety of tools and strategies	**Teacher Cards** **Number Cluster 1: Counting** 1: Bridging Tens 2: Skip-Counting Forward	What Would You Rather? Ways to Count Family Fun Day A Class-full of Projects	**Big Idea: Numbers tell us how many and how much.** **Applying the principles of counting**

	3: Skip-Counting Flexibly 4: Skip-Counting Backward 5: Counting Consolidation **Number Cluster 3: Grouping and Place Value** 13: Making a Number Line 14: Grouping to Count 16: Grouping and Place Value Consolidation **Number Cluster 5: Number Relationships 2** 24: Jumping on the Number Line 26: Number Relationships 2 Consolidation **Number Math Every Day Cards** 1A: Skip-Counting on a Hundred Chart 1A: Skip-Counting from Any Number 1B: Skip-Counting with Actions 3A: Adding Ten 3B: Thinking Tens 8A: Counting Equal Groups to Find How Many 8A: I Spy 8B: How Many Blocks? 8B: How Many Ways? 9: Collections of Coins	The Best Birthday The Money Jar **To Scaffold:** On Safari! Paddling the River How Many Is Too Many? **To Extend:** Finding Buster How Numbers Work Math Makes Me Laugh Planting Seeds Calla's Jingle Dress	- Says the number name sequences forward and backward from a given number. - Uses number patterns to bridge tens when counting forward and backward (e.g., 39, 40, 41). - Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number. - Uses number patterns to bridge hundreds when counting forward and backward (e.g., 399, 400, 401). - Fluently skip-counts by factors of 100 (e.g., 20, 25, 50) and multiples of 100 from any given number.
B1.5 describe what makes a number even or odd	**Teacher Cards** **Number Cluster 2: Number Relationships 1** 9: Odd and Even Numbers	Ways to Count	**Big Idea: Numbers tell us how many and how much.**
Specific Expectation **Fractions**			
B1.6 use drawings to represent, solve, and compare the results of fair-share problems that involve sharing up to 10 items among 2, 3, 4, and 6 sharers, including problems that result in whole numbers, mixed numbers, and fractional amounts	**Teacher Cards** **Number Cluster 4: Early Fractional Thinking** 17: Equal Parts 18: Comparing Fractions 1 19: Comparing Fractions 2 20: Regrouping Fractional Parts 21: Partitioning Sets 22: Early Fractional Thinking Consolidation **Number Math Every Day Cards** 4A: Equal Parts from Home 4A: Modelling Fraction Amounts	The Best Birthday **To Extend:** Hockey Homework	**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Unitizing quantities and comparing units to the whole** - Partitions whole into equal-sized units and identifies the number of units and the size of, or quantity in, each unit. **Partitioning quantities to form fractions** - Partitions wholes into equal-sized parts to make fair shares or equal-sized groups. - Partitions wholes (e.g., intervals, sets) into equal parts and names the unit fractions.

	4B: Naming Equal Parts		
B1.7 recognize that one third and two sixths of the same whole are equal, in fair-sharing contexts	**Teacher Cards** 21: Partitioning Sets	**To Extend:** Hockey Homework	**Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning quantities to form fractions** - Partitions whole into equal-sized parts to make fair shares or equal-sized groups. - Partitions wholes (e.g., intervals, sets) into equal parts and names the unit fractions.
Overall Expectation **B2. Operations:** use knowledge of numbers and operations to solve mathematical problems encountered in everyday life			
Specific Expectation **Properties and Relationships**			
B2.1 use the properties of addition and subtraction, and the relationships between addition and multiplication and between subtraction and division, to solve problems and check calculations .	**Teacher Cards** **Number Cluster 6: Conceptualizing Addition and Subtraction** 27: Exploring Properties 28: Solving Problems 1 29: Solving Problems 2 30: Solving Problems 3 31: Solving Problems 4 32: Conceptualizing Addition and Subtraction Consolidation **Number Cluster 8: Early Multiplicative Thinking** 40: Exploring Repeated Addition 41: Repeated Addition and Multiplication 42: Repeated Subtraction and Division 43: Early Multiplicative Thinking Consolidation	Array's Bakery Marbles, Alleys, Mibs, and Guli! The Great Dogsled Race **To Scaffold:** Canada's Oldest Sport **To Extend:** The Street Party Planting Seeds Sports Camp Calla's Jingle Dress	**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). - Relates addition and subtraction as inverse operations. - Uses the properties of addition and subtraction to solve problems (e.g., adding or subtracting 0, commutativity of addition). **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** - Uses repeated addition of groups to solve problems. - Models and symbolizes equal sharing and grouping division problems, and relates them to subtraction.

			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. - Explores properties of addition and subtraction (e.g., adding or subtracting 0, commutativity of addition).
Specific Expectation **Math Facts**			
B2.2 recall and demonstrate addition facts for numbers up to 20, and related subtraction facts	**Teacher Cards** **Number Cluster 7: Operational Fluency** 33: Using Doubles 34: Fluency with 20 35: Mastering Addition and Subtraction Facts 37: Operational Fluency Consolidation **Number Cluster 9: Financial Literacy** 46: Spending Money **Number Math Every Day Cards** 6: What Math Do You See? 6: What Could the Story Be? 7A: Doubles and Near-Doubles 7A: I Have… I Need… 7B: Hungry Bird 7B: Make 10 Sequences	Array's Bakery Marbles, Alleys, Mibs, and Guli! A Class-full of Projects The Money Jar The Great Dogsled Race What Would You Rather? **To Scaffold:** That's 10! Buy 1—Get 1 Canada's Oldest Sport **To Extend:** The Street Party Planting Seeds Sports Camp Calla's Jingle Dress	**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 10. - Fluently recalls complements to 10 (e.g., 6 + 4; 7 + 3). - 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.
Specific Expectation **Mental Math**			
B2.3 use mental math strategies, including estimation, to add and subtract whole numbers	**Teacher Cards** **Number Cluster 7: Operational Fluency**	Marbles, Alleys, Mibs, and Guli! A Class-full of Projects The Money Jar	**Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.**

that add up to no more than 50 and explain the strategies used	35: Mastering Addition and Subtraction Facts 36: Multi-Digit Fluency **Number Math Every Day Cards** 7A: Doubles and Near-Doubles	The Great Dogsled Race **To Scaffold** Hockey Time Canada's Oldest Sport **To Extend** How Numbers Work	**Developing fluency of addition and subtraction** - Develops efficient mental strategies and algorithms to solve equations with multi-digit numbers. - Estimates sums and differences of multi-digit numbers.
Specific Expectation **Addition and Subtraction**			
B2.4 use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of whole numbers that add up to no more than 100 .	**Teacher Cards** **Number Cluster 6: Conceptualizing Addition and Subtraction** 27: Exploring Properties 28: Solving Problems 1 29: Solving Problems 2 30: Solving Problems 3 31: Solving Problems 4 32: Conceptualizing Addition and Subtraction Consolidation **Number Cluster 7: Operational Fluency** 36: Multi-Digit Fluency **Number Cluster 9: Financial Literacy** 48: Saving Regularly **Number Math Every Day Cards** 5B: What's the Unknown Part? 6: What Math Do You See? 6: What Could the Story Be? 7A: I Have… I Need… 7B: Hungry Bird	Array's Bakery Marbles, Alleys, Mibs, and Guli! The Great Dogsled Race **To Scaffold:** Canada's Oldest Sport **To Extend:** The Street Party Planting Seeds Calla's Jingle Dress Sports Camp	**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** - 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 math strategies and algorithms to solve equations with multi-digit numbers.
Specific Expectation **Multiplication and Division**			
B2.5 represent multiplication as repeated equal groups, including groups of one half and one	**Teacher Cards** **Number Cluster 8: Early Multiplicative Thinking** 40: Exploring Repeated Addition	Array's Bakery Marbles, Alleys, Mibs, and Guli!	**Big Idea: Numbers tell us how many and how much.** **Applying the principles of counting**

fourth, and solve related problems using various tools and drawings	41: Repeated Addition and Multiplication 43: Early Multiplicative Thinking Consolidation **Number Math Every Day Cards** 8A: Counting Equal Groups to Find How Many 8A: I Spy 8B: How Many Blocks? 8B: How Many Ways?	**To Extend:** Hockey Homework Planting Seeds Sports Camp Calla's Jingle Dress	- Fluently skip-counts by factors of 10 (e.g., 2, 5, 10) and multiples of 10 from any given number. **Big Idea: Quantities and numbers can be grouped by or partitioned into equal-sized units.** **Partitioning quantities to form fractions** - Counts by unit fractions **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** - Models equal groups and uses multiplication symbol (×) to symbolize operation. - Uses repeated addition of groups to solve problems. - Models and symbolizes single-digit multiplication problems involving equal groups or measures (i.e., equal jumps on a number line), and relates them to addition. **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: Patterns and relations can be represented with symbols, equations, and expressions.** **Using symbols, unknowns, and variables to represent mathematical relations** - Uses the equal (=) symbol in equations and knows its meaning (i.e., equivalent; is the same as).
B2.6 represent division of up to 12 items as the equal sharing of a quantity and solve related problems, using various tools and drawings	**Teacher Cards** **Number Cluster 8: Early Multiplicative Thinking** 38: Making Equal Shares 39: Making Equal Groups 42: Repeated Subtraction and Division 43: Early Multiplicative Thinking Consolidation	Family Fun Day The Best Birthday Array's Bakery Marbles, Alleys, Mibs, and Guli! **To Scaffold:**	**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**

		How Many Is Too Many? **To Extend:** Hockey Homework Planting Seeds Calla's Jingle Dress Sports Camp	- Models and solves equal sharing problems to 10. - Groups objects into 2s, 5s, and 10s. - Models and solves equal sharing problems to 100. - Models and solve equal grouping problems to 100. - Models and symbolizes equal sharing and grouping division problems and relates them to subtraction.

Mathology 2 Correlation (Patterning and Algebra) – Ontario

Curriculum Expectations 2020	Mathology Grade 2 Activity Kit	Mathology Little Books	Pearson Canada K–3 Mathematics Learning Progression
Overall Expectation Patterns and Relationships: identify, describe, extend, create, and make predictions about a variety or patterns, including those found in real-life contexts.			
Specific Expectation **Patterns**			
C1.1 identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts	**Teacher Cards** **Patterning and Algebra Cluster 2: Increasing/Decreasing Patterns** 13: Solving Problems **Patterning and Algebra Math Every Day Card** 1: Repeating Patterns Around Us	The Best Surprise Pattern Quest **To Scaffold:** Midnight and Snowfall **To Extend:** Namir's Marvellous Masterpieces	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.**
C1.2 create and translate patterns using various representations, including shapes and numbers	**Teacher Cards** **Patterning and Algebra Cluster 1: Repeating Patterns** 1: Exploring Patterns 4: Combining Attributes **Patterning and Algebra Cluster 2: Increasing/Decreasing Patterns** 10: Reproducing Patterns 11: Creating Patterns **Patterning and Algebra Math Every Day Cards** 1: Show Another Way 2A: How Many Can We Make? 2B: Making Increasing Patterns 2B: Making Decreasing Patterns	The Best Surprise Pattern Quest **To Extend:** Namir's Marvellous Masterpieces	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Identifying, reproducing, extending, and creating patterns that repeat** - Represents the same pattern in different ways (i.e., translating to different symbols, objects, sounds, actions). - Recognizes, extends, and creates repeating patterns based on two or more attributes (e.g., shape and orientation).

C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns represented with shapes and numbers	**Teacher Cards** **Patterning and Algebra Cluster 1: Repeating Patterns** 2: Extending and Predicting 3: Errors and Missing Elements 4: Combining Attributes 5: Repeating Patterns Consolidation **Patterning and Algebra Cluster 2: Increasing/Decreasing Patterns** 6: Increasing Patterns 1 7: Increasing Patterns 2 8: Decreasing Patterns 9: Extending Patterns 12: Errors and Missing Terms 13: Solving Problems 15: Increasing/Decreasing Patterns Consolidation **Patterning and Algebra Math Every Day Cards** 2A: How Many Can We Make? 2A: Error Hunt 2B: Making Increasing Patterns 2B: Making Decreasing Patterns	The Best Surprise Pattern Quest **To Extend:** Namir's Marvellous Masterpieces	**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 and extends familiar number patterns and makes connections to addition (e.g., skip-counting by 2s, 5s, 10s). - 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.

C1.4 create and describe patterns to illustrate relationships among whole numbers up to 100.	**Teacher Cards** **Patterning and Algebra Cluster 2: Increasing/Decreasing Patterns** 14: Patterns in Number Relationships *Link to Other Strands:* ***Teacher Cards*** ***Number Cluster 1: Counting*** *2: Skip-Counting Forward* *3: Skip-Counting Flexibly* *4: Skip-Counting Backward* *5: Counting Consolidation* ***Number Cluster 8: Early Multiplicative Thinking*** *40: Exploring Repeated Addition* *41: Repeated Addition and Multiplication* *43: Early Multiplicative Thinking Consolidation* ***Number Math Every Day Cards*** *1A: Skip-Counting on a Hundred Chart* *1B: Skip-Counting with Actions* *8A: I Spy* *8B: How Many Blocks?* *8B: How Many Ways?*	The Best Surprise Pattern Quest **To Extend:** Namir's Marvellous Masterpieces	**Big Idea: Regularity and repetition form patterns that can be generalized and predicted mathematically.** **Representing and generalizing increasing/decreasing patterns** - Creates an increasing/decreasing pattern (concretely, pictorially, and/or numerically) and explains the pattern rule.
Overall Expectation Equations and Inequalities: demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts			
Specific Expectation **Variables**			
C2.1 identify when symbols are being used as variables, and describe how they are being used	**Teacher Cards** **Patterning and Algebra Cluster 3: Equality and Inequality** 18: Exploring Number Sentences **Patterning and Algebra Math Every Day Card** 3B: What's Missing?	Kokum's Bannock	**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.** **Using symbols, unknowns, and variables to represent mathematical relations**

			- Uses the equal (=) symbol in equations and knows its meaning (i.e., equivalent; is the same as). - Uses placeholders (e.g., □) for unknown values in equations.
Specific Expectation **Equalities and Inequalities**			
C2.2 determine what needs to be added to or subtracted from addition and subtraction expressions to make them equivalent	**Teacher Cards** **Patterning and Algebra Cluster 3: Equality and Inequality** 18: Exploring Number Sentences 21: Missing Numbers **Patterning and Algebra Math Every Day Card** 3B: What's Missing?	Kokum's Bannock	**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). - Relates addition and subtraction as inverse operations. **Big Idea: Patterns and relations can be represented with symbols, equations, and expressions.** **Using symbols, unknowns, and variables to represent mathematical relations** - Uses the equal (=) symbol in equations and knows its meaning (i.e., equivalent; is the same as). - Uses placeholders (e.g., □) for unknown values in equations. - Solves for an unknown value in a one-step addition and subtraction problem (e.g., $n + 5 = 15$).
C2.3 identify and use equivalent relationships for whole numbers up to 100, in various contexts	**Teacher Cards** **Patterning and Algebra Cluster 3: Equality and Inequality** 16: Equal and Unequal Sets 17: Equal or Not Equal? 19: Exploring Number Sentences for Larger Numbers **Patterning and Algebra Math Every Day Cards**	Kokum's Bannock **To Scaffold:** Nutty and Wolfy **To Extend** A Week of Challenges	**Big idea: Numbers are related in many ways.** **Decomposing wholes into parts and composing wholes from parts** - Composes two-digit numbers from parts (e.g., 14 and 14 is 28), and decomposes two-digit numbers into parts (e.g., 28 is 20 and 8). **Big Idea: Quantities and numbers can be added and subtracted to determine how many or how much.**

	3A: Equal or Not Equal? 3A: How Many Ways?		**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). - Relates addition and subtraction as inverse operations.
			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). - Writes equivalent addition and subtraction equations in different forms (e.g., 8 = 5 + 3; 3 + 5 = 8). - Records different expressions of the same quantity as equalities (e.g., 2 + 4 = 5 + 1). **Using symbols, unknowns, and variables to represent mathematical relations** - Uses the equal (=) symbol in equations and knows its meaning (i.e., equivalent; is the same as). - Uses placeholders (e.g., □) for unknown values in equations. - Solves for an unknown value in a one-step addition and subtraction problem (e.g., *n* + 5 = 15).
Overall Expectation **C3. Coding:** solve problems and create computational representations of mathematical situations using coding concepts and skills			
Specific Expectation			

Coding Skills			
C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential and concurrent events.	*Link to Other Strands:* ***Teacher Cards*** ***Geometry Cluster 4: Coding*** *15: Coding Concurrent Events* *17: Writing Code to Solve Problems* *18: Coding Consolidation* ***Geometry Math Every Day Cards*** *3A: Our Design* *4: Code of the Day* *4: Wandering Animals*	Robo	**Big Idea: Objects can be located in space and viewed from multiple perspectives.** **Locating and mapping objects in space** - Provides instructions to locate an object in the environment (e.g., listing instructions to find a hidden object in the classroom). - Describes the movement of an object from one location to another on a grid map (e.g., moving 5 squares to the left and 3 squares down).
C3.2 read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes.	*Link to Other Strands:* ***Teacher Cards*** ***Geometry Cluster 4: Coding*** *16: Effects of Altering Code* *18: Coding Consolidation*	Robo	
Overall Expectation C4. Mathematical Modelling apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations			
Specific Expectation Mathematical Modeling			
This overall expectation has no specific expectations. Mathematical modelling is an iterative and interconnected process that is applied to various contexts, allowing students to bring in learning from other strands. Students' demonstration of the process of mathematical modelling, as they apply concepts and skills learned in other strands, is assessed and evaluated. *11: Metres or Centimetres?*	**Teacher Cards** **Patterning and Algebra Cluster 1: Repeating Patterns** 2: Extending and Predicting 5: Repeating Patterns Consolidation **Cluster 2: Increasing/Decreasing Patterns** 9: Extending Patterns 10: Reproducing Patterns 14: Patterns in Number Relationships *Link to Other Strands:* ***Teacher Cards*** ***Number Cluster 2: Number Relationships 1***		

	10: Estimating with Benchmarks ***Number Cluster 3: Grouping and Place Value*** *13: Making a Number Line* ***Number Cluster 4: Early Fractional Thinking*** *17: Equal Parts* *18: Comparing Fractions 1* ***Number Cluster 5: Number Relationships 2*** *24: Jumping on the Number Line* ***Number Cluster 6: Conceptualizing Addition and Subtraction*** *28: Solving Problems 1* *29: Solving Problems 2* *30: Solving Problems 3* *31: Solving Problems 4* ***Number Cluster 8: Early Multiplicative Thinking*** *38: Making Equal Shares* *39: Making Equal Groups* ***Number Cluster 9: Financial Literacy*** *45: Earning Money* ***Data Management and Probability Cluster 1: Data Management*** *4: Creating a Survey* *6: Making Graphs 2* *8: Data Management Consolidation* ***Data Management and Probability Cluster 2 Probability and Chance*** *10: Conducting Experiments* ***Geometry Cluster 4: Coding*** *17: Writing Code to Solve Problems*		

	Measurement Cluster 1: Using Non-Standard Units *3: Measuring Distance Around* ***Measurement Cluster 2: Using Standard Units*** *5: Benchmarks and Estimation* *8: Metres or Centimetres?*		

Mathology 2 Correlation (Data Management and Probability) – Ontario

Curriculum Expectations 2020	Mathology Grade 2 Activity Kit	Mathology Little Books	Pearson Canada K–3 Mathematics Learning Progression
Overall Expectation **D1. Data Literacy:** manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life			
Specific Expectation **Data Collection and Organization**			
D1.1 sort sets of data about people or things according to two attributes, using tables and logic diagrams, including Venn and Carroll diagrams	**Teacher Cards** **Data Management and Probability Cluster 1: Data Management** 1: Sorting Data by 2 Attributes *Link to Other Strands:* ***Teacher Cards*** ***Geometry Cluster 1: 2-D Shapes*** *1: Sorting 2-D Shapes*	I Spy Awesome Buildings The Tailor Shop **To Scaffold:** What Was Here?	**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.
D1.2 collect data through observations, experiments, and interviews to answer questions of interest that focus on two pieces of information, and organize the data using in two-way tally tables	**Teacher Cards** **Data Management and Probability Cluster 1: Data Management** 4: Creating a Survey 7: Identifying the Mode 8: Data Management Consolidation **Data Management and Probability Math Every Day Card** 1A: Conducting Surveys	Big Buddy Days Marsh Watch **To Scaffold:** Graph It! **To Extend:** Welcome to the Nature Park	**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 them into categories** - Collects data from simple surveys concretely (e.g., shoes, popsicle sticks) or using simple records (e.g., check marks, tallies). - Generates data by counting or measuring (e.g., linking cube tower; number of cubes or height). Limited to whole units.

Specific Expectation **Data Visualization**			
D1.3 display sets of data, using one-to-one correspondence, in concrete graphs, pictographs, line plots, and bar graphs with source, titles, and labels	**Teacher Cards** **Data Management and Probability Cluster 1: Data Management** 5: Making Graphs 1 6: Making Graphs 2 8: Data Management Consolidation	Big Buddy Days Marsh Watch **To Scaffold:** Graph It! **To Extend:** Welcome to the Nature Park	**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). - 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).
Specific Expectation **Data Analysis**			
D1.4 identify the mode(s), if any, for various data sets presented in concrete graphs, pictographs, line plots, bar graphs, and tables, and explain what this measure indicates about the data.	**Teacher Cards** **Data Management and Probability Cluster 1: Data Management** 7: Identifying the Mode		**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.** **Reading and interpreting data displays** - Describes the shape of data in informal ways (e.g., range, spread, gaps, mode).
D1.5 analyze different sets of data presented in various ways, including in logic diagrams, line plots, and bar graphs, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions	**Teacher Cards** **Data Management and Probability Cluster 1: Data Management** 2: Interpreting Graphs 1 3: Interpreting Graphs 2 5: Making Graphs 1 6: Making Graphs 2 8: Data Management Consolidation **Data Management and Probability Math Every Day Card** 1A: Reading and Interpreting Graphs	Big Buddy Days Marsh Watch **To Scaffold:** Graph It! **To Extend:** Welcome to the Nature Park	**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.** **Reading and interpreting data displays** - Interprets displays by noting how many more/less than other categories. **Drawing conclusions by making inferences and justifying decisions based on data collected** - Poses and answers questions about data collected and displayed.

Overall Expectation **D2. Probability: describe the likelihood that events will happen, and use that information to make predictions**			
Specific Expectation **Probability**			
D2.1 use mathematical language, including the terms “impossible”, “possible”, and “certain”, to describe the likelihood of complementary events happening, and use that likelihood to make predictions and informed decisions	**Teacher Cards** **Data Management and Probability Cluster 2: Probability and Chance** 9: Likelihood of Events 10: Conducting Experiments 11: Probability and Chance Consolidation **Data Management and Probability Math Every Day Cards** 1B: What’s in the Bag? 1B: Word of the Day	**To Extend:** Chance	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphical displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Using the language of chance to describe and predict events** - Describes the likelihood of an event (e.g., impossible, unlikely, certain). - Makes predictions based on the question, context, and data presented. - Compares the likelihood of two events (e.g., more likely, less likely, equally likely). - Predicts the likelihood of an outcome in simple probability experiments or games.
D2.2 make and test predictions about the likelihood that the mode(s) of a data set from one population will be the same for data collected from a different population	**Teacher Cards** **Data Management and Probability Cluster 1: Data Management** 7: Identifying the Mode **Data Management and Probability Cluster 2: Probability and Chance** 10: Conducting Experiments 11: Probability and Chance Consolidation	**To Extend:** Chance	**Big Idea: Formulating questions, collecting data, and consolidating data in visual and graphical displays help us understand, predict, and interpret situations that involve uncertainty, variability, and randomness.** **Using the language of chance to describe and predict events** - Describes the likelihood of an event (e.g., impossible, unlikely, certain). - Makes predictions based on the question, context, and data presented. - Compares the likelihood of two events (e.g., more likely, less likely, equally likely). - Predicts the likelihood of an outcome in simple probability experiments or games.

Mathology 2 Correlation (Geometry and Measurement) – Ontario

Curriculum Expectations 2020	Mathology Grade 2 Activity Kit	Mathology Little Books	Pearson Canada K–3 Mathematics Learning Progression
Overall Expectation **E1. Geometric and Spatial Reasoning:** describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them			
Specific Expectation **Geometric Reasoning**			
E1.1 sort and identify two-dimensional shapes by comparing number of sides, side lengths, angles, and number of lines of symmetry	**Teacher Cards** **Geometry Cluster 1: 2-D Shapes** 1: Sorting 2-D Shapes 2: Congruent 2-D Shapes 3: Exploring 2-D Shapes 4: Symmetry in 2-D Shapes 5: 2-D Shapes Consolidation **Geometry Math Every Day Cards** 1: Visualizing Shapes 1: Comparing Shapes	I Spy Awesome Buildings Sharing Our Stories **To Scaffold:** The Tailor Shop What Was Here? Memory Book	**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** - Compares 2-D shapes and 3-D solids to find the similarities and differences. - 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: 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** - Physically explores symmetry of images by folding, cutting, and matching parts. - Identifies 2-D shapes and 3-D solids that have symmetry (limited to line or plane symmetry) (e.g., slicing an apple through its core). - Identifies line(s) of symmetry on regular 2-D shapes.

			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)** - Identifies the sorting rule used to sort sets. - Sorts a set of objects based on two attributes.
E1.2 compose and decompose two-dimensional shapes, and show that the area of a shape remains constant regardless of how its parts are rearranged .	**Teacher Cards** **Geometry Cluster 2: Geometric Relationships** 6: Making Shapes 9: Covering Outlines **Geometry Math Every Day Card** 2A: Fill Me In!	The Discovery	**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 and identifies new 2-D shapes and 3-D solids as a composite of other 2-D shapes and 3-D solids. - Decomposes 2-D shapes and 3-D solids into other known 2-D shapes and 3-D solids. - Completes a picture outline in more than one way. **Big Idea: Assigning a unit to a continuous attribute allows us to measure and make comparisons.** **Understanding relationships among measurement units** - Understands that decomposing and rearranging does not change the measure of an object.
E1.3 identify congruent lengths and angles in two-dimensional shapes by mentally and physically matching them, and determine if the shapes are congruent	**Teacher Cards** **Geometry Cluster 1: 2-D Shapes** 2: Congruent 2-D Shapes 5: 2-D Shapes Consolidation	Getting Ready for School	**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**

			- Compares 2-D shapes and 3-D solids to find the similarities and differences. - 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 2-D shapes and 3-D solids by applying and visualizing transformations - Matches familiar 2-D shapes and 3-D solids (e.g., square, triangle, cone) in different orientations. - Identifies congruent 2-D shapes and 3-D solids through physical movement (e.g., by rotating). - Identifies congruent 2-D shapes and 3-D solids through visualizing transformations.
Specific Expectation **Location and Movement**			
E1.4 create and interpret simple maps of familiar places	**Teacher Cards** **Geometry Cluster3: Location and Movement** 11: Reading Maps 12: Drawing a Map **Geometry Math Every Day Card** 3A: Our Design 3A: Treasure Map	**To Scaffold:** Memory Book	**Big Idea: Objects can be located in space and viewed from multiple perspectives.**
			Locating and mapping objects in space - Uses relative positions to describe the location and order of objects (e.g., between, beside, next, before). - Locates objects in the environment (e.g., playground) by interpreting a m - Makes simple maps based on familiar settings.
E1.5 describe the relative positions of several objects and the movements needed to get from one object to another	**Teacher Cards** **Geometry Cluster 3: Location and Movement** 11: Reading Maps 14: Location and Movement Consolidation **Geometry Math Every Day Cards** 4: Wandering Animals	Robo **To Scaffold:** Memory Book	**Big Idea: Objects can be located in space and viewed from multiple perspectives.**
			Locating and mapping objects in space - Uses positional language and gesture to describe locations and movement, and give simple directions (e.g., in, on, around, right, left). - Uses relative positions to describe the location and order of objects (e.g., between, beside, next, before). - Provides instructions to locate an object in the environment (e.g., listing instructions to find a hidden object in classroom).

			- Describes the movement of an object from one location to another on a grid map (e.g., moving 5 squares to the left and 3 squares down).
Overall Expectation **E2. Measurement:** compare, estimate, and determine measurements in various contexts			
Specific Expectation **Length**			
E2.1 choose and use non-standard units appropriately to measure lengths, and describe the inverse relationship between the size of a unit and the number of units needed	**Teacher Cards** **Measurement Cluster 1: Using Non-Standard Units** 1: Measuring Length 1 2: Measuring Length 2 3: Measuring Distance Around 4: Using Non-Standard Units Consolidation **Measurement Math Every Day Cards** 1A: Estimation Scavenger Hunt 1A: Estimation Station	Getting Ready for School The Discovery **To Scaffold:** The Amazing Seed Animal Measures **To Extend:** Goat Island Measurements About YOU!	**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: 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** - Understands that there should be no gaps or overlaps when measuring. - 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; and iterating a single unit. **Understanding relationships among measurement units** - Compares different sized units and the effects on measuring objects (e.g., small cubes vs. large cubes to measure length).

			- Understands the inverse relationship between the size of the unit and the number of units (length, area, capacity, and mass).
E2.2 explain the relationship between centimetres and metres as units of length, and use benchmarks for these units to estimate lengths	**Teacher Cards** **Measurement Cluster 2: Using Standard Units** 5: Benchmarks and Estimation 6: The Metre 7: The Centimetre 8: Metres or Centimetres? 9: Using Standard Units Consolidation **Measurement Math Every Day Cards** 1B: What Am I?	The Discovery **To Extend:** Goat Island Measurements About YOU!	**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; and 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.
E2.3 measure and draw lengths in centimetres and metres, using a measuring tool, and recognize the impact of starting at points other than zero	**Teacher Cards** **Measurement Cluster 2: Using Standard Units** 6: The Metre 7: The Centimetre 8: Metres or Centimetres? 9: Using Standard Units Consolidation **Measurement Math Every Day Card** 1B: Which Unit?	The Discovery **To Extend:** Goat Island Measurements About YOU!	**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; and iterating a single unit. - Selects and uses appropriate standard units to estimate, measure, and compare length, perimeter, area, capacity, mass, and time. **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).

Specific Expectation **Time**			
E2.4 use units of time, including seconds, minutes, hours, and non-standard units, to describe the duration of various events	**Teacher Card** **Measurement Cluster 3: Time** 10: Measuring Duration of Events 11: Measuring the Passage of Time		**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).

Mathology 2 Correlation (Financial Literacy) – Ontario

Curriculum Expectations 2020	Mathology Grade 2 Activity Kit	Mathology Little Books	Pearson Canada K–3 Mathematics Learning Progression
Overall Expectation **F1. Money and Finances:** demonstrate an understanding of the value of Canadian currency			
Specific Expectation **Money Concepts**			
F1.1 identify different ways of representing the same amount of money up to 200¢ Canadian using various combinations of coins, and up to $200 using various combinations of $1 and $2 coins and $5, $10, $20, $50 and $100 bills	**Number Cluster 9: Financial Literacy** 45: Earning Money 47: Money up to $200 49: Financial Literacy Consolidation **Number Math Every Day Cards** 9: Showing Money in Different Ways	The Money Jar **To Scaffold:** Buy 1-Get 1	**Big Idea: Numbers are related in many ways** **Decomposing wholes into parts and composing wholes from parts** - Composes two-digit numbers from parts (e.g., 14 and 14 is 28) and decomposes two-digit numbers into parts (e.g., 28 is 20 and 8). **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.