Mathology 2 Correlation– Ontario
Mathology Kit (Prior 2022)

LINE MASTERS FOR THE KITS (PRIOR TO 2020) CAN BE FOUND HERE: MATHOLOGY LINE MASTERS ONTARIO VERSION
New lessons are listed in blue print. These are found in Mathology.ca and the updated print boxes. For information see: Mathology.ca

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 (Prior to 2022)	Ideas to work with Mathology Activities to meet the new Ontario Curriculum Expectations
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: Decomposing to 20 12: Number Relationships 1 Consolidation **Number Cluster 3: Grouping and Place Value** 13: Building Numbers 14: Making a Number Line 16: Grouping and Place Value Consolidation **Number Cluster 5: Number Relationships 2** 22: Benchmarks on a Number Line 23: Decomposing 50 44: Earning Money **Number Cluster 9: Financial Literacy** 45: Earning Money	12: Number Relationships 1 Consolidation Consider including numbers to 200. Remove references to odd/even. Review assessment chart to include larger numbers. Consider changing examples in boxes 5-7 to greater numbers (to 100-200). 13: Building Numbers to 100 (Revised 2020) Adapt to include numbers to 200. Consider using rods and ones instead of linking cubes. 14: Making a Number Line This lesson is not specifically required by Ontario. It supports adding 10s which will help with the mental math expectation to 50. It also supports 10 more or less without counting. Adapt when ready. Use numbers to 200. Students can make 3-digit numbers when ready. 16: Grouping and Place Value Consolidation Consider rolling number cubes to get several digits and add more cards. Use 3-digit numbers to 200. Use a hundred chart from 101 to 200. For the Line Master, add more questions with hundreds (e.g., Show the number using hundreds tens and ones

	45: Earning Money **Number Math Every Day Cards** 1A: Skip-Counting on a Hundred Chart; Skip-Counting from Any Number 1B: Skip-Counting with Actions 2A: Show Me in Different Ways; Guess My Number 2B: Math Commander; Building an Open Number Line 3A:Adding Ten 3B: Describe Me 5A: Building Numbers 5B: How Many Ways?	in two ways. How many more tens needed to make another hundred?). 22: Benchmarks on a Number Line Consider starting with numbers to 50 and increase to 200 as students are ready. Use an open number line as a tool to record numbers. Combined grade extensions can go to 500. Students create clue cards for their partners to solve (e.g., "I am between 100 and 150, but closer to 100"; "I am between 225 and 235 but I am closer to 225"). Adjust numbers in assessment chart to reflect the new benchmarks. 23: Decomposing 50 Consider starting with numbers to 50 and increase to 200 as students are ready. Use ten rods and cubes as counting tools. Use as is for accommodations. Composing and Decomposing Numbers to 200 (New 2020)
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 12: Number Relationships 1 Consolidation	12: Number Relationships 1 Consolidation Consider including numbers to 200. Remove references to odd/even. Review assessment chart considering larger numbers. Consider changing examples in box 5-7 to greater numbers (to 100-200). Comparing and Ordering Numbers to 200 (New 2020)

	Number Cluster 5: Number Relationships 2 22: Benchmarks on a Number Line	
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	10: Estimating with Benchmarks Consider using benchmarks of 10 and 25 with visuals of groups of objects up to 100. Extension: put more than 100 objects in the jar or use visuals with larger numbers. Create a Line Master to count collections up to 100 and up to 200. For example: Have 10 circled in the 100 image and another copy without a benchmark circled. Have 25 circled in the 200 image and another copy without a benchmark circled.
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 3: Skip-Counting Flexibly 4: Skip-Counting Backward 5: Counting Consolidation **Number Cluster 3: Grouping and Place Value** 14: Making a Number Line 15: Grouping to Count 16: Grouping and Place Value Consolidation	14: Making a Number Line This lesson is not specifically required by Ontario. It supports adding 10s which will help with the mental math expectation to 50. It also supports 10 more or less without counting. Adapt when ready. Use numbers to 200. Students can make 3-digit numbers when ready. 15: Grouping to Count Consider using Side C to count to 200 by different numbers. 16: Grouping and Place Value Consolidation Consider rolling number cubes to get several digits and add more cards. Use 3-digit numbers to 200. Use a hundred chart from 101 to 200. For the Line Master, add more questions with hundreds (e.g., Show the number using hundreds, tens and

	Number Cluster 5: Number Relationships 2 24: Jumping on the Number Line 25: Number Relationships 2 Consolidation **Number Math Every Day Cards** 1A: Skip-Counting on a Hundred Chart; Skip-Counting from Any Number 1B: Skip-Counting with Actions 3A: Adding Ten 3B: Thinking Tens 8A: Counting Equal Groups to Find How Many; I Spy 8B: How Many Blocks?; How Many Ways? 9: Collections of Coins	ones in two ways. How many more tens needed to make another hundred?). 24: Jumping on the Number Line Consider using numbers up to 200. When students are ready, make a number line to 200 and use the cards on Master 64c and take jumps of 1, 5, 10, 25, and 50 forward. For an extension: Students take jumps of 20 and take jumps of 1 backward. Combined Grades Extension: Students roll a number cube to represent a 3-digit number. Students count by 1s, 5s, 10s, 20s, 25s, and 50s forward and backward. For Consolidation, bring students back together and have them share different ways to jump forward. Decide which way takes the fewest jumps. Assessment: revise box 5 to show a number between 100 and 200. 25: Number Relationships 2 Consolidation Consider using numbers up to 200. Students make new number riddles up to 200 and counting by 25 and 50. For the assessment chart, refer to curriculum for benchmarks.
B1.5 describe what makes a number even or odd	**Teacher Cards** **Number Cluster 2: Number Relationships 1** 8: Odd and Even Numbers	8: Odd and Even Numbers Consider including using examples from real-life contexts such as street addresses, number of siblings, etc.

Specific Expectations 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: Early Fractional Thinking Consolidation **Number Math Every Day Cards** 4A: Equal Parts from Home; Modelling Fraction Amounts 4B: Naming Equal Parts	17: Equal Parts Consider using paper folding and sharing with 2, 3, 4, 6, 8 people. 18: Comparing Fractions 1 Consider using paper folding and sharing with 2, 3, 4, 6, 8 people, then comparing the parts. 19: Comparing Fractions 2 Consider using Cuisinaire Rods to compare. Include a discussion about one-third and two-sixths. In the consolidation consider a discussion about which is equal. 21: Early Fractional Thinking Consolidation Use 10 items, share with 4 friends. Use 10 items, share with 2 friends. Use 9 items, share with 3 friends. Use 9 items, share with 4 friends. Use 8 items, share with 2 friends, and so on. Highlight for students: We can share items equally among friends. Partitioning Sets (New 2020)

B1.7 recognize that one third and two sixths of the same whole are equal, in fair-sharing contexts		Partitioning Sets (New 2020)
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** 26: Exploring Properties 27: Solving Problems 1 28: Solving Problems 2 29: Solving Problems 3 30: Solving Problems 4 31: Conceptualizing Addition and Subtraction Consolidation **Number Cluster 8: Early Multiplicative Thinking** 40: Exploring Repeated Addition 41: Repeated Addition and Multiplication	27: Solving Problems 1 Consider including additional problems up to 100. Continue to create problems with whole – unknown = part. 28: Solving Problems 2 Consider creating additional questions with answers from 50-100. Highlight for students: We can rearrange numbers to make it easier to add. 29: Solving Problems 3 Consider creating additional joining problems with answers from 50-100. Include questions with 3 addends. 30: Solving Problems 4 For larger numbers consider using base-ten manipulatives. For the assessment chart, revise the last box of each concept to use a number between 20 and 100.

	42: Early Multiplicative Thinking Consolidation	31: Conceptualizing Addition and Subtraction Consolidation Consider including additional problems with answers from 50-100 and problems that use 3 addends. Highlights for students: We can add numbers in any order and it does not change the total. 40: Exploring Repeated Addition Consider including groups of halves and fourths (e.g., one-half of a pie, one-half of a granola bar, or one-half of an hour, and one-fourth pieces of oranges, one-fourth of a sandwich). 41: Repeated Addition and Multiplication Consider creating problems that involve repeated equal groups of one-half or one-fourth. A trapezoid is one half of a hexagon. How many hexagons are 6 trapezoids? A single sock is half a pair. How many pairs do you have if you have 8 socks? Butter can come in fourths. How many fourths are there in 2 full blocks of butter? 42: Early Multiplicative Thinking Consolidation Consider creating additional equal grouping and repeated subtraction situations. Share only up to 12 items. What to do: Add in Equal Grouping and Repeated Subtraction. Use item cards (include numbers under 12). Turn over item card, take that many counters. How many people can you share with if each person needs 2, 3, 4? Write a repeated subtraction sentence and a division sentence.

		Highlights for Students: We can use a repeated subtraction and division sentence to show equal grouping.
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: Developing Operational Fluency** 32: Complements of 10 33: Using Doubles 34: Fluency with 20 36: Developing Operational Fluency Consolidation **Number Cluster 9: Financial Literacy** 45: Spending Money **Number Math Every Day Cards**	36: Developing Operational Fluency Consolidation Students could each turnover two dominoes to work with larger numbers. For combined grades students could turn over 3 dominoes. Mastering Addition and Subtraction Facts (New 2020)

	6: What Math Do You See? What Could the Story Be? 7A: Doubles and Near-Doubles; I Have… I Need… 7B: Hungry Bird; Make 10 Sequences	
Specific Expectation **Mental Math**		
B2.3 use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 50, and explain the strategies used	**Teacher Cards** **Number Cluster 7: Developing Operational Fluency** 35: Multi-Digit Fluency **Number Math Every Day Cards** 7A: Doubles and Near-Doubles	35: Multi-Digit Fluency Provide students with opportunities to practice adding and subtracting to 50 using a variety of strategies and unpack the student strategies as a class." Mastering Addition and Subtraction Facts (New 2020)
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** 26: Exploring Properties 27: Solving Problems 1 28: Solving Problems 2 29: Solving Problems 3 30: Solving Problems 4 31: Conceptualizing Addition and Subtraction Consolidation 35: Multi-Digit Fluency	27: Solving Problems 1 Consider including additional problems up to 100. Continue to create problems with whole – unknown = part. 28: Solving Problems 2 Consider creating additional questions with answers from 50-100. Highlight for students: We can rearrange numbers to make it easier to add. 29: Solving Problems 3 Consider creating additional joining problems with answers from 50-100. Include questions with 3 addends.

	Number Cluster 9: Financial Literacy 46: Saving Regularly **Number Math Every Day Cards** 5B: What's the Unknown Part? 6: What Math Do You See? What Could the Story Be? 7A: I Have… I Need… 7B: Hungry Bird	30: Solving Problems 4 For larger numbers, consider using base-ten manipulatives. For the Assessment chart: revise the last box of each concept to use a number between 20 and 100. 31: Conceptualizing Addition and Subtraction Consolidation Consider including additional problems with answers from 50-100 and problems that use 3 addends. Highlights for students: We can add numbers in any order and it does not change the total. 35: Multi-Digit Fluency Provide students with opportunities to practice adding and subtracting to 50 using a variety of strategies and unpack the student strategies as a class."
Specific Expectation **Multiplication and Division**		
B2.5 represent multiplication as repeated equal groups, including groups of one half and one fourth**,** and solve related problems using various tools and drawings	**Teacher Cards** **Number Cluster 8: Early Multiplicative Thinking** 40: Exploring Repeated Addition 41: Repeated Addition and Multiplication 42: Early Multiplicative Thinking Consolidation	40: Exploring Repeated Addition Consider including groups of halves and fourths (e.g., one-half of a pie, one-half of a granola bar, or one-half of an hour, and one-fourth pieces of oranges, one-fourth of a sandwich.) 41: Repeated Addition and Multiplication Consider creating problems that involve repeated equal groups of one-half or one-fourth.

	Number Math Every Day Cards 8A: Counting Equal Groups to Find How Many 8A: I Spy 8B: How Many Blocks? 8B: How Many Ways?	A trapezoid is one half of a hexagon. How many hexagons are 6 trapezoids? A single sock is half a pair. How many pairs do you have if you have 8 socks? Butter can come in fourths. How many fourths are there in 2 full blocks of butter? 42: Early Multiplicative Thinking Consolidation Consider creating additional equal grouping and repeated subtraction situations. Share only up to 12 items. What to do: Add in Equal Grouping and Repeated Subtraction. Use item cards (include numbers under 12). Turn over item card, take that many counters. How many people can you share with if each person needs 2, 3, 4? Write a repeated subtraction sentence and a division sentence. Highlights for Students: We can use a repeated subtraction and division sentence to show equal grouping.
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** 37: Grouping in 2s, 5s, and 10s 38: Making Equal Shares 39: Making Equal Groups 42: Early Multiplicative Thinking Consolidation	38: Making Equal Shares Consider using cards and activities with items up to 12. 39: Making Equal Groups Use only up to 12 items. Assessment chart: boxes 2, 3, 4 could have smaller numbers of counters; boxes 6, 7, 8 should change next steps to 12. 42: Early Multiplicative Thinking Consolidation Consider creating additional equal grouping and repeated subtraction situations. Share only up to 12 items. What to do:

		Add in Equal Grouping and Repeated Subtraction. Use item cards (include numbers under 12). Turn over item card, take that many counters. How many people can you share with if each person needs 2, 3, 4? Write a repeated subtraction sentence and a division sentence. Highlights for Students: We can use a repeated subtraction and division sentence to show equal grouping.

Curriculum Expectations 2020	**Mathology Grade 2 Activity Kit (Prior to 2022)**	Ideas to work with Mathology Activities to meet the new Ontario Curriculum Expectations
Overall Expectation **C1. Patterns and Relationships: identify, describe, extend, create, and make predictions about a variety of 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 1: Repeating Patterns** 13: Solving Problems **Patterning and Algebra Math Every Day Card**	

	1: Repeating Patterns Around Us	
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 **Teacher Cards 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; Making Decreasing Patterns	11: Creating Patterns Consider translating patterns by using the pattern rule to create a new pattern. How to differentiate for Combined grades extension: change to create an increasing or decreasing pattern and predict what the 10^{th} and 100^{th} term would be. Include a discussion on decreasing patterns in the consolidation.
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 Consider adding patterns that can be extended in multiple directions and patterns in real life.

	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 14: Increasing/Decreasing Patterns Consolidation **Patterning and Algebra Math Every Day Cards**	9: Extending Patterns Consider adding increasing and decreasing number patterns. Add to instructions to predict the 10^{th} term, making near and far predictions. 12: Errors and Missing Terms Consider incorporate decreasing pattern throughout the lessons. In Part 1 and 2: switch roles and repeat the activity using numbers. 14: Increasing/Decreasing Patterns Consolidation Consider including decreasing patterns into all aspects of the lesson, as well as assessment.

	2A: How Many Can We Make?; Error Hunt 2B: Making Increasing Patterns; Making Decreasing Patterns	
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** *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*	2: Skip-Counting Forward Consider providing a 101-200 chart when students are ready. Include skip counting by 20s,25s and 50s to 200. Use ten rods and ones as counting tools as an alternative to linking cubes. For accommodations, skip-count by 5s, 10s, 20s, and 25s using a hundred chart. 3: Skip-Counting Flexibly Include skip-counting by 20s, 25s, 50s, and 100s to 200 from different start points. Use ten rods and ones as counting tools as an alternative to linking cubes. 5: Counting Consolidation Include skip-counting by 20s, 25s, and 50s to 200. Add more cards and a 101-200 chart. Create cards to skip-count by 5s, 10s, 20s, 25s, and 50s to go to 200. 40: Exploring Repeated Addition Consider including groups of halves and fourths (e.g., one-half of a pie, one-half of a granola bar, or one-half of an hour, and one-fourth pieces of oranges, one-fourth of a sandwich). 41: Repeated Addition and Multiplication

	41: Repeated Addition and Multiplication *42: 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?*	Consider creating problems that involve repeated equal groups of one-half or one-fourth. A trapezoid is one half of a hexagon. How many hexagons are 6 trapezoids? A single sock is half a pair. How many pairs do you have if you have 8 socks? Butter can come in fourths. How many fourths are there in 2 full blocks of butter? 42: Early Multiplicative Thinking Consolidation Consider creating additional equal grouping and repeated subtraction situations. Share only up to 12 items. What to do: Add in Equal Grouping and Repeated Subtraction. Use item cards (include numbers under 12). Turn over item card, take that many counters. How many people can you share with if each person needs 2, 3, 4? Write a repeated subtraction sentence and a division sentence. Highlights for Students: We can use a repeated subtraction and division sentence to show equal grouping.
Overall Expectation **C2. 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**	17: Exploring Number Sentences Consider adapting line masters to include expressions 100. Use Line Master suggested for combined grades. Adapt some questions so that there are multiple addends (e.g., 2 + 4 + 5 + 2).

	17: Exploring Number Sentences **Patterning and Algebra** **Math Every Day Card** 3B: What's Missing?	
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** 17: Exploring Number Sentences 19: Missing Numbers **Patterning and Algebra** **Math Every Day Card** 3B: What's Missing?	17: Exploring Number Sentences Consider adapting line masters to include expressions 100. Use Line Master suggested for combined grades. Adapt some questions so that there are multiple addends (e.g., 2 + 4 + 5 + 2). 19: Missing Numbers Consider including a discussion on: What does the box/symbol mean in this equation? Combined grades suggestions are applicable for on grade. Combined grades extension could be to write their own number.
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**	Exploring Number Sentences for Larger Numbers (New 2020)

	15: Equal and Unequal Sets 16: Equal or Not Equal? **Patterning and Algebra Math Every Day Cards** 3A: Equal or Not Equal?; 3AHow Many Ways?	
Overall Expectation **C3. Coding:** solve problems and create computational representations of mathematical situations using coding concepts and skills		
Specification 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.	**Teacher Cards** **Geometry Cluster 5: Coding** **Geometry Math Every Day Cards** 4A: Our Design 5: Code of the Day; 5:Wandering Animals	Coding Concurrent Events (New 2020) Writing Code to Solve Problems (New 2020) Coding Consolidation (New 2020)
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.		Effects of Altering a Code (New 2020) Coding Consolidation (New 2020)

Overall Expectation **C4.** Mathematical Modelling apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations		
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	**Number** 10: Estimating with Benchmarks 14: Making a Number Line 17: Equal Parts 18: Comparing Fractions 1 24: Jumping on the Number Line 27: Solving Problems 1 28: Solving Problems 2 29: Solving Problems 3 30: Solving Problems 4 38: Making Equal Shares 39: Making Equal Groups 44: Earning Money **Algebra**	**Number** 14: Making a Number Line This lesson is not specifically required by Ontario. It supports adding 10s which will help with the mental math expectation to 50. It also supports 10 more or less without counting. 17: Equal Parts Consider using paper folding and sharing with 2, 3, 4, 6, 8 people. 18: Comparing Fractions 1 Consider using paper folding and sharing with 2, 3, 4, 6, 8 people, then comparing the parts. 24: Jumping on the Number Line Consider using numbers up to 200. When students are ready, make a number line to 200 and use the cards on Master 64c, then take jumps of 1, 5, 10, 25, and 50 forward. Extension: Students take jumps of 20 and take jumps of 1 backward. Combined Grades Extension: Students roll a number cube to represent a 3-digit number. Students count by 1, 5, 10, 20, 25, and 50 forward and backward. For Consolidation, bring students back together and have them share different ways to jump forward. Decide which way takes the fewest jumps. Assessment: change box 5 to show a number between 100 and 200. 27: Solving Problems 1

	2: Extending and Predicting 5: Consolidation Repeating Patterns 9: Extending Patterns 10: Reproducing Patterns **Data** 3: Creating a Survey 5: Making Graphs 2 6: Data Consolidation 8: Conducting Experiments **Spatial** 3: Measuring Distance Around 8: Benchmarks and Estimation 11: Metres or Centimetres? **Financial Literacy** 44: Earning Money	Consider including additional problems up to 100. Continue to create problems with whole – unknown = part. 28: Solving Problems 2 Consider creating additional questions with answers from 50-100. Highlight for students: We can rearrange numbers to make it easier to add. 29: Solving Problems 3 Consider creating additional joining problems with answers from 50-100. Include questions with 3 addends. 30: Solving Problems 4 For larger numbers consider using base-ten manipulatives. For the Assessment chart, revise the last box of each concept to use a number between 20 and 100. 38: Making Equal Shares Consider using cards with items up to 12. 39: Making Equal Groups Use only up to 12 items. For the Assessment chart: boxes 2, 3, 4 should have fewer counters; boxes 6, 7, 8 should change next steps to 12. **Algebra** 2: Extending and Predicting Consider adding patterns that can be extended in multiple directions and patterns in real life. Patterns in Number Relationships (New 2020)

		Data 3: Creating a Survey Consider including logic diagrams, like Venn and Carroll diagrams. Organize findings using two-way tally tables. 6: Data Consolidation Consider collecting data on people and things. Sort and organize on Carroll/Venn Diagrams. Include identifying the Mode when analyzing. 8: Conducting Experiments Include complimentary events when you talk about how you can "use more than one word to describe the same spinner/bag". Two events are said to be complementary when one event occurs if and only if the other does not. For example, rolling a 5 or greater and rolling a 4 or less on a number cube are complementary events, because a roll is 5 or greater if and only if it is not 4 or less. Assessment chart: Include complimentary events.

Mathology 2 Correlation (Data Management and Probability) – Ontario

Curriculum Expectations 2020	**Mathology Grade 2 Activity Kit (Prior to 2022)**	Ideas to work with Mathology Activities to meet the new Ontario Curriculum Expectations

Overall Expectation **D1. Data Literacy:** manage, analyze, 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** ***Teacher Cards*** ***Geometry Cluster 1: 2-D Shapes*** *1: Sorting 2-D Shapes* ***Geometry Cluster 2: 3-D Solids*** *1: Sorting 3-D Solids*	. Sorting Data by 2 Attributes (New 2020) 1: Sorting 2-D Shapes Consider using Combined Grades extension cards. Include lines of symmetry.
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** 3: Creating a Survey 6: Data Management Consolidation **Data Management and Probability Math Every Day Card**	3: Creating a Survey Consider including logic diagrams, like Venn and Carroll diagrams. Organize findings using two-way tally tables. 6: Data Consolidation Consider collecting data on people and things. Sort and organize on Carroll/Venn Diagrams. Include identifying the Mode when analyzing. **Identifying the Mode (New 2020)**

	1: Conducting Surveys	
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** 4: Making Graphs 1 5: Making Graphs 2 6: Data Management Consolidation	6: Data Consolidation Consider collecting data on people and things. Sort and organize on Carroll/Venn Diagrams. Include identifying the Mode when analyzing.
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**	Identifying the Mode (New 2020)
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** 1: Interpreting Graphs 1 2: Interpreting Graphs 2	1: Interpreting Graphs 1 Consider a discussion on making inferences about the data – what does the data tell us that's not explicitly stated in the graph? For the Assessment Chart: Box 6 – include "makes inferences about the data". 2: Interpreting Graphs 2

	4: Making Graphs 1 5: Making Graphs 2 6: Data Management Consolidation **Data Management and Probability Math Every Day Card** 1: Reading and Interpreting Graphs	Consider a discussion on making inferences about the data – what does the data tell us that's not explicitly stated in the graph? For the Assessment Chart: Box 8 – include "makes inferences about the data". 6: Data Management Consolidation Consider collecting data on people and things. Sort and organize on Carroll/Venn Diagrams. Include identifying the Mode when analyzing.
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** 7: Likelihood of Events 8: Conducting Experiments 9: Probability and Chance Consolidation **Data Management and Probability Math Every Day Cards**	7: Likelihood of Events Consider including likelihood of complimentary events. 8: Conducting Experiments Consider including complimentary events. For the Assessment chart: Consider including complimentary events. 9: Probability and Chance Consolidation Consider including complimentary events. Two events are said to be complementary when one event occurs if and only if the other does not. For example: if you draw the card that says "Make a bag where the likelihood of taking a red counter is impossible", then drawing a yellow counter will be certain. Assessment chart consider including complimentary events in box 4. -

	2: What's in the Bag? 2:Word of the Day	
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 2: Probability and Chance** 8: Conducting Experiments 9: Probability and Chance Consolidation	Identifying the Mode (New 2020) 8: Conducting Experiments Consider iincluding complimentary events in a discussion about how you can "use more than one word to describe the same spinner/bag" Two events are said to be complementary when one event occurs if and only if the other does not. For example: if you draw the card that says, "Make a bag where the likelihood of taking a red counter is impossible", then drawing a yellow counter will be certain. In the Assessment chart: Include complimentary events. 9: Probability and Chance Consolidation Consider Including complimentary events. Two events are said to be complementary when one event occurs if and only if the other does not. For example: if you draw the card that says, "Make a bag where the likelihood of taking a red counter is impossible", then drawing a yellow counter will be certain. Assessment chart: Include complimentary events in box 4.

Mathology 2 Correlation (Geometry and Measurement) – Ontario

Curriculum Expectations 2020	**Mathology Grade 2 Activity Kit (Prior to 2022)**	Ideas to work with Mathology Activities to meet the new Ontario Curriculum Expectations

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: Exploring 2-D Shapes 4: Symmetry in 2-D Shapes 5: 2-D Shapes Consolidation **Geometry Math Every Day Cards** 1: Visualizing Shapes; Comparing Shapes	1: Sorting 2-D Shapes Consider using Combined Grades extension cards. Include lines of symmetry. LM2b is no longer combined grades extension but rather on grade. For Combined Grades consider changing to: Students sort using various 3-D objects and identify 2-D shapes within them. 2: Exploring 2-D Shapes Co-create a list of geometric and non-geometric attributes used to identify 2-D shapes. 5: 2-D Shapes Consolidation Consider including congruent length when talking about equal sides. Add angle cards: no equal angles, 2 equal angles, more than 2 equal angles. For Combined grades extension, LM11C: consider removing reference to right angles, and polygons, add edges, faces. Combined Grades Extension - Grade 3s now sort 3-D solids by edges, vertices, faces and angles.
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 3: Geometric Relationships** 11: Making Shapes 15: Covering Outlines	15: Covering Outlines In the Consolidation, consider including a discussion that the area of the shape remains the same no matter how it's covered. If a two-dimensional shape is broken into smaller parts (decomposing) and reassembled in a different way (composing), the area of the shape

	Geometry Math Every Day Card 3A: Fill Me In!	remains the same even though the shape itself has changed. This is the property of conservation.
. **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** 5: 2-D Shapes Consolidation	5: 2-D Shapes Consolidation Consider including congruent length when talking about equal sides. Add angle cards: no equal angles, 2 equal angles, more than 2 equal angles. For Combined grades extension, LM11C: consider removing reference to right angles, and polygons, add edges, faces. Combined Grades Extension - Grade 3s now sort 3-D solids by edges, vertices, faces and angles. Congruent 2-D Shapes (New 2020)
Specific Expectation **Location and Movement**		
E1.4 create and interpret simple maps of familiar places	**Teacher Cards** **Geometry Cluster 4: Location and Movement** 18: Reading Maps 19: Drawing a Map **Geometry Math Every Day Card** 4A: Our Design; Treasure Map	
E1.5 describe the relative positions of several objects and the movements needed to get from one object to another	**Teacher Cards**	

	Geometry Cluster 4: Location and Movement 18: Reading Maps 21: Location and Movement Consolidation **Geometry Math Every Day Cards** 5: Wandering Animals	
Overall Expectation **E2. Measurement:** compare, estimate, and determine measurements in various contexts		
Specific Expectation **Attributes**		
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 7: Using Non-Standard Units Consolidation	7: Using Non-Standard Units Consolidation Consider including length, distance around, congruent length and angle cards. Consider removing references to mass, area, capacity.

	Measurement Math Every Day Cards 1: Estimation Scavenger Hunt; Estimation Station	
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** 8: Benchmarks and Estimation 9: The Metre 10: The Centimetre 11: Metres or Centimetres 12: Using Standard Units Consolidation **Measurement Math Every Day Cards** 2: What Am I?	9: The Metre Consider including a discussion about the relationship 100 cm = 1 m. Measure and represent objects in cm and m. 12: Using Standard Units Consolidation Consider including drawing lengths. Highlight for students to include 100 cm = 1 m.
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** 9: The Metre 10: The Centimetre 11: Metres or Centimetres	9: The Metre Consider including a discussion about the relationship 100 cm = 1 m. Measure and represent objects in cm and m. 12: Using Standard Units Consolidation Consider including drawing lengths. Highlight for students to include 100 cm = 1 m.

	12: Using Standard Units Consolidation **Measurement Math Every Day Card** 2: Which Unit?	
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 and Temperature** 15: Measuring Time	Passage of Time (Revised 2020)

Curriculum Expectations 2020	**Mathology Grade 2 Activity Kit (Prior to 2022)**	Ideas to work with Mathology Activities to meet the new Ontario Curriculum Expectations
Overall Expectation **F1. Money and Finances:** demonstrate an understanding of the value of Canadian currency		
Specific Expectations **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	**Number Cluster 9: Financial Literacy** 44: Earning Money	47: Money up to $200 (New 2020) 49: Financial Literacy Consolidation (Revised 2020)

$1 and $2 coins and $5, $10, $20, $50 and $100 bills	**Number Math Every Day Cards** 9: Showing Money in Different Ways	Create a Line Master with whole dollar amounts to $200 and cents to 200 cents. Each pair of students might model the amount in one way and the partner models the fewest coins or bills possible. The Assessment chart could be about modelling/representing money to 200 cents/$200 in different ways.