

Mathology 2 and Ontario Ministry of Education Long-Range Plan: by Topic

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Attributes and Numbers	Big Ideas		
	<ul style="list-style-type: none"> • Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared. • 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes. • Numbers are related in many ways. • Numbers tell us how many and how much. • Quantities and numbers can be grouped by or partitioned into equal-sized units. 		
Time: 10 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>I Spy Awesome Buildings</u> - find and classify 2-D shapes in 3-D objects - investigate and make 2-D shapes	
		<u>Ways to Count</u> - estimate and group to count to 100 - skip-count to 100	
		<u>Sharing Our Stories</u> - explore lines of symmetry in 2-D shapes - explore 2-D shapes	
Introduce and apply throughout the year as appropriate 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 E2.4 use units of time, including seconds, minutes, hours, and non-standard units, to describe the duration of various events	<i>-Are students able to tell time to the quarter-hour on an analogue clock?</i> <i>-Are students able to match digital and analogue clock time?</i>	<u>Measurement Cluster 3: Time</u> 10: Measuring Time	<u>Math Every Day Cards, Measurement 3A: Hula Hoop Clock</u>

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Developing an understanding of attributes</p> <p>C1.1 identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts</p> <p>D1.1 sort sets of data about people or things according to two attributes, using tables and logic diagrams, including Venn and Carroll diagrams</p> <p>E1.1 sort and identify two-dimensional shapes by comparing number of sides, side lengths, angles, and number of lines of symmetry</p>	<p><i>-Are students able to identify geometric (e.g., straight/curved sides, numbers of sides, number of vertices) and non-geometric (e.g., colour, size, thickness) attributes of the shapes?</i></p> <p><i>-Are students able to sort 2-D shapes using two attributes?</i></p>	<p><u>Geometry Cluster 1: 2-D Shapes</u></p> <p>1: Sorting 2-D Shapes</p> <p>3: Exploring 2-D Shapes</p> <p>4: Symmetry in 2-D Shapes</p> <p>5: Consolidation (2-D Shapes)</p>	<p><u>Math Every Day Cards, Geometry</u></p> <p>1: Visualizing Shapes; Comparing Shapes</p>
<p>Counting collections and subsets of collections based on attributes</p> <p>B1.3 estimate the number of objects in collections of up to 200 and verify their estimates by counting</p> <p>B1.4 count to 200, including by 20s, 25s, and 50s, using a variety of tools and strategies</p>	<p><i>-What strategies do students use to make their estimates (e.g., guessing, counting, using benchmarks of 10 and 25, using previous estimates)?</i></p> <p><i>-Are students able to skip-count forward and backward by 2s, 5s, 10s, 20s, 25s, and 50s or do they need support (e.g., a hundred chart)?</i></p> <p><i>-Do students use patterns to help them count forward and backward?</i></p>	<p><u>Number Cluster 1: Counting</u></p> <p>1: Bridging Tens</p> <p>2: Skip-Counting Forward</p> <p>3: Skip-Counting Flexibly</p> <p>4: Skip-Counting Backward</p> <p>5: Consolidation (Counting)</p> <p><u>Number Cluster 2: Number Relationships 1</u></p> <p>10: Estimating with Benchmarks</p>	<p><u>Math Every Day Cards, Number</u></p> <p>1A: Skip-Counting on a Hundred Chart; Skip-Counting from Any Number</p> <p>1B: Skip-Counting with Actions</p> <p>2A: Show Me in Different Ways; Guess My Number</p> <p>2B: Math Commander; Building an Open Number Line</p> <p>3A: Adding Ten</p> <p>3B: Thinking Tens; Describe Me</p> <p>5A: Building Numbers</p> <p>5B: How Many Ways?</p> <p>8A: Counting Equal Groups to Find How Many; I Spy</p> <p>8B: How Many Blocks? How Many Ways?</p> <p>9: Collections of Coins</p>

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
			Math Every Day Cards, Patterning and Algebra 1: Repeating Patterns Around Us
<i>Reflection: How can we identify and organize 2-D objects? How can we use patterns to count forwards and backwards?</i>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Number Patterns, Relationships and Equivalency	Big Ideas <ul style="list-style-type: none"> • Numbers are related in many ways. • Quantities and numbers can be added and subtracted to determine how many or how much. • Quantities and numbers can be grouped by or partitioned into equal-sized units. • Objects can be located in space and viewed from multiple perspectives. 		
Time: 10 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>Robo</u> - describe the location of objects - explore and describe the movement of objects	
Using patterns to develop an understanding of relationships among numbers, and addition and subtraction facts C1.4 create and describe patterns to illustrate relationships among whole numbers up to 100 B1.5 describe what makes a number even or odd B2.2 recall and demonstrate addition facts for numbers up to 20, and related subtraction facts	<i>-Are students able to explain why a number is even or odd?</i> <i>-Do students use math language to explain the strategy they used to find the answer?</i> <i>-Are students able to answer both the addition and subtraction questions or do they struggle with subtraction?</i>	<u>Number Cluster 2: Number Relationships 1</u> 7: Ordering Quantities 9: Odd and Even Numbers 11: Consolidation (Number Relationships 1) <u>Number Cluster 7: Operational Fluency</u> 33: Using Doubles 34: Fluency with 20	<u>Math Every Day Cards, Number 6: What Math Do You See? What Could the Story Be?</u> 7A: Doubles and Near-Doubles; I Have... I Need... 7B: Hungry Bird; Make 10 Sequences 9: Showing Money in Different Ways

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Demonstrating and using equivalency to represent, compose, and decompose whole numbers in different ways</p> <p>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</p> <p>C2.1 identify when symbols are being used as variables, and describe how they are being used</p> <p>C2.2 determine what needs to be added to or subtracted from addition and subtraction expressions to make them</p>	<p><i>-Are students able to build the number using hundreds, tens, and ones?</i></p> <p><i>-How do students determine how many more ones (tens) they need to make another ten (hundred) (e.g., counting on with cubes, counting on with fingers, using number relationships or known facts)?</i></p>	<p>Number Cluster 3: Grouping and Place Value</p> <p>12: Building Numbers to 100</p> <p>13: Making a Number Line</p> <p>15: Building Numbers to 200</p> <p>16: Consolidation (Grouping and Place Value)</p> <p>Number Cluster 5: Number Relationships 2</p> <p>23: Benchmarks on a Number Line</p> <p>25: Composing and Decomposing Numbers to 200</p>	<p>Math Every Day Cards, Patterning and Algebra</p> <p>3A: Equal or Not Equal? How Many Ways?</p> <p>3B: What's Missing?</p> <p>Math Every Day Cards, Geometry</p> <p>4A: Our Design</p>

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Using coding to show equivalent relationships</p> <p>C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential and concurrent events</p> <p>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</p> <p>C2.3 identify and use equivalent relationships for whole numbers up to 100, in various contexts</p> <p>F1.1 identify different ways of representing the same amount of money up to Canadian 200¢ 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</p>	<p><i>-Are students able to use numbers and arrows to write a code?</i></p> <p><i>-Are students able to write a code for someone who is standing in a different location than they are?</i></p> <p><i>-When obstacles are added, how do students adjust their code (e.g., start over, or make changes to one part of the code)?</i></p>	<p>Geometry Cluster 4: Coding</p> <p>15: Coding Concurrent Events</p> <p>17: Writing Code to Solve Problems</p>	<p>Math Every Day Cards, Geometry</p> <p>5: Code of the Day</p>
<p>Reflection: How can we use patterns to in addition and subtraction? How can we solve problems by using coding?</p>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Comparison of Measures and Quantities	<p style="text-align: center;">Big Ideas</p> <ul style="list-style-type: none"> • Objects can be located in space and viewed from multiple perspectives. • Many things in our world (e.g., objects, spaces, events) have attributes that can be measured and compared. • Numbers tell us how many and how much. • Assigning a unit to a continuous attribute allows us to measure and make comparisons. 		
Time: 10 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>What Would you Rather?</u> - compare quantities to 100 - estimate and count to 100	
		<u>Back to Batoche</u> - group quantities based on units of 10 - compare/order numbers to 100	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Comparing spatially and identifying congruence E1.4 create and interpret simple maps of familiar places E1.3 identify congruent lengths and angles in two-dimensional shapes by mentally and physically matching them, and determine if the shapes are congruent</p> <p>Comparing measures using non-standard units* 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 * Coding may be used to measure lengths in non-standard units such as number of steps.</p>	<p><i>- Do students use relative positional language when describing locations (e.g., beside, between, right, left)?</i></p> <p><i>- Are students able to make a simple map, with labels, of a familiar environment?</i></p> <p><i>- Can students identify congruent lengths and angles in two dimensional shapes?</i></p> <p><i>- Do students understand that an object can have several measurable attributes (e.g., a book has mass, and its cover has side length and area)?</i></p> <p><i>- Do students select appropriate tools to measure the different attributes (e.g., use a unit that has area to measure area)?</i></p> <p><i>- Do students understand that to get an accurate measure, the units have to be laid out without gaps or overlaps?</i></p>	<p><u>Geometry Cluster 3: Location and Movement</u> 11: Reading Maps 12: Drawing a Map</p> <p><u>Geometry Cluster 1: 2-D Shapes</u> 2: Congruent 2-D Shapes 5: Consolidation (2-D Shapes)</p> <p><u>Measurement Cluster 1: Using Non-Standard Units</u> 1: Measuring Length 1 2: Measuring Length 2 3: Measuring Distance Around 4: Consolidation (Using Non-Standard Units)</p>	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Comparing measures using standard units E2.2 explain the relationship between centimetres and metres as units of length, and use benchmarks for these units to estimate lengths 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</p>	<p><i>-Do students choose the appropriate unit to measure with? Can students justify their choice of unit?</i> <i>-How do students deal with lengths that are not whole numbers of centimetres or metres?</i></p>	<p>Measurement Cluster 2: Using Standard Units 5: Benchmarks and Estimation 6: The Metre 7: The Centimetre 8: Metres or Centimetres? 9: Consolidation (Using Standard Units)</p>	<p>Math Every Day Cards, Measurement 1: Estimation Scavenger Hunt; Estimation Station 2: What Am I?; Which Unit?</p>
<p>Comparing quantities 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 B1.2 compare and order whole numbers up to and including 200, in various contexts</p>	<p><i>-Do students use comparative language to describe numbers?</i> <i>-Can students determine which number is greater/lesser and how much greater/lesser?</i> <i>-Can students order numbers from least to greatest and from greatest to least?</i></p>	<p>Number Cluster 2: Number Relationships 1 6: Comparing Quantities 7: Ordering Quantities 8: Comparing and Ordering Numbers to 200 11: Consolidation (Number Relationships 1)</p>	<p>Math Every Day Cards, Number 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?</p> <p>Math Every Day Cards, Geometry 4A: Our Design; Treasure Map</p>
<p>Reflection: How can we compare and measure quantities?</p>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Collection, Organization, Representation, and Analysis of Data, and Introduction to Mathematical Modelling	<p style="text-align: center;">Big Ideas</p> <ul style="list-style-type: none"> • 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. • Numbers tell us how many and how much. 		
Time: 10 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>Getting Ready for School</u> - estimate and measure length, duration, and distance around - compare, order, and describe measures	
		<u>The Discovery</u> - estimate and measure length, perimeter, and area - compare and describe length, perimeter, and area	
Collecting, organizing, and representing data D1.2 collect data through observations, experiments, or interviews to answer questions of interest that focus on two pieces of information, and organize the data in two-way tally tables D1.3 display sets of data, using one-to-one correspondence, in concrete graphs, pictographs, line plots, and bar graphs with proper sources, titles, and labels	<ul style="list-style-type: none"> - <i>Are students able to create a line plot and bar graph to show the data?</i> - <i>Do students label their graphs appropriately?</i> - <i>Do students use math language when answering questions and comparing data (e.g., more, fewer, most, least)?</i> 	<u>Data Management and Probability Cluster 1: Data Management</u> 2: Interpreting Graphs 1 3: Interpreting Graphs 2 4: Creating a Survey 5: Making Graphs 1 6: Making Graphs 2	<u>Math Every Day Cards, Data Management and Probability</u> 1: Reading and Interpreting Graphs; Conducting Surveys <u>Math Every Day Cards, Number</u> 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?

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Analyzing data using counts</p> <p>B1.4 count to 200, including by 20s, 25s, and 50s, using a variety of tools and strategies</p> <p>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</p> <p>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</p> <p>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, posing a real-life situation that requires the process of mathematical modelling and involves the collection, organization, representation, and analysis of data*</p>	<p><i>-Are students able to create graphs that accurately show the data collected?</i></p> <p><i>-Are students able to use the graphs to answer questions?</i></p> <p><i>-Can students use words to describe how likely an event is to occur?</i></p> <p><i>-Can students use their understanding of how likely an event is to occur to help us make choices?</i></p>	<p><u>Data Management and Probability Cluster 1: Data Management</u></p> <p>7: Identifying the Mode</p> <p>8: Consolidation (Data Management)</p> <p><u>Data Management and Probability Cluster 2: Probability and Chance</u></p> <p>9: Likelihood of Events</p> <p>10: Conducting Experiments</p> <p>11: Consolidation (Probability and Chance)</p> <p><u>Number Cluster 1: Counting</u></p> <p>1: Bridging Tens</p> <p>2: Skip-Counting Forward</p> <p>3: Skip-Counting Flexibly</p>	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>C4 apply the process of mathematical modelling to represent, analyze, make predictions, and provide insight into real-life situations**</p> <p>* Depending on the situation it may be appropriate to complete the mathematical modelling task now or continue as new learning is acquired.</p> <p>** One aspect of the mathematical modelling process is to identify things that change (variable) and things that remain the same.</p>			
<p>Reflection: How can we ask and answer questions when comparing data ad describe the likelihood of events?</p>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Represent and Solve Problems Involving Addition and Subtraction	<p style="text-align: center;">Big Ideas</p> <ul style="list-style-type: none"> • Quantities and numbers can be added and subtracted to determine how many or how much. • Quantities and numbers can be grouped by or partitioned into equal-sized units. • Objects can be located in space and viewed from multiple perspectives. • Quantities and numbers can be added and subtracted to determine how many or how much. 		
Time: 30 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>Marbles, Alleys, Mibs, and Guli!</u> - add/subtract 2-digit numbers - solve equal grouping/sharing problems	
		<u>A Class-full of Projects</u> - add/subtract to 100 - compose/decompose based on units of 10	
		<u>Array's Bakery</u> - solve addition/subtraction problems - solve equal grouping/sharing problems	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Developing mental math skills related to estimating, adding, and subtracting</p> <p>Representing and using addition and subtraction, and the commutative property for addition</p> <p>Using mental math strategies to create and predict the outcome of code that moves an agent from one location to another and models addition and subtraction</p> <p>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</p> <p>B2.2 recall and demonstrate addition facts for numbers up to 20, and related subtraction facts</p> <p>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</p> <p>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</p> <p>C2.1 identify when symbols are being used as variables, and describe how they are being used</p>	<p><i>- Do students use math language to explain the strategy they used to find the answer?</i></p> <p><i>- Which strategies are students using efficiently? Which ones do they need more practice with?</i></p>	<p><u>Number Cluster 7: Operational Fluency</u></p> <p>35: Mastering Addition and Subtraction Facts</p> <p>36: Multi-Digit Fluency</p> <p>37: Consolidation (Operational Fluency)</p> <p><u>Number Cluster 3: Grouping and Place Value</u></p> <p>12: Building Numbers to 100</p> <p>13: Making a Number Line</p> <p>15: Building Numbers to 200</p> <p>16: Consolidation (Grouping and Place Value)</p> <p><u>Number Cluster 5: Number Relationships 2</u></p> <p>23: Benchmarks on a Number Line</p>	<p><u>Math Every Day Cards, Number</u></p> <p>1A: Skip-Counting on a Hundred Chart; Skip-Counting from Any Number</p> <p>1B: Skip-Counting with Actions</p> <p>2A: Show Me in Different Ways; Guess My Number</p> <p>2B: Math Commander; Building an Open Number Line</p> <p>3A: Adding Ten</p> <p>3B: Describe Me</p> <p>5A: Building Numbers</p> <p>5B: How Many Ways?; What's the Unknown Part?</p> <p>6: What Math Do You See?; What Could the Story Be?</p> <p>7A: Doubles and Near-Doubles; I Have... I Need...</p> <p>7B: Hungry Bird; Make 10 Sequences</p> <p><u>Math Every Day Cards, Geometry</u></p> <p>4A: Our Design</p> <p>5: Code of the Day; Wandering Animals</p>

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential and concurrent events</p> <p>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</p> <p>E1.5 describe the relative positions of several objects and the movements needed to get from one object to another</p>		<p><u>Number Cluster 9: Financial Literacy</u> 44: Estimating Money 45: Earning Money 46: Spending Money 47: Money up to \$200 48: Saving Regularly 49: Consolidation (Financial Literacy)</p> <p><u>Geometry Cluster 4: Location and Movement</u> 14: Consolidation (Location and Movement)</p>	
<p>Representing multiplication as repeated addition and division as repeated subtraction</p> <p>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</p>	<p><i>- How do students decide which operation to use?</i></p> <p><i>- Can students use math language (e.g., add, subtract, take away, answer) to explain how they solved the problems?</i></p> <p><i>- Do students make equal groups? Do they realize that when there are leftovers, equal sharing is not possible?</i></p> <p><i>- Are students able to write a repeated addition (subtraction) and multiplication (division) sentence for each way they find?</i></p>	<p><u>Number Cluster 5: Number Relationships 2</u> 25: Composing and Decomposing Numbers to 200</p> <p><u>Number Cluster 6: Conceptualizing Addition and Subtraction</u> 30: Solving Problems 3 31: Solving Problems 4 32: Consolidation (Conceptualizing Addition and Subtraction)</p>	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		Number Cluster 8: Early <u>Multiplicative Thinking</u> 40: Exploring Repeated Addition 41: Repeated Addition and Multiplication 42: Repeated Subtraction and Division 43: Consolidation (Early Multiplicative Thinking)	
<i>Reflection: How can we represent and solve problems using addition and subtraction?</i>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Parts and Wholes	Big Ideas <ul style="list-style-type: none"> • Quantities and numbers can be grouped by or partitioned into equal-sized units. • Quantities and numbers can be grouped by, and partitioned into, units to determine how many or how much. • 2-D shapes and 3-D solids can be analyzed and classified in different ways by their attributes. 		
Time: 20 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>The Best Birthday</u> - split wholes into equal parts (fractions) - model equal grouping/sharing	
		<u>Family Fun Day</u> - split quantities into equal groups to count to 100 - compose/decompose to 100	
		<u>The Great Dogsled Race</u> - add/subtract to 100 - compare/order numbers	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>Developing an understanding that “wholes” can be decomposed into “parts” and “parts” can be recomposed to make “wholes”</p> <p>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</p> <p>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</p> <p>B1.7 recognize that one third and two sixths of the same whole are equal, in fair-sharing contexts</p> <p>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</p> <p>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</p>	<p><i>-Do students realize that the fractional name tells the number of equal parts (e.g., fourths mean the item is partitioned into 4 equal parts)?</i></p> <p><i>-Are students able to compare fractional parts to determine which is bigger/smaller?</i></p> <p><i>-Are students able to regroup fractional parts to make wholes?</i></p> <p><i>-Do students share the items into the correct number of groups?</i></p> <p><i>-Do students recognize the relationship between opposite groupings (e.g., 2 groups of 6, and 6 groups of 2)?</i></p> <p><i>-Do students recognize that, as the number of students in a group increases, the number of equal groups decreases, and vice versa?</i></p>	<p><u>Number Cluster 4: Early Fractional Thinking</u></p> <p>17: Equal Parts</p> <p>18: Comparing Fractions 1</p> <p>19: Comparing Fractions 2</p> <p>20: Regrouping Fractional Parts</p> <p>21: Partitioning Sets</p> <p>22: Consolidation (Early Fractional Thinking)</p> <p><u>Number Cluster 8: Early Multiplicative Thinking</u></p> <p>38: Making Equal Shares</p> <p>39: Making Equal Groups</p> <p><u>Geometry Cluster 2: Geometric Relationships</u></p> <p>6: Making Shapes</p> <p>9: Covering Outlines</p>	<p><u>Math Every Day Cards, Geometry</u></p> <p>3A: Fill Me In!</p> <p><u>Math Every Day Cards, Number</u></p> <p>4A: Equal Parts from Home; Modelling Fraction Amounts</p> <p>4B: Naming Equal Parts</p> <p>8A: Counting Equal Groups to Find How Many; I Spy</p> <p>8B: How Many Blocks?; How Many Ways?</p>
<p>Reflection: How can we represent, compare and solve fair share problems?</p>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Patterns and Likelihood of Events	<p style="text-align: center;">Big Ideas</p> <ul style="list-style-type: none"> • Regularity and repetition form patterns that can be generalized and predicted mathematically. • Quantities and numbers can be added and subtracted to determine how many or how much. • 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. • Objects can be located in space and viewed from multiple perspectives. 		
Time: 20 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>The Best Surprise</u> - explore growing and shrinking patterns - investigate number patterns	
		<u>Pattern Quest</u> - investigate repeating patterns - investigate growing and shrinking patterns	
		<u>Kokum's Bannock</u> - model and describe equality and inequality - explore properties of addition and subtraction	
Creating patterns and code, and making predictions about them C1.2 create and translate patterns using various representations, including shapes and numbers 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	<i>-Are students able to use the core to create a repeating pattern?</i> <i>-Are students able to accurately predict an element in a repeating pattern? Can they extend the pattern to check?</i> <i>-Are students able to identify a missing element/error in a repeating pattern?</i>	<u>Patterning and Algebra Cluster 1: Repeating Patterns</u> 1: Exploring Patterns 2: Extending and Predicting 3: Errors and Missing Elements 4: Combining Attributes 5: Consolidation (Repeating Patterns)	<u>Math Every Day Cards, Patterning and Algebra</u> 1: Show Another Way 2A: How Many Can We Make?; Error Hunt 2B: Making Increasing Patterns; Making Decreasing Patterns

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
<p>C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential and concurrent events</p> <p>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, predicting the likelihood of an event</p> <p>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</p>	<ul style="list-style-type: none"> -Are students able to create a pattern with two attributes changing? -Are students able to write and explain the pattern rule? -Are students able to extend an increasing pattern by two terms (e.g., does each term grow by the same amount)? -Are students able to show an increasing pattern in different ways? -Can students use words to describe how likely an event is to occur? -Can students use their understanding of how likely an event is to occur to help us make choices? -Are students able to use numbers and arrows to write a code? -Are students able to write a code for someone who is standing in a different location than they are? -When obstacles are added, how do students adjust their code (e.g., start over, or make changes to one part of the code)? 	<p><u>Patterning and Algebra Cluster 2: Increasing/Decreasing Patterns</u></p> <p>6: Increasing Patterns 1 7: Increasing Patterns 2 8: Decreasing Patterns 9: Extending Patterns 10: Reproducing Patterns 11: Creating Patterns 12: Errors and Missing Terms 13: Solving Problems</p> <p>15: Consolidation (Increasing/Decreasing Patterns)</p> <p><u>Data Management and Probability Cluster 2: Probability and Chance</u></p> <p>9: Likelihood of Events 10: Conducting Experiments</p> <p>11: Consolidation (Probability and Chance)</p>	<p><u>Math Every Day Cards, Geometry</u> 4A: Our Design 5: Code of the Day; Wandering Animals</p> <p><u>Math Every Day Cards, Data Management and Probability</u> 2: What’s in the Bag?; Word of the Day</p>
<p>Reflection: How can we create increasing and decreasing patterns and code?</p>			

Ontario Ministry Long Range Plan	Pearson <i>Mathology</i>		
Mathematical Modelling	<p align="center">Big Ideas</p> <p align="center">This is an opportunity to apply mathematical concepts and skills from this grade to solve real-life problems that require the process of mathematical modelling using a variety of Big Ideas.</p>		
Time: 15 days			
Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<p><u>The Money Jar</u> - add/subtract to 100 (further developed) - compose/decompose based on units of 10</p>	
<p>Mathematical Modelling Depending on the real-life situation, coding may be a tool in mathematical modelling C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential and concurrent events 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 * One aspect of the mathematical modelling process is to identify things that change (variable) and things that remain the same.</p>		<p><u>Number Cluster 2: Number Relationships 1</u> 10: Estimating with Benchmarks</p> <p><u>Number Cluster 3: Grouping and Place Value</u> 13: Making a Number Line</p> <p><u>Number Cluster 4: Early Fractional Thinking</u> 17: Equal Parts 18: Comparing Fractions 1</p> <p><u>Number Cluster 5: Number Relationships 2</u> 24: Jumping on the Number Line</p> <p><u>Number Cluster 6: Conceptualizing Addition and Subtraction</u> 28: Solving Problems 1 29: Solving Problems 2 30: Solving Problems 3</p>	

		31: Solving Problems 4	
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Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<p><u>Number Cluster 8: Early Multiplicative Thinking</u> 38: Making Equal Shares 39: Making Equal Groups</p> <p><u>Number Cluster 9: Financial Literacy</u> 45: Earning Money</p> <p><u>Patterning and Algebra Cluster 1: Repeating Patterns</u> 2: Extending and Predicting 5: Consolidation (Repeating Patterns)</p> <p><u>Patterning and Algebra Cluster 2: Increasing/Decreasing Patterns</u> 9: Extending Patterns 10: Reproducing Patterns 14: Patterns in Number Relationships</p> <p><u>Geometry Cluster 4: Coding</u> 17: Writing Code to Solve Problems</p> <p><u>Data Management and Probability Cluster 1: Data Management</u> 4: Creating a Survey 6: Making Graphs 2 8: Consolidation (Data Management)</p>	

Questions and Expectations	What to Look For	Little Books /Activity	Math Every Day Tasks
		<u>Data Management and Probability Cluster 2: Probability and Chance</u> 10: Conducting Experiments <u>Measurement Cluster 1: Using Non-Standard Units</u> 3: Measuring Distance Around <u>Measurement Cluster 2: Using Standard Units</u> 5: Benchmarks and Estimation 8: Metres or Centimetres?	
<p><i>Reflection: How can we apply mathematical concepts and skills to solve real-life problems?</i></p>			