Ontario Ministry Sample Long Range Planner: By Topic and Mathology Grade 5

Time: 10 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Attributes and Numbers **Introduce and apply throughout the year as appropriate** B2.2 recall and demonstrate multiplication facts from 0 × 0 to 12 × 12, and related division facts B2.3 use mental math strategies to multiply whole numbers by 0.1 and 0.01 and estimate sums and differences of decimal numbers up to hundredths, and explain the strategies used	Number Unit 4: Fluency with Multiplication and Division 19: Relating Multiplication and Division Facts 20: Using Estimation for Multiplication and Division
Extending place value to 100 000 and decimal hundredths B1.1 read, represent, compose, and decompose whole numbers up to and including 100 000, using appropriate tools and strategies, and describe various ways they are used in everyday life B1.5 read, represent, compare, and order decimal numbers up to hundredths, in various contexts C1.4 create and describe patterns to illustrate relationships among whole numbers and decimal tenths and hundredths	Number Unit 1: Number Relationships and Place Value 1: Representing Larger Numbers Number Unit 3: Fractions and Decimals 12: Comparing and Ordering Fractions 13: Representing Decimals 15: Comparing and Ordering Decimals ***18: Consolidation (Fractions and Decimals)*** Patterning Unit 1: Patterning 3: Using Pattern Rules to Solve Problems ***4: Consolidation (Patterning)***
Using characteristics to classify C1.1 identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts E1.1 identify geometric properties of triangles, and construct different types of triangles when given side or angle measurements	Patterning Unit 1: Patterning 1: Investigating Geometric Patterns 2: Investigating Number Patterns 3: Using Pattern Rules to Solve Problems Geometry Unit 1B: 2-D Shapes, Angles, and 3-D Solids 2: Properties of Triangles 3: Identifying and Constructing Triangles

Time: 10 Days	
Ontario Ministry Topics and Expectations	**Pearson Mathology Lessons**
Facts, Expressions and Equations including the Area of Parallelograms and Triangles **Developing multiplication facts using the area of a rectangle** B2.2 recall and demonstrate multiplication facts from 0 × 0 to 12 × 12, and related division facts E2.5 use the area relationships among rectangles, parallelograms, and triangles to develop the formulas for the area of a parallelogram and the area of a triangle, and solve related problems E2.6 show that two-dimensional shapes with the same area can have different perimeters, and solve related problems	Number Unit 4: Fluency with Multiplication and Division 19: Relating Multiplication and Division Facts Measurement Unit 1: Length, Perimeter, and Area 1: Estimating and Measuring in Millimetres 2: Measuring Length in Different Units 4: Relating the Perimeter and Area of Rectangles 5: Areas of Parallelograms and Triangles *6: Consolidation (Length, Perimeter, and Area)*
Understanding and working with expressions and equations B2.1 use the properties of operations, and the relationships between operations, to solve problems involving whole numbers and decimal numbers, including those requiring more than one operation, and check calculations C2.1 translate among words, algebraic expressions, and visual representations that describe equivalent relationships C2.3 solve equations that involve whole numbers up to 100 in various contexts, and verify solutions C2.2 evaluate algebraic expressions that involve whole numbers	Number Unit 1: Number Relationships and Place Value 2: Comparing Larger Numbers 3: Estimating to Solve Problems Patterning Unit 2: Variables and Equations 5: Using Variables 6: Solving Addition and Subtraction Equations 7: Solving Multiplication and Division Equations 8: Using Equations to Solve Problems

Time: 10 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Number Patterns and Number Relationships **Representing fractions and showing equivalences to decimals and percents** B1.3 represent equivalent fractions from halves to twelfths, including improper fractions and mixed numbers, using appropriate tools, in various contexts B1.7 describe relationships and show equivalences among fractions, decimal numbers up to hundredths, and whole number percents, using appropriate tools and drawings, in various contexts B2.5 add and subtract fractions with like denominators, in various contexts	Number Unit 3: Fractions and Decimals 10: Equivalent Fractions 11: Exploring Improper Fractions and Mixed Numbers 12: Comparing and Ordering Fractions Number Unit 5: Operations with Fractions and Decimals 29: Adding and Subtracting Fractions with Like Denominators Number Unit 6: Financial Literacy 33: Exploring Taxes 34: Problem Solving with Money

Time: 30 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Collection, Organization, Representation, and Analysis of Data, and Introduction to Mathematical Modelling **Collecting, organizing, and representing data** B1.7 describe relationships and show equivalences among fractions, decimal numbers up to hundredths, and whole number percents, using appropriate tools and drawings, in various contexts D1.1 explain the importance of various sampling techniques for collecting a sample of data that is representative of a population D1.2 collect data, using appropriate sampling techniques as needed, to answer questions of interest about a population, and organize the data in relative-frequency tables D1.3 select from among a variety of graphs, including stacked-bar graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs D1.4 create an infographic about a data set, representing the data in appropriate ways, including in relative-frequency tables and stacked-bar graphs, and incorporating any other relevant information that helps to tell a story about the data	Number Unit 3: Fractions and Decimals 16: Relating Fractions and Decimals 17: Relating Fractions, Decimals, and Percents Data Management and Probability Unit 1B: Data Management 1: Collecting and Organizing Data 2: Exploring Relative Frequency Tables 5: Measures of Central Tendency

Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Analyzing data using mean, median, and mode D1.5 determine the mean and the median and identify the mode(s), if any, for various data sets involving whole numbers and decimal numbers, and explain what each of these measures indicates about the data D1.6 analyze different sets of data presented in various ways, including in stacked-bar graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions	Data Management and Probability Unit 1B: Data Management 3: Exploring Stacked Bar Graphs 4: Analyzing Graphs 5: Measures of Central Tendency 6: Creating an Infographic
Posing a real-life situation that requires the process of mathematical modelling and involves the collection, organization, representation and analysis of data. * C4 apply the process of mathematical modelling to represent, analyze, make predictions, and provide insight into real-life situations** * Depending on the situation, it may be appropriate to complete the mathematical modelling task now or continue as new learning is acquired. ** One aspect of the mathematical modelling process is to identify things that change (variable) and things that remain the same.	Number Unit 1: Number Relationships and Place Value 3: Estimating to Solve Problems Number Unit 2: Fluency with Addition and Subtraction 7: Exploring Subtraction Strategies Number Unit 3: Fractions and Decimals 10: Equivalent Fractions Number Unit 4: Fluency with Multiplication and Division 20: Using Estimation for Multiplication and Division Number Unit 5: Operations with Fractions and Decimals 27: Adding with Decimal Numbers 30: Multiplication and Division with Unit Fractions Number Unit 6: Financial Literacy 34: Problem Solving with Money Patterning Unit 1: Patterning 3: Using Pattern Rules to Solve Problems Patterning Unit 2: Variables and Equations 8: Using Equations to Solve Problems Patterning Unit 3: Coding 11: Altering Dance Code Measurement Unit 1: Length, Perimeter, and Area 4: Relating the Perimeter and Area of Rectangles

	Measurement Unit 2: Mass, Capacity, and Volume 8: Investigating Capacity
	Data Management and Probability Unit 1B: Data Management 4: Analyzing Graphs
	Data Management and Probability Unit 2: Probability 8: Conducting Experiments

Time: 10 Days	
Ontario Ministry Topics and Expectations	**Pearson Mathology Lessons**
Transformations and Coding **Creating, describing, and performing transformations** E1.4 plot and read coordinates in the first quadrant of a Cartesian plane using various scales, and describe the translations that move a point from one coordinate to another E1.5 describe and perform translations, reflections, and rotations up to 180 on a grid, and predict the results of these transformations C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structures C3.2 read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes	Geometry Unit 2: Grids and Transformations 7: Plotting and Reading Coordinates 8: Translating and Reflecting 2-D Shapes 9: Rotating 2-D Shapes 10: Identifying Transformations ***11: Consolidation (Grids and Transformations)*** Patterning Unit 3: Coding 11: Altering Dance Code 12: Making Shapes 13: Classifying Triangles ***14: Consolidation (Coding)***

Time: 10 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Comparison of Measures, Quantities and Expressions **Comparing measures** E1.2 identify and construct congruent triangles, rectangles, and parallelograms E2.1 use appropriate metric units to estimate and measure length, area, mass, and capacity E2.3 compare angles and determine their relative size by matching them and by measuring them using appropriate non-standard units E2.4 explain how protractors work, use them to measure and construct angles up to 180, and use benchmark angles to estimate the size of other angles	Measurement Unit 1: Length, Perimeter, and Area 1: Estimating and Measuring in Millimetres 2: Measuring Length in Different Units Measurement Unit 2: Mass, Capacity, and Volume 7: Investigating Mass 8: Investigating Capacity 9: Investigating Relationships Among Units ***12: Consolidation (Mass, Capacity, and Volume)*** Geometry Unit 1B: 2-D Shapes, Angles, and 3-D Solids 1: Measuring and Comparing Angles 4: Identifying and Constructing Congruent 2-D Shapes 5: Drawing Views ***6: Consolidation (2-D Shapes, Angles, and 3-D Solids)*** Patterning Unit 3: Coding 11: Altering Dance Code 12: Making Shapes 13: Classifying Triangles
Comparing whole numbers, fractions and decimal tenths B1.2 compare and order whole numbers up to and including 100 000, in various contexts B1.4 compare and order fractions from halves to twelfths, including improper fractions and mixed numbers, in various contexts B1.5 read, represent, compare, and order decimal numbers up to hundredths, in various contexts E2.2 solve problems that involve converting larger metric units into smaller ones, and describe the base ten relationships among metric units	Number Unit 1: Number Relationships and Place Value 2: Comparing Larger Numbers ***4: Consolidation (Number Relationships and Place Value)*** Number Unit 3: Fractions and Decimals 12: Comparing and Ordering Fractions 13: Representing Decimals 15: Comparing and Ordering Decimals ***18: Consolidation (Fractions and Decimals)***
Comparing two expressions C2.4 solve inequalities that involve one operation and whole numbers up to 50, and verify and graph the solutions	Patterning Unit 2: Variables and Equations 9: Solving and Graphing Inequalities ***10: Consolidation (Variables and Equations)***

Time: 10 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Proportional Relationships and Measurements Using proportional reasoning B2.3 use mental math strategies to multiply whole numbers by 0.1 and 0.01 and estimate sums and differences of decimal numbers up to hundredths, and explain the strategies used E2.2 solve problems that involve converting larger metric units into smaller ones, and describe the base ten relationships among metric units B2.9 represent and create equivalent ratios and rates, using a variety of tools and models, in various contexts F1.5 calculate unit rates for various goods and services, and identify which rates offer the best value	Number Unit 5: Operations with Fractions and Decimals 26: Estimating Sums and Differences with Decimals 31: Multiplication with 0.01 and 0.1 Measurement Unit 1: Length, Perimeter, and Area 1: Estimating and Measuring in Millimetres 2: Measuring Length in Different Units Number Unit 4: Fluency with Multiplication and Division 24: Equivalent Ratios and Rates Number Unit 6: Financial Literacy 36: Finding Best Value (Unit Rates)

Time: 15 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Patterns and Probability **Creating patterns and code, and making predictions about them** C1.1 identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts C1.2 create and translate growing and shrinking patterns using various representations, including tables of values and graphs C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structures C3.2 read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes	Patterning Unit 1: Patterning 1: Investigating Geometric Patterns 2: Investigating Number Patterns 3: Using Pattern Rules to Solve Problems *4: Consolidation (Patterning)* Patterning Unit 3: Coding 11: Altering Dance Code 12: Making Shapes 13: Classifying Triangles *14: Consolidation (Coding)*
Expressing and predicting probability D2.1 use fractions to express the probability of events happening, represent this probability on a probability line, and use it to make predictions and informed decisions D2.2 determine and compare the theoretical and experimental probabilities of an event happening	Data Management and Probability Unit 2: Probability 7: Describing Likelihood of Events 8: Conducting Experiments 9: Designing Experiments *10: Consolidation (Probability)*

Time: 30 Days	
Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Operations and Measurements **Developing fluency with adding, subtracting, multiplying, and dividing** B1.6 round decimal numbers to the nearest tenth, in various contexts B2.1 use the properties of operations, and the relationships between operations, to solve problems involving whole numbers and decimal numbers, including those requiring more than one operation, and check calculations B2.4 represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 100 000, and of decimal numbers up to hundredths, using appropriate tools, strategies, and algorithms B2.5 add and subtract fractions with like denominators, in various contexts B2.6 represent and solve problems involving the multiplication of two-digit whole numbers by two-digit whole numbers using the area model and using algorithms, and make connections between the two methods B2.7 represent and solve problems involving the division of three-digit whole numbers by two-digit whole numbers using the area model and using algorithms, and make connections between the two methods, while expressing any remainder appropriately B2.8 multiply and divide one-digit whole numbers by unit fractions, using appropriate tools and drawings	Number Unit 1: Number Relationships and Place Value 2: Comparing Larger Numbers 3: Estimating to Solve Problems Number Unit 2: Fluency with Addition and Subtraction 5: Estimating Sums and Differences 6: Exploring Addition Strategies 7: Exploring Subtraction Strategies ***9: Consolidation (Fluency with Addition and Subtraction)*** Number Unit 3: Fractions and Decimals 14: Rounding Decimals ***18: Consolidation (Fractions and Decimals)*** Number Unit 4: Fluency with Multiplication and Division 22: Multiplying Whole Numbers 23: Dividing Larger Numbers ***25: Consolidation (Fluency with Multiplication and Division)*** Number Unit 5: Operations with Fractions and Decimals 27: Adding with Decimal Numbers 28: Subtracting with Decimal Numbers 30: Multiplication and Division with Unit Fractions ***32: Consolidation (Operations with Fractions and Decimals)*** Number Unit 6: Financial Literacy 33: Exploring Taxes 34: Problem Solving with Money 36: Finding Best Value (Unit Rates) 37: Designing a Basic Budget ***38: Consolidation (Financial Literacy)***

Ontario Ministry Topics and Expectations	Pearson Mathology Lessons
Understanding and working with expressions and equations C2.1 translate among words, algebraic expressions, and visual representations that describe equivalent relationships C2.2 evaluate algebraic expressions that involve whole numbers	Patterning Unit 2: Variables and Equations 5: Using Variables

Time: 10 Days	
Ontario Ministry Topics and Expectations	**Pearson Mathology Lessons**
Financial Literacy and Operations Involving Money **Developing financial concepts** F1.1 describe several ways money can be transferred among individuals, organizations, and businesses F1.3 design sample basic budgets to manage finances for various earning and spending scenarios F1.4 explain the concepts of credit and debt, and describe how financial decisions may be impacted by each F1.6 describe the types of taxes that are collected by the different levels of government in Canada, and explain how tax revenue is used to provide services in the community	Number Unit 6: Financial Literacy 33: Exploring Taxes 35: Credit, Debt, and Transfers 37: Designing a Basic Budget ***38: Consolidation (Financial Literacy)***
Using operations and mental math to solve problems involving purchases F1.2 estimate and calculate the cost of transactions involving multiple items priced in dollars and cents, including sales tax, using various strategies B2.1 use the properties of operations, and the relationships between operations, to solve problems involving whole numbers and decimal numbers, including those requiring more than one operation, and check calculations C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structures C3.2 read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes	Number Unit 1: Number Relationships and Place Value 2: Comparing Larger Numbers 3: Estimating to Solve Problems Number Unit 6: Financial Literacy 33: Exploring Taxes 34: Problem Solving with Money 36: Finding Best Value (Unit Rates) 37: Designing a Basic Budget ***38: Consolidation (Financial Literacy)*** Patterning Unit 3: Coding 11: Altering Dance Code 12: Making Shapes 13: Classifying Triangles ***14: Consolidation (Coding)***

Time: 10 Days	
Ontario Ministry Topics and Expectations	**Pearson Mathology Lessons**
Integrated Task 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*. 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 conditional statements and other control structures C3.2 read and alter existing code, including code that involves conditional statements and other control structures, 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. Variables may be used to represent quantities that will change.	Number Unit 1: Number Relationships and Place Value 3: Estimating to Solve Problems Number Unit 2: Fluency with Addition and Subtraction 7: Exploring Subtraction Strategies Number Unit 3: Fractions and Decimals 10: Equivalent Fractions Number Unit 4: Fluency with Multiplication and Division 20: Using Estimation for Multiplication and Division Number Unit 5: Operations with Fractions and Decimals 27: Adding with Decimal Numbers 30: Multiplication and Division with Unit Fractions Number Unit 6: Financial Literacy 34: Problem Solving with Money Patterning Unit 1: Patterning 3: Using Pattern Rules to Solve Problems Patterning Unit 2: Variables and Equations 8: Using Equations to Solve Problems Patterning Unit 3: Coding 11: Altering Dance Code Measurement Unit 1: Length, Perimeter, and Area 4: Relating the Perimeter and Area of Rectangles Measurement Unit 2: Mass, Capacity, and Volume 8: Investigating Capacity Data Management and Probability Unit 1B: Data Management 4: Analyzing Graphs Data Management and Probability Unit 2: Probability 8: Conducting Experiments