**Ontario Ministry Sample Long Range Planner: By Topic**

**and Mathology Grade 5**

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| 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 factsB2.3 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 Division19: Relating Multiplication and Division Facts20: 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 lifeB1.5 read, represent, compare, and order decimal numbers up to hundredths, in various contextsC1.4 create and describe patterns to illustrate relationships among whole numbers and decimal tenths and hundredths | Number Unit 1: Number Relationships and Place Value1: Representing Larger NumbersNumber Unit 3: Fractions, Decimals, and Percents12: Comparing and Ordering Fractions13: Representing Decimals15: Comparing and Ordering Decimals***18: Consolidation (Fractions, Decimals, and Percents)***Patterning Unit 1: Patterning3: 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 contextsE1.1 identify geometric properties of triangles, and construct different types of triangles when given side or angle measurements | Patterning Unit 1: Patterning1: Investigating Geometric Patterns2: Investigating Number Patterns3: Using Pattern Rules to Solve ProblemsGeometry Unit 1B: 2-D Shapes, Angles, and 3-D Solids2: Properties of Triangles3: Identifying and Constructing Triangles |

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| **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 factsE2.5 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 problemsE2.6 show that two-dimensional shapes with the same area can have different perimeters, and solve related problems | Number Unit 4: Fluency with Multiplication and Division19: Relating Multiplication and Division FactsMeasurement Unit 1: Length, Perimeter, and Area1: Estimating and Measuring in Millimetres2: Measuring Length in Different Units4: Relating the Perimeter and Area of Rectangles5: 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 calculationsC2.1 translate among words, algebraic expressions, and visual representations that describe equivalent relationshipsC2.3 solve equations that involve whole numbers up to 100 in various contexts, and verify solutionsC2.2 evaluate algebraic expressions that involve whole numbers | Number Unit 1: Number Relationships and Place Value2: Comparing Larger Numbers3: Estimating to Solve ProblemsPatterning Unit 2: Variables and Equations5: Using Variables6: Solving Addition and Subtraction Equations7: Solving Multiplication and Division Equations8: Using Equations to Solve Problems |

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| **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 contextsB1.7 describe relationships and show equivalences among fractions, decimal numbers up to hundredths, and whole number percents, using appropriate tools and drawings, in various contextsB2.5 add and subtract fractions with like denominators, in various contexts | Number Unit 3: Fractions, Decimals, and Percents10: Equivalent Fractions11: Exploring Improper Fractions and Mixed Numbers12: Comparing and Ordering FractionsNumber Unit 5: Operations with Decimals and Fractions29: Adding and Subtracting Fractions with Like DenominatorsNumber Unit 6: Financial Literacy33: Exploring Taxes34: Problem Solving with Money  |

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| Time: 30 Days |
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| **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 contextsD1.1 explain the importance of various sampling techniques for collecting a sample of data that is representative of a populationD1.2 collect data, using appropriate sampling techniques as needed, to answer questions of interest about a population, and organize the data in relative-frequency tablesD1.3 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 graphsD1.4 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, Decimals, and Percents16: Relating Fractions and Decimals17: Relating Fractions, Decimals, and PercentsData Management and Probability Unit 1B: Data Management1: Collecting and Organizing Data2: Exploring Relative Frequency Tables5: Measures of Central Tendency |

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| **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 dataD1.6 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 Management3: Exploring Stacked Bar Graphs4: Analyzing Graphs5: Measures of Central Tendency6: 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 Value3: Estimating to Solve ProblemsNumber Unit 2: Fluency with Addition and Subtraction7: Exploring Subtraction StrategiesNumber Unit 3: Fractions, Decimals, and Percents10: Equivalent FractionsNumber Unit 4: Fluency with Multiplication and Division20: Using Estimation for Multiplication and DivisionNumber Unit 5: Operations with Decimals and Fractions27: Adding with Decimal Numbers30: Multiplication and Division with Unit FractionsNumber Unit 6: Financial Literacy34: Problem Solving with MoneyPatterning Unit 1: Patterning3: Using Pattern Rules to Solve ProblemsPatterning Unit 2: Variables and Equations8: Using Equations to Solve ProblemsPatterning Unit 3: Coding11: Altering Dance CodeMeasurement Unit 1: Length, Perimeter, and Area4: Relating the Perimeter and Area of RectanglesMeasurement Unit 2: Capacity and Mass8: Investigating CapacityData Management and Probability Unit 1B: Data Management 4: Analyzing GraphsData Management and Probability Unit 2: Probability8: Conducting Experiments |

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| **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 anotherE1.5 describe and perform translations, reflections, and rotations up to 180 on a grid, and predict the results of these transformationsC3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structuresC3.2 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 Transformations7: Plotting and Reading Coordinates8: Translating and Reflecting 2-D Shapes9: Rotating 2-D Shapes10: Identifying Transformations***11: Consolidation (Grids and Transformations)***Patterning Unit 3: Coding11: Altering Dance Code12: Making Shapes13: Classifying Triangles***14: Consolidation (Coding)*** |

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| **Comparison of Measures, Quantities and Expressions****Comparing measures**E1.2 identify and construct congruent triangles, rectangles, and parallelogramsE2.1 use appropriate metric units to estimate and measure length, area, mass, and capacityE2.3 compare angles and determine their relative size by matching them and by measuring them using appropriate non-standard unitsE2.4 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 Area1: Estimating and Measuring in Millimetres2: Measuring Length in Different UnitsMeasurement Unit 2: Capacity and Mass 7: Investigating Mass8: Investigating Capacity9: Investigating Relationships Among Units***12: Consolidation (Capacity and Mass)***Geometry Unit 1B: 2-D Shapes, Angles, and 3-D Solids1: Measuring and Comparing Angles4: Identifying and Constructing Congruent 2-D Shapes5: Drawing Views***6: Consolidation (2-D Shapes, Angles, and 3-D Solids)***Patterning Unit 3: Coding11: Altering Dance Code12: Making Shapes13: Classifying Triangles |
| **Comparing whole numbers, fractions and decimal tenths**B1.2 compare and order whole numbers up to and including 100 000, in various contextsB1.4 compare and order fractions from halves to twelfths, including improper fractions and mixed numbers, in various contextsB1.5 read, represent, compare, and order decimal numbers up to hundredths, in various contextsE2.2 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 Value2: Comparing Larger Numbers***4: Consolidation (Number Relationships and Place Value)***Number Unit 3: Fractions, Decimals, and Percents12: Comparing and Ordering Fractions13: Representing Decimals15: Comparing and Ordering Decimals***18: Consolidation (Fractions, Decimals, and Percents)*** |
| **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 Equations9: Solving and Graphing Inequalities***10: Consolidation (Variables and Equations)*** |

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| **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 usedE2.2 solve problems that involve converting larger metric units into smaller ones, and describe the base ten relationships among metric unitsB2.9 represent and create equivalent ratios and rates, using a variety of tools and models, in various contextsF1.5 calculate unit rates for various goods and services, and identify which rates offer the best value | Number Unit 5: Operations with Decimals and Fractions26: Estimating Sums and Differences with Decimals31: Multiplication with 0.01 and 0.1Measurement Unit 1: Length, Perimeter, and Area1: Estimating and Measuring in Millimetres2: Measuring Length in Different UnitsNumber Unit 4: Fluency with Multiplication and Division24: Equivalent Ratios and RatesNumber Unit 6: Financial Literacy36: Finding Best Value (Unit Rates) |

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| Time: 15 Days |
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| **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 contextsC1.2 create and translate growing and shrinking patterns using various representations, including tables of values and graphsC1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patternsC3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structuresC3.2 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: Patterning1: Investigating Geometric Patterns2: Investigating Number Patterns3: Using Pattern Rules to Solve Problems***4: Consolidation (Patterning)***Patterning Unit 3: Coding11: Altering Dance Code12: Making Shapes13: 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 decisionsD2.2 determine and compare the theoretical and experimental probabilities of an event happening | Data Management and Probability Unit 2: Probability7: Describing Likelihood of Outcomes8: Conducting Experiments9: Designing Experiments***10: Consolidation (Probability)*** |

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| **Operations and Measurements****Developing fluency with adding, subtracting, multiplying, and dividing**B1.6 round decimal numbers to the nearest tenth, in various contextsB2.1 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 calculationsB2.4 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 algorithmsB2.5 add and subtract fractions with like denominators, in various contextsB2.6 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 methodsB2.7 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 appropriatelyB2.8 multiply and divide one-digit whole numbers by unit fractions, using appropriate tools and drawings | Number Unit 1: Number Relationships and Place Value2: Comparing Larger Numbers3: Estimating to Solve ProblemsNumber Unit 2: Fluency with Addition and Subtraction5: Estimating Sums and Differences6: Exploring Addition Strategies7: Exploring Subtraction Strategies***9: Consolidation (Fluency with Addition and Subtraction)***Number Unit 3: Fractions, Decimals, and Percents14: Rounding Decimals***18: Consolidation (Fractions, Decimals, and Percents)***Number Unit 4: Fluency with Multiplication and Division22: Multiplying Whole Numbers23: Dividing Larger Numbers***25: Consolidation (Fluency with Multiplication and Division)***Number Unit 5: Operations with Decimals and Fractions27: Adding with Decimal Numbers28: Subtracting with Decimal Numbers30: Multiplication and Division with Unit Fractions***32: Consolidation (Operations with Decimals and Fractions)***Number Unit 6: Financial Literacy33: Exploring Taxes34: Problem Solving with Money36: Finding Best Value (Unit Rates)37: Designing a Basic Budget***38: Consolidation (Financial Literacy)*** |

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| **Understanding and working with expressions and equations**C2.1 translate among words, algebraic expressions, and visual representations that describe equivalent relationshipsC2.2 evaluate algebraic expressions that involve whole numbers | Patterning Unit 2: Variables and Equations5: Using Variables |

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| **Financial Literacy and Operations Involving Money****Developing financial concepts**F1.1 describe several ways money can be transferred among individuals, organizations, and businessesF1.3 design sample basic budgets to manage finances for various earning and spending scenariosF1.4 explain the concepts of credit and debt, and describe how financial decisions may be impacted by eachF1.6 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 Literacy33: Exploring Taxes35: Credit, Debt, and Transfers37: 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 strategiesB2.1 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 calculationsC3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional statements and other control structuresC3.2 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 Value2: Comparing Larger Numbers3: Estimating to Solve ProblemsNumber Unit 6: Financial Literacy33: Exploring Taxes34: Problem Solving with Money36: Finding Best Value (Unit Rates)37: Designing a Basic Budget***38: Consolidation (Financial Literacy)***Patterning Unit 3: Coding11: Altering Dance Code12: Making Shapes13: Classifying Triangles***14: Consolidation (Coding)*** |

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| **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 structuresC3.2 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 Value3: Estimating to Solve ProblemsNumber Unit 2: Fluency with Addition and Subtraction7: Exploring Subtraction StrategiesNumber Unit 3: Fractions, Decimals, and Percents10: Equivalent FractionsNumber Unit 4: Fluency with Multiplication and Division20: Using Estimation for Multiplication and DivisionNumber Unit 5: Operations with Decimals and Fractions27: Adding with Decimal Numbers30: Multiplication and Division with Unit FractionsNumber Unit 6: Financial Literacy34: Problem Solving with MoneyPatterning Unit 1: Patterning3: Using Pattern Rules to Solve ProblemsPatterning Unit 2: Variables and Equations8: Using Equations to Solve ProblemsPatterning Unit 3: Coding11: Altering Dance CodeMeasurement Unit 1: Length, Perimeter, and Area4: Relating the Perimeter and Area of RectanglesMeasurement Unit 2: Capacity and Mass8: Investigating CapacityData Management and Probability Unit 1B: Data Management 4: Analyzing GraphsData Management and Probability Unit 2: Probability8: Conducting Experiments |