# Yearly Plan
# Mathematics 2

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The following is a yearly plan for Mathematics 2. The plan is divided into twelve units of varying lengths. Daily mental mathematics and number routines for each term are provided in the first column of the plan. The second column identifies the unit number and focus. The third column identifies the suggested time for the unit. Specific outcomes to be addressed in the unit are provided in column four. A detailed description of the unit is provided in column five. Column six provides a list of resources to help you plan your unit and lessons. It should be noted that the curriculum document for Mathematics 3 describes learning opportunities and assessment tasks for each of the outcomes in the unit. This yearly plan also provides connections to the units, lessons, and learning opportunities in the core resource for grade 2, *Math Makes Sense 2*. These connections can be found in the last column. The Activity Banks, Unit Centres, Investigations, Take Home Stories, Math Every Day, and Math at Home Magazine contained within the core resource provide additional learning opportunities and tasks for consolidation of the outcomes described in this yearly plan.

| **The Year at a Glance** | | |
|---|---|---|
| **Unit # and Title** | **Time Frame** | **Outcomes** |
| Unit 1 Numbers to 100 | 3 weeks | N01, N02, N04, N06, N08, PR02, PR03, PR04 |
| Unit 2 Patterning with Geometry and Time | 3 weeks | G01, PR01, M01, N03 |
| Unit 3 Extending Number Sense – Place Value (Tens and Ones) | 4 weeks | N01, N02, N04, N05, N06, N07, N08, PR03, PR04 |
| Unit 4 Measurement (Time) and Statistics | 2 weeks | SP01, SP02, M01, N03 |
| Unit 5 Addition and Subtraction (one-digit numbers) | 4 weeks | N04, N08, N10, N09, N07, N01, PR02, PR03, PR04 |
| Unit 6 Geometry and Patterning | 2 weeks | G01, G02, G03, PR01, PR02, N07, N04, N05 |
| Unit 7 Addition and Subtraction (one- and two-digit numbers) and Extending Number Sense - Place Value | 4 weeks | N09, N10, N04, N05, N06, N07, N08, PR03, PR04 |
| Unit 8 Measurement - Mass | 2 weeks | M02, M03, M05 |
| Unit 9 Measurement – Length, Height, and Distance Around) and Statistics | 2 weeks | M02, M03, M04, M05, SP01, SP02 |
| Unit 10 Addition and Subtraction of Numbers to 100 and Extending Number Sense - Place Value | 4 weeks | N07, N09, PR03, PR04, SP01, SP02 |
| Unit 11 Geometry | 3 weeks | G02, G03, G04 |
| Unit 12 Addition and Subtraction of Numbers to 100 and Extending Number Sense - Place Value | 3 weeks | N01, N02, PR02, N07, N09, PR03, PR04 |

| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. *Note: Calendar work will be introduced in September, but should be revisited regularly throughout the year.*<br>**N06** Students will be expected to estimate quantities to 100 by using referents. | Unit 1<br><br>Numbers to 100 | 3 weeks | **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N02** Students will be expected to demonstrate if a number (up to 100) is even or odd.<br>**N04** Students will be expected to represent and partition numbers to 100.<br>**N06** Students will be expected to estimate quantities to 100 by using referents.<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**PR02** Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, comparing, and creating numerical patterns (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds, and actions.<br>**PR03** Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).<br>**PR04** Students will be expected to record equalities and inequalities, symbolically, using the equal symbol or not equal symbol. | In this first unit focused on number, students will begin to explore big ideas about number using concrete materials, pictures, oral and written language, and written symbols. They will say the number sequence forward and backward from 1 to 100. They will skip count forward by 2s, 5s and 10s to 100 and will look for patterns as they skip count. As they skip count by 2s, they will explore even and odd numbers to 100. They will use skip counting to count a given sum of money (coins). They will recognize and correct errors or omissions in a given number sequence or on a hundred chart. As they work to develop meaning for numbers to 100, they will count collections of objects and will begin to represent and partition numbers. They will estimate the size of a given set by comparing the set to a referent. They will name the number in a given set and record the number of objects using numerals. They will read and represent numbers to 100 in a variety of ways with manipulatives, pictures, coins, and numerals. They will explain why for a given number, no matter how it is represented, grouped, or counted, the total does not change. They will explore number relationships and will partition numbers into two or more parts. As students explore relationships and representation of numbers, they will also explore equality and inequality concretely, pictorially, and symbolically. They will build sets of a given size (up to 100) and represent a given number using expressions. They will compare sets to determine if the sets are equal or not equal. They will use language such as more than, fewer than and the same as to describe the comparison. They will build sets of objects with more, fewer, or as many objects as a given set. As part of daily mental mathematics, students will be introduced to mental mathematics strategies for basic addition facts to 18 and related subtraction facts. Through daily mental mathematics activities, it is expected that, by the end of the year, students will learn, and apply the strategies to recall their addition facts to 18 and to determine related subtraction facts. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Investigation 1<br><br>Unit 2<br>Lessons<br>1 to 7<br><br>Unit 3<br>Lessons<br>9 to 12 |

| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 2<br><br>Patterning with Geometry and Time | 3 weeks | **G01** Students will be expected to sort 2-D shapes and 3-D objects using two attributes and explain the sorting rule.<br>**PR01** Students will be expected to demonstrate an understanding of repeating patterns (three to five elements) by describing, extending, comparing, and creating patterns using manipulatives, diagrams, sounds, and actions.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years.<br>**N03** Students will be expected to describe order or relative position using ordinal numbers (up to tenth). | This unit focuses on repeating patterns and gives students the opportunity to explore geometry and time. Students will recognize, identify, and describe repeating patterns (three to five elements). They will recognize the core of a given repeating pattern. They will explore ordinals to tenth and will predict an element (up to the tenth element) in a repeating pattern using a variety of strategies. They will extend the pattern to confirm their prediction. They will identify errors and missing elements in repeating patterns. They will create a variety of repeating patterns using manipulatives, diagrams, sounds, and actions. They will translate patterns from one representation to another and will use letter codes to describe repeating patterns. They will compare two given repeating patterns, and describe how they are alike and how they are different. As they pattern, they will compare, describe, and sort 3-D objects and 2-D shapes. They will identify and describe their sorting rule. Students will explore the patterns in the calendar. They will read a calendar. They will name and order the days of the week and the months of the year, and will tell the number of days in a week and the number of months in a year. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 1<br>Lessons 1-4<br><br>Unit 6<br>Lessons 1, 2, 4, 5 |

| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years.<br>**N02** Students will be expected to demonstrate if a number (up to 100)<br>is even or odd.<br>**N03** Students will be expected to describe order or relative position using ordinal numbers (up to tenth). | Unit 3<br><br>Extending Number Sense – Place Value (Tens and Ones) | 4 weeks | **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N02** Students will be expected to demonstrate if a number (up to 100) is even or odd.<br>**N04** Students will be expected to represent and partition numbers to 100.<br>**N05** Students will be expected to compare and order numbers up to 100.<br>**N06** Students will be expected to estimate quantities to 100 by using referents.<br>**N07** Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**PR03**Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).<br>**PR04**Students will be expected to record equalities and inequalities, symbolically, using the equal symbol or not equal symbol. | This second unit on number will allow students to continue to represent, partition, compare and order numbers to 100, and to begin to develop understanding of place value (groups of 10s and 1s) using concrete materials, pictures, oral and written language, and written symbols. They will say the number sequence forward and backward from 1 to 100. They will skip count forward and backward by 2s, 5s and 10s to 100 and will look for patterns as they skip count. Counting money will provide a context for skip counting by 5s and 10s. They will use the strategy of counting on from a known quantity. They will recognize and correct errors and omissions in a given number sequence or on a hundred chart. They will continue to explore even and odd numbers to 100 and ordinals to tenth. As they continue to develop meaning for numbers to 100, they will organize the objects in a given set into groups of 10s and 1s to make counting easier and will record the 2-digit numeral represented by the objects. They will explain why the value of the digit depends upon its placement within the numeral. They will estimate the size of a given set by comparing the given set to a referent and to a group of 10. They will read and represent numbers to 100 in a variety of ways with manipulatives, pictures, coins, and numerals. They will explain why for a given number, no matter how it is represented, grouped, or counted, the total does not change. They will explore number relationships and will partition numbers into two or more parts. As students explore relationships and representations of numbers, they will also model equality and inequality concretely, pictorially, and symbolically. They will determine whether two given quantities are equal or not equal. They will construct sets of a given size (up to 100) that are equal or unequal. They will change two given sets, equal in number, to create an inequality. They will compare sets to determine if the sets are equal or not equal. They will use language to describe the comparison. They will determine if two sides of a given number sentence are equal or not equal and will record the relationship using the appropriate symbol. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 2 Lessons 8 to 15 |
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|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 4<br><br>Measurement (Time) and Statistics | 2 weeks | **SP01** Students will be expected to gather and record data about self and others to answer questions.<br>**SP02** Students will be expected to construct and interpret concrete graphs and pictographs to solve problems.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years.<br>**N03** Students will be expected to describe order or relative position using ordinal numbers (up to tenth). | This unit will provide an introduction to graphing and data collection. Students will create questions that can be answered by gathering information from others and will organize the data they collect using concrete objects, tallies, checkmarks, charts or lists. They will use the information they collect to create concrete graphs and pictographs. They will determine the common attributes of concrete graphs and of pictographs. They will use the information they collect, and the graphs they create to answer questions, draw conclusions, and solve problems. The calendar may be revisited as students collect and graph information on subjects such as favourite days or months, birthday months, or days of the week on which particular events occur. Measurement may also be revisited as a context for collecting information for graphs. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 4 Lessons 1 and 2<br><br>Unit 7 Lessons 1 to 8 |

| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years.<br>**N02** Students will be expected to demonstrate is a number (up to 100) is even or odd.<br>**N04** Students will be expected to represent and partition numbers to 100.<br>**N03** Students will be expected to describe order or relative position using ordinal numbers (up to tenth). | Unit 5<br><br>Addition and Subtraction (1-digit numbers) and Extending Number Sense – Place Value (Tens and Ones) | 4 weeks | **N04** Students will be expected to represent and partition numbers to 100.<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**N09** Students will be expected to demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by<br>▪ using personal strategies for adding and subtracting with and without the support of manipulatives<br>▪ creating and solving problems that involve addition and subtraction<br>▪ explaining and demonstrating that the order in which numbers are added does not affect the sum<br>▪ explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference<br>**N07** Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.<br>**N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**PR02** Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, comparing, and creating numerical patterns (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds, and actions.<br>**PR03** Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).<br>**PR04** Students will be expected to record equalities and inequalities, symbolically, using the equal symbol or not equal symbol. | The focus for this unit is addition and subtraction with 1-digit numbers. Students will demonstrate understanding of the story structures for addition and subtraction (join, separate, part-part-whole, and comparison) by acting out, modeling, and solving story problems using concrete materials, pictures, words, and symbols. They will create and solve addition and subtraction story problems that are meaningful to them. They will match number sentences to story problems and will create story problems from addition and subtraction number sentences or when presented with a solution. They will solve story problems by recording a number expression and combining numbers to complete the number sentences. They will use and describe strategies for determining sums and difference using concrete materials, pictures, and mental mathematics strategies. They will model addition and subtraction using concrete materials and pictures and will record their solution using symbols. As students to work to model and record addition and subtraction situations, they will continue to explore equality and inequality. They will recognize and create equivalent addition and subtraction number sentences. Modeling and solving addition and subtraction problems will also provide opportunity for students to continue to develop meaning for numbers to 100 and for place value. They will continue to read, represent, model, and compare numbers to 100 in a variety of ways.<br><br>As students explore relationships and representation of numbers, they will also model equality and inequality concretely, pictorially and symbolically. They will determine whether two given quantities are equal on not equal. They will compare sets to determine if the sets are equal or not equal. They will use language to describe the comparison. They will determine whether two sides of a given number sentence are equal or not equal and will record the relationship using the appropriate symbol. Some of the story problems students solve may include problems related to the numbers of days in a week and the number of months in a year or to increasing patterns. Students will continue to skip count as they solve addition and subtraction problems. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 3 Lessons 1-15 |

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|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 6<br><br>Geometry and Patterning | 2 weeks | **G01** Students will be expected to sort 2-D shapes and 3-D objects using two attributes and explain the sorting rule.<br>**G02** Students will be expected to recognize, name, describe, compare, and build 3-D objects, including cubes and other prisms, spheres, cones, cylinders, and pyramids.<br>**G03** Students will be expected to recognize, name, describe, compare, and build 2-D shapes, including triangles, squares, rectangles, and circles.<br>**PR01** Students will be expected to demonstrate an understanding of repeating patterns (three to five elements) by describing, extending, comparing, and creating patterns using manipulatives, diagrams, sounds, and actions.<br>**PR02** Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, comparing, and creating numerical patterns (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds, and actions.<br>**N07** Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.<br>**N04** Students will be expected to represent and partition numbers to 100.<br>**N05** Students will be expected to compare and order numbers up to 100.<br>**N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**SP01** Students will be expected to gather and record data about self and others to answer questions.<br>**SP02** Students will be expected to construct and interpret concrete graphs and pictographs to solve problems. | In this unit, students will be introduced to increasing patterns. Students will recognize, identify, and describe increasing pattern in a variety of contexts. They will represent a given increasing pattern and will explain the pattern rule. They will identify errors and missing elements in increasing patterns. They will use increasing patterns to solve problems. Skip counting should be revisited as students work with increasing numerical patterns. They will create a variety of repeating patterns using numbers, manipulatives, diagrams, sounds, and actions. They will translate patterns from one representation to another. As they work with increasing patterns, they will name, recognize, compare, describe, and build 3-D objects. Work with numeric increasing patterns will provide opportunity for students to continue to represent, partition, compare and describe numbers to 100.<br>During this unit, students will also focus on 3-D geometry. Students will identify common attributes of various cylinders, cones, spheres, and cubes and other prisms. They will use those attributes to sort objects and will describe their sorting rule. As students work with 3-D objects, they should also determine differences between two given pre-sorted sets of objects and explain the sorting rule. They should identify common attributes of items within a given sorted group. Students will create and describe representations of given 3-D objects and will identify and name examples of those 3-D objects in their environment. Students may also revisit graphing as they work with 3-D geometry. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 1<br>Lessons<br>5 to 8<br><br>Unit 6<br>Lessons<br>4 to 6<br><br>Investigation 2 |

| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, | Unit 7<br><br>Addition and Subtraction (1-digit and 2-digit numbers) and Extending Number Sense – Place Value (Tens and Ones) | 4 weeks | **N09** Students will be expected to demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by<br>▪ using personal strategies for adding and subtracting with and without the support of manipulatives<br>▪ creating and solving problems that involve addition and subtraction<br>▪ explaining and demonstrating that the order in which numbers are added does not affect the sum<br>▪ explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**N04** Students will be expected to represent and partition numbers to 100.<br>**N05** Students will be expected to compare and order numbers up to 100.<br>**N06** Students will be expected to estimate quantities to 100 by using referents.<br>**N07** Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**PR03** Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).<br>**PR04** Students will be expected to record equalities and inequalities, symbolically, using the equal symbol or not equal symbol. | The focus for this unit is addition and subtraction with 1- and 2-digit numbers. Students will demonstrate understanding of the story structures for addition and subtraction by acting out, modeling, and solving story problems using concrete materials, pictures, words, and symbols. They will create and solve addition and subtraction story problems that are meaningful to them. They will match number sentences to story problems and will create story problems from addition and subtraction number sentences or when presented with a solution. They will solve story problems by recording a number expression and combining numbers to complete the number sentences. They will use and describe strategies for determining sums and difference using concrete materials, pictures, and mental mathematics strategies. They will model addition and subtraction using concrete materials and pictures and will record their solution using symbols. As students work to model and record addition and subtraction situations, they will continue to explore equality and inequality. They will recognize and create equivalent addition and subtraction number sentences. Modeling and solving addition and subtraction problems will also provide opportunity for students to continue to develop meaning for numbers to 100 and for place value. They will continue to read, represent, model, and compare numbers to 100 in a variety of ways. Students will also continue to skip count as they work with numbers to 100. As students explore relationships and representation of numbers, they will also model equality and inequality concretely, pictorially, and symbolically. They will determine whether two given quantities are equal on not equal. They will compare sets to determine if the sets are equal or not equal. They will use language to describe the comparison. They will determine if two sides of a given number sentence are equal or not equal and will record the relationship using the appropriate symbol. Some of the story problems students solve may include problems related to the numbers of days in a week and the number of months in a year or to increasing patterns. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 5 Lessons 1 to 9 |
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| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
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| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 8<br><br>Measurement (Mass) | 2 weeks | **M02** Students will be expected to relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass.<br>**M03** Students will be expected to compare and order objects by length, height, distance around, and **mass** using non-standard units and make statements of comparison.<br>**M05** Students will be expected to demonstrate that changing the position of an object does not alter the measurements of its attributes. | This measurement unit will focus on mass. Students will estimate, measure, and record mass using non-standard units. They will select a non-standard unit for measuring mass and will explain why it was chosen. They will choose between two non-standard units and explain why their choice was appropriate for measuring the mass of a given object. They will explain why the number of units of a measurement varies depending upon the unit of measure. They will compare and order objects according to mass and will explain their method for ordering those objects. They will use language to describe their comparisons. They will discover that changing the position of an object does not alter the measurement of its attributes. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 4 Lessons 8 to 10 |

| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, | Unit 9<br><br>Measurement (Length, Height, and Distance Around) and Statistics | 2 weeks | **M02** Students will be expected to relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass.<br>**M03** Students will be expected to compare and order objects by length, height, distance around, and mass using non-standard units and make statements of comparison.<br>**M04** Students will be expected to measure length to the nearest non-standard unit by using multiple copies of a unit and using a single copy of a unit (iteration process).<br>**M05** Students will be expected to demonstrate that changing the position of an object does not alter the measurements of its attributes.<br>**SP01** Students will be expected to gather and record data about self and others to answer questions.<br>**SP02** Students will be expected to construct and interpret concrete graphs and pictographs to solve problems. | This measurement unit will focus on length. Students will estimate, measure and record length, height, and distance around using non-standard units. They will also measure length that is not a straight line. They will select a non-standard unit for measuring length and will explain why it was chosen. They will count the number of non-standard units required to measure the length of a given object using a single copy or multiple copies of the unit. They will explain why gaps or overlaps result in errors when measuring. They will choose between two non-standard units and explain why their choice was appropriate for measuring the length of a given object. They will explain why the number of units of a measurement varies depending upon the unit of measure. They will compare and order objects according to length and will explain their method for ordering those objects. They will use language to describe their comparisons. They will discover that changing the position of an object does not alter the measurement of its attributes. This unit will also provide an opportunity to revisit graphing and data collection. Students will create questions that can be answered by gathering information from others and will organize the data they collect using concrete objects, tallies, checkmarks, charts or lists. They will use the information they collect to create concrete graphs and pictographs. They will determine the common attributes of concrete graphs and of pictographs. They will use the information they collect, and the graphs they create to answer questions, draw conclusions, and solve problems. The calendar may be revisited as students collect and graph information on subjects such as favourite days or months, birthday months, or days of the week on which particular events occur. Measurement may also be revisited as a context for collecting information for graphs. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 4 Lessons 3 to 7 |
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| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 10<br><br>Addition and Subtraction Numbers to 100 (1-digit and 2-digit and two 2-digit numbers) and Extending Number Sense – Place Value (Tens and Ones) | 4 weeks | **N07** Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.<br>**N09** Students will be expected to demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by<br>▪ using personal strategies for adding and subtracting with and without the support of manipulatives<br>▪ creating and solving problems that involve addition and subtraction<br>▪ explaining and demonstrating that the order in which numbers are added does not affect the sum<br>▪ explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference<br>**PR03** Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).<br>**PR04** Students will be expected to record equalities and inequalities, symbolically, using the equal symbol or not equal symbol.<br>**SP01** Students will be expected to gather and record data about self and others to answer questions.<br>**SP02** Students will be expected to construct and interpret concrete graphs and pictographs to solve problems. | The focus for this unit is addition and subtraction with 1- and 2-digit numbers. Students will demonstrate understanding of the story structures for addition and subtraction by acting out, modeling, and solving story problems using concrete materials, pictures, words, and symbols. They will create and solve addition and subtraction story problems that are meaningful to them. They will match number sentences to story problems and will create story problems from addition and subtraction number sentences or when presented with a solution. They will solve story problems by recording a number expression and combining numbers to complete the number sentences. They will use and describe strategies for determining sums and difference using concrete materials, pictures, and mental mathematics strategies. They will model addition and subtraction using concrete materials and pictures and will record their solution using symbols. They will add a given set of numbers in two different ways and explain why the sum is the same. As students to work to model and record addition and subtraction situations, they will continue to explore equality and inequality. They will recognize and create equivalent addition and subtraction number sentences. Modeling and solving addition and subtraction problems will also provide opportunity for students to continue to develop meaning for numbers to 100 and for place value. They will continue to read, represent, model, and compare numbers to 100 in a variety of ways. As students explore relationships and representations of numbers, they will also model equality and inequality concretely, pictorially and symbolically. They will determine whether two given quantities are equal on not equal. They will compare sets to determine if the sets are equal or not equal. They will use language to describe the comparison. They will determine if two sides of a given number sentence are equal or not equal and will record the relationship using the appropriate symbol. Some of the story problems students solve may include problems related to the numbers of days in a week and the number of months in a year or to increasing patterns. Reading graphs to answer questions may provide another context for solving addition and subtraction problems. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 5 Lessons 10 to 14 |
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| Mental Mathematics and Daily Number Routines | Unit # and Focus | Time Frame | Specific Outcomes | Description | Planning Learning Opportunities | Math Makes Sense 2 |
|---|---|---|---|---|---|---|
| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 11<br><br>Geometry<br>2-D Shapes | 3 weeks | **G02** Students will be expected to recognize, name, describe, compare, and build 3-D objects, including cubes and other prisms, spheres, cones, cylinders, and pyramids.<br>**G03** Students will be expected to recognize, name, describe, compare, and build 2-D shapes, including triangles, squares, rectangles, and circles.<br>**G04** Students will be expected to identify 2-D shapes as part of 3-objects in the environment. | This unit will focus on 2-D shapes and will provide opportunity for students to revisit 3-D objects. Students will name, recognize, compare, describe, and build 2-D shapes. They will create models and drawings to represent given 2-D shapes. They will identify common attributes of triangles, squares, rectangles, and circles from given sets of the same type of 2-D shapes. They will identify 2-D shapes with different dimensions and in different positions. They will identify examples of 2-D shapes found in their environment, and they will identify 2-D shapes in the faces of 3-D objects. They will use those attributes to sort regular and irregular shapes and will describe their sorting rule. As students work with 2-D shapes, they should also determine differences between two given pre-sorted sets of shapes and explain the sorting rule. They should identify common attributes of items within a given sorted group. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Unit 6<br>Lessons 1 to 3, and 7 to 9<br><br>Investigation 4 |
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| **Mental Mathematics** | **Unit # and** | **Time** | **Specific Outcomes** | **Description** | **Planning** | **Math Makes** |

| and Daily Number Routines | Focus | Frame | | | Learning Opportunities | Sense 2 |
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| **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N08** Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number.<br>**N10** Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.<br>**M01** Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. | Unit 12<br><br>Addition and Subtraction and Numbers to 100 (Two 2-digit numbers) and Extending Number Sense – Place Value (Tens and Ones) | 3 weeks | **N01** Students will be expected to say the number sequence by<br>▪ 1s, forward and backward, starting from any point to 200<br>▪ 2s, forward and backward, starting from any point to 100<br>▪ 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100<br>▪ 10s, starting from any point, to 100<br>**N02** Students will be expected to demonstrate if a number (up to 100) is even or odd.<br>**PR02** Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, comparing, and creating numerical patterns (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds, and actions.<br>**N07** Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100.<br>**N09** Students will be expected to demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by<br>▪ using personal strategies for adding and subtracting with and without the support of manipulatives<br>▪ creating and solving problems that involve addition and subtraction<br>▪ explaining and demonstrating that the order in which numbers are added does not affect the sum<br>▪ explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference<br>**PR03** Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).<br>**PR04** Students will be expected to record equalities and inequalities, symbolically, using the equal symbol or not equal symbol. | In this final unit, students will demonstrate flexibility with counting, describing, representing, and partitioning numbers to 100. They will skip count forward and backward by 2s, 5s, and 10s. They will count coins (pennies, nickels, dimes) to determine the value of a group of coins (to 100 cents). They will demonstrate understanding of place value using concrete materials, pictures, and symbols. They will compare and order numbers and will explain their strategies. They will create and solve addition and subtraction problems for all story structures using a variety of personal strategies and will record their strategies symbolically. They will recall addition facts to 18 and will determine related subtraction facts. They will represent equality and inequality concretely, pictorially and symbolically. They will demonstrate flexibility with increasing patterns involving numbers and will solve problems involving numerical increasing patterns. | Use the Learning Opportunities and Assessment Tasks described in the curriculum documents for Mathematics 2 to develop lessons for this unit.<br><br>Additional suggestions for instruction and assessment can be found in *Teaching Student-Centered Mathematics, Grades K-3* (Van de Walle and Lovin 2006) and in *Making Math Meaningful to Canadian Students K-8* (Small 2009) | Revisit Unit 5<br><br>Investigation 3 |