

# Crosswalk between the Ontario Grade Level Objectives and Contexts for Learning Mathematics:

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Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 1</b>		
<b><i>Bunk Beds and Apple Boxes</i></b>	<ul style="list-style-type: none"> <li>• read and print in words whole numbers to ten, using meaningful contexts (e.g., storybooks, posters)</li> <li>• demonstrate, using concrete materials, the concept of conservation of number (e.g., 5 counters represent the number 5, regardless whether they are close together or far apart);</li> <li>• relate numbers to the anchors of 5 and 10 (e.g., 7 is 2 more than 5 and 3 less than 10)</li> <li>• compose and decompose numbers up to 20 in a variety of ways, using concrete materials (e.g., 7 can be decomposed using connecting cubes into 6 and 1, or 5 and 2, or 4 and 3)</li> </ul>	<p><i>Bunk Beds and Apple Boxes</i> introduces the five and ten structures with the arithmetic rack model and supports the development of cardinality, counting, and symbolic representation of quantities. It also develops part/whole of 6-10 items with the production of arrangements with two colors by losing one and gaining one. It challenges children to generalize the relationship between the amount of the whole and the number of possible arrangements to develop conservation.</p>
<b><i>Double Decker Bus</i></b>	<ul style="list-style-type: none"> <li>• relate numbers to the anchors of 5 and 10 (e.g., 7 is 2 more than 5 and 3 less than 10)</li> <li>• compose and decompose numbers up to 20 in a variety of ways, using concrete materials (e.g., 7 can be decomposed using connecting cubes into 6 and 1, or 5 and 2, or 4 and 3)</li> <li>• solve a variety of problems involving the addition and subtraction of whole numbers to 20, using concrete materials and drawings</li> <li>• solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of mental strategies (e.g., one more than, one less than, counting on, counting back, doubles);</li> </ul>	<p><i>The Double-decker Bus</i> develops the basic facts to 20 by employing the use of the arithmetic rack to support the use of the five and ten structures, doubles plus and minus (e.g. <math>6 + 7 = 6 + 6 + 1</math>), and making tens (e.g., <math>9 + 6 = 10 + 5</math>). It also uses quick images with the arithmetic rack to automatize the basic facts and children write addition and subtraction story problems.</p>
<b><i>Organizing and Collecting</i></b>	<ul style="list-style-type: none"> <li>• represent, compare, and order whole numbers to 50, using a variety of tools (e.g., connecting cubes, ten frames, base ten materials, number lines, hundreds charts) and contexts (e.g., real-life experiences, number stories);</li> <li>• read and print in words whole numbers to ten, using meaningful contexts</li> </ul>	<p><i>Organizing and collecting</i> supports the development of counting, skipcounting by fives and tens, making groups of fives and tens, representing amounts, and examines the place value patterns in our number system. The unit introduces and supports the development of grouping and early place value understanding, for example that 17 can be thought of as a group of 10 and 7 more loose ones.</p>

	<ul style="list-style-type: none"> <li>• relate numbers to the anchors of 5 and 10 (e.g., 7 is 2 more than 5 and 3 less than 10; 32 is 3 groups of 10 and 2 more units)</li> <li>• estimate the number of objects in a set, and check by counting</li> <li>• demonstrate, using concrete materials, the concept of one-to-one correspondence between number and objects when counting;</li> <li>• count forward by 1's, 2's, 5's, and 10's to 100, using a variety of tools and strategies</li> </ul>	Since the context of the unit is about taking inventory of classroom materials, the unit can be used both in the beginning and end of the year and used again in grade two with larger amounts to inventory.
<b><i>Beads, Shoes and Twos</i></b>	<ul style="list-style-type: none"> <li>• demonstrate, using concrete materials, the concept of one-to-one correspondence between number and objects when counting;</li> <li>• count forward by 1's, 2's, 5's, and 10's to 100, using a variety of tools and strategies</li> <li>• describe numeric repeating patterns in a hundreds chart;</li> <li>• identify a rule for a repeating pattern</li> <li>• create a repeating pattern involving one attribute (e.g., colour)</li> </ul>	<i>Beads and Shoes, Making Twos</i> explores 1-1 correspondence, cardinality, and introduces even and odd numbers by exploring doubles and pairs. It includes work with groups of 2's, 5's, and 10's and the examination and extension of repeating patterns with two colors to develop early algebraic thinking.
<b><i>Games for Early Number Sense: A Resource Throughout the Year (K-1)</i></b>	Yearlong Supplement	A yearlong resource to deepen all of the above. Unit is organized progressively and sequentially for K-1, with the easier games in the beginning. Can also be used for differentiation and intervention.
<b><i>Minilessons for Early Addition and Subtraction: A Yearlong Resource (1-2)</i></b>	Yearlong Supplement	A yearlong resource to automatize the basic facts for addition and subtraction to 20. It provides minilessons that can be used throughout grades 1 and 2 everyday to help automatize the basic facts. Can also be used for differentiation and intervention.

Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 2</b>		
<b><i>Measuring for the Art Show</i></b>	<ul style="list-style-type: none"> <li>• locate whole numbers to 100 on a number line and on a partial number line (e.g., locate 37 on a partial number line that goes from 34 to 41).</li> <li>• describe relationships between quantities by using whole-number addition and subtraction</li> <li>• solve problems involving the addition and subtraction of two-digit numbers, with and without regrouping, using concrete materials and student-generated algorithms</li> <li>• estimate and measure length and distance, using standard units and non-standard units</li> <li>• record and represent measurements of length in a variety of ways</li> <li>• count forward by 1's, 2's, 5's, 10's, and 25's to 200, using number lines and hundreds charts, starting from multiples of 1, 2, 5, and 10 (e.g., count by 5's from 15; count by 25's from 125)</li> <li>• determine, using concrete materials, the ten that is nearest to a given two-digit number, and justify the answer</li> </ul>	<p><i>Measuring for the Art Show</i> introduces the open number line model and prepares the way for examining 2-digit numbers and addition with them. This is an important addition to the <i>Ontario Curriculum</i>. Although the number line model is employed as a counting and representation tool, no information is given to teachers regarding how to progressively develop it and use it as an open number line model for representing children's addition and subtraction strategies.</p>
<b><i>Organizing and Collecting</i></b>	<ul style="list-style-type: none"> <li>• compose and decompose two-digit numbers in a variety of ways, using concrete materials (e.g., place 42 counters on ten frames to show 4 tens and 2 ones (show 60 in different ways</li> <li>• determine, using concrete materials, the ten that is nearest to a given two-digit number, and justify the answer (e.g., use counters on ten frames to determine that 47 is closer to 50 than to 40)</li> </ul>	<p><i>See description above in grade 1 and note specifically how it can be used in grade 1 and repeated in grade 2</i></p>
<b><i>Trades, Jumps, and Stops</i></b>	<ul style="list-style-type: none"> <li>• compose and decompose two-digit numbers in a variety of ways, using concrete materials (e.g., compose 37¢ using one quarter, one dime, and two pennies)</li> <li>• determine the missing number in equations involving addition and subtraction to 18, using a variety of tools and strategies</li> <li>• represent through investigation with concrete materials and pictures, two number expressions that</li> </ul>	<p><i>Trades, Jumps, and Stops</i> emphasizes the algebra strand by focusing on equivalence, exchanging equivalent expressions and solving for unknowns. The context of coins (money) and exchanging equivalent amounts is used throughout the first week. The unit also focuses on adding several addends flexibly by combining the addends in clever ways.</p>

	<p>are equal, using the equal sign (e.g., “I can break a train of 10 cubes into 4 cubes and 6 cubes. I can also break 10 cubes into 7 cubes and 3 cubes. This means <math>4 + 6 = 7 + 3</math>.”)</p> <ul style="list-style-type: none"> <li>• identify, through investigation, and use the commutative property of addition (e.g., create a train of 10 cubes by joining 4 red cubes to 6 blue cubes, or by joining 6 blue cubes to 4 red cubes) to facilitate computation with whole numbers (e.g., “I know that <math>9 + 8 + 1 = 9 + 1 + 8</math>. Adding becomes easier because that gives <math>10 + 8 = 18</math>.”)</li> <li>• demonstrate an understanding of the concept of equality by partitioning whole numbers to 18 in a variety of ways, using concrete materials (e.g., starting with 9 tiles and adding 6 more tiles gives the same result as starting with 10 tiles and adding 5 more tiles)</li> </ul>	
<p><b><i>Groceries, Stamps, and Measuring Strips</i></b></p>	<ul style="list-style-type: none"> <li>• represent and explain, through investigation using concrete materials and drawings, multiplication as the combining of equal groups (e.g., use counters to show that 3 groups of 2 is equal to <math>2 + 2 + 2</math> and to <math>3 \times 2</math>)</li> </ul>	<p><i>Groceries, Stamps, and Measuring Strips</i> focuses on skipcounting and regrouping of groups. It introduces multiplication by building sequentially from repeated addition and skipcounting on the open number line, to multiplicative thinking, and lays a framework for strategies that will help automatize the basic multiplication facts. The second week of the unit provides an introduction to the relationships between the facts and the underlying properties.</p>
<p><b><i>Minilessons for Early Addition and Subtraction: A Yearlong Resource (1-2)</i></b></p>	<p>Yearlong Supplement</p>	<p>A yearlong resource to automatize the basic facts for addition and subtraction to 20. It provides minilessons that can be used throughout grades 1 and 2 everyday to help automatize the basic facts. Can also be used for differentiation and intervention.</p>
<p><b><i>Minilessons for Extending Addition and Subtraction: A Yearlong Resource (2-3)</i></b></p>	<p>Yearlong Supplement</p>	<p>Designed to be used in grades 2 and 3 as a resource of minilessons to strengthen computation. The resource focuses on the development of efficient computation strategies for 2 and 3-digit addition and subtraction. Doing 10-15 min. minilessons from this resource every day will provide the needed practice in computation. Can also be used for differentiation and intervention.</p>

Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 3</b>		
<b><i>Trades, Jumps, and Stops</i></b>	<ul style="list-style-type: none"> <li>• identify, through investigation, and use the associative property of addition to facilitate computation with whole numbers (e.g., “I know that <math>17 + 16</math> equals <math>17 + 3 + 13</math>. This is easier to add in my head because I get <math>20 + 13 = 33</math>.”).</li> <li>• determine, the missing number in equations involving addition and subtraction of one- and two-digit numbers, using a variety of tools and strategies (e.g., modeling with concrete materials, using guess and check with and without the aid of a calculator)</li> </ul>	<i>Trades, Jumps, and Stops</i> emphasizes the algebra strand by focusing on equivalence, exchanging equivalent expressions and solving for unknowns. The context of coins (money) and exchanging equivalent amounts is used throughout the first week. The unit also focuses on adding several addends flexibly by combining the addends in clever ways
<b><i>Ages and Timelines</i></b>	<ul style="list-style-type: none"> <li>• solve problems involving the addition and subtraction of two-digit numbers, using a variety of mental strategies</li> <li>• add and subtract three-digit numbers, using concrete materials, student generated algorithms</li> <li>• determine, through investigation, the inverse relationship between addition and subtraction (e.g., since <math>4 + 5 = 9</math>, then <math>9 - 5 = 4</math>; since <math>16 - 9 = 7</math>, then <math>7 + 9 = 16</math>);</li> </ul>	<i>Ages and Timelines</i> emphasizes the modeling of subtraction on the open number line. It explores various subtraction models (difference, removal, missing addends) and relates addition to subtraction while developing mental arithmetic strategies for subtraction with 2 and 3 digit numbers.
<b><i>The T-Shirt Factory</i></b>	<ul style="list-style-type: none"> <li>• read and print in words whole numbers to one hundred, using meaningful contexts</li> <li>• compose and decompose three-digit numbers into hundreds, tens, and ones in a variety of ways, using concrete materials</li> <li>• round two-digit numbers to the nearest ten, in problems arising from real-life situations solve problems involving the addition and subtraction of two-digit numbers, using a variety of mental strategies (e.g., to add <math>37 + 26</math>, add the tens, add the ones, then combine the tens and ones, like this: <math>30 + 20 = 50</math>, <math>7 + 6 = 13</math>, <math>50 + 13 = 63</math>);</li> <li>• add and subtract three-digit numbers, using concrete materials, student-generated algorithms, and standard algorithms</li> <li>• add and subtract money amounts, using a variety of tools (e.g., currency manipulatives, drawings), to make simulated purchases</li> </ul>	<i>The T-shirt Factory</i> introduces the standard place value algorithms for addition and subtraction and deepens an understanding of place value to three and four places. The context of t-shirt factories provides an interesting context to students as they engage in a simulation, buying and selling t-shirts packed in rolls of 10 and boxes of 100 and keeping track of the remaining inventory and the worth of it. Each t-shirt sells for \$10

<p><b><i>Groceries, Stamps, and Measurement Strips</i></b></p>	<ul style="list-style-type: none"> <li>• relate multiplication of one-digit numbers and division by one-digit divisors to real life situations, using a variety of tools and strategies</li> <li>• multiply to <math>7 \times 7</math> and divide to <math>49 \div 7</math>, using a variety of mental strategies (e.g., doubles, doubles plus another set, skip counting)</li> </ul>	<p><i>Groceries, Stamps, and Measuring Strips</i> focuses on skipcounting and regrouping of groups. It introduces multiplication by building sequentially from repeated addition and skipcounting on the open number line, to multiplicative thinking, and lays a framework for strategies that will help automatize the basic multiplication facts. The second week of the unit provides an introduction to the relationships between the facts and the underlying properties.</p>
<p><b><i>Muffles' Truffles</i></b></p>	<ul style="list-style-type: none"> <li>• relate multiplication of one-digit numbers and division by one-digit divisors to real life situations, using a variety of tools and strategies (e.g., place objects in equal groups, use arrays, write repeated addition or subtraction sentences)</li> <li>• multiply to <math>7 \times 7</math> and divide to <math>49 \div 7</math>, using a variety of mental strategies (e.g., doubles, doubles plus another set, skip counting).</li> </ul>	<p><i>Muffles Truffles</i> develops the open array as a multiplication model that can be used as a powerful tool to support the development of partial products and the distributive, commutative, and associative properties. Students also explore ways to change the shape of the array while keeping the area constant.</p>
<p><b><i>Minilessons for Extending Addition and Subtraction: A Yearlong Resource (2-3)</i></b></p>	<p>Yearlong Supplement</p>	<p>Designed to be used in grades 2 and 3 as a resource of minilessons to strengthen computation. The resource focuses on the development of efficient computation strategies for 2 and 3-digit addition and subtraction. Doing 10-15 min. minilessons from this resource every day will provide the needed practice in computation. Can also be used for differentiation and intervention.</p>
<p><b><i>Minilessons for Early Multiplication and Division: A Yearlong Resource (3-4)</i></b></p>	<p>Yearlong Supplement</p>	<p>This yearlong resource was designed for grades 3 and 4 to support the automatizing of the basic facts for multiplication and division and to develop early computation strategies with larger numbers. Doing 10-15 min. minilessons from this resource everyday will provide the needed practice in computation to ensure automaticity of the facts. Can also be used for differentiation and intervention.</p>

Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 4</b>		
<b><i>The Big Dinner</i></b>	<ul style="list-style-type: none"> <li>• multiply to <math>9 \times 9</math> and divide to <math>81 \div 9</math>, using a variety of mental strategies (e.g., doubles, doubles plus another set, skip counting)</li> <li>• solve problems involving the multiplication of one-digit whole numbers, using a variety of mental strategies (e.g., <math>6 \times 8</math> can be thought of as <math>5 \times 8 + 1 \times 8</math>)</li> <li>• multiply two-digit whole numbers by one-digit whole numbers, using a variety of tools, student-generated algorithms, and standard algorithms</li> <li>• demonstrate an understanding of simple multiplicative relationships involving unit rates, through investigation using concrete materials and drawings (e.g., scale drawings in which 1 cm represents 2 m) (<b>Sample problem:</b> If 1 book costs \$4, how do you determine the cost of 2 books?...3 books?...4 books?).</li> <li>• describe relationships that involve simple whole-number multiplication (e.g., “If you have 2 marbles and I have 6 marbles, I can say that I have three times the number of marbles you have.”)</li> </ul>	<p><i>The Big Dinner</i> is an important addition to the Ontario Curriculum. It introduces the ratio table as a powerful tool for multiplicative reasoning and lays a foundation for the development of proportional reasoning. It also continues the work of developing the basic multiplication facts and introduces the use of partial products employing the use of the distributive property for multiplication (over addition and subtraction).</p>
<b><i>Muffles Truffles</i></b>	<ul style="list-style-type: none"> <li>• solve problems involving the multiplication of one-digit whole numbers, using a variety of mental strategies (e.g., <math>6 \times 8</math> can be thought of as <math>5 \times 8 + 1 \times 8</math>);</li> <li>• multiply whole numbers by 10, 100, and 1000, and divide whole numbers by 10 and 100, using mental strategies</li> <li>• multiply two-digit whole numbers by one-digit whole numbers, using a variety of tools (e.g., base ten materials or drawings of them, arrays), student-generated algorithms, and standard algorithms</li> <li>• multiply to <math>9 \times 9</math> and divide to <math>81 \div 9</math>, using a variety of mental strategies (e.g., doubles, doubles plus another set, skip counting)</li> </ul>	<p><i>Muffles Truffles</i> develops the open array as a multiplication model that can be used as a powerful tool to support the development of partial products and the distributive, commutative, and associative properties. Students also explore ways to change the shape of the array while keeping the area constant.</p>
<b><i>The Teachers’ Lounge</i></b>	<ul style="list-style-type: none"> <li>• divide two-digit whole numbers by one digit whole numbers, using a variety of tools (e.g., concrete</li> </ul>	<p><i>The Teachers’ Lounge</i> emphasizes place value and the distributive property for multiplication over addition (as</p>

	materials, drawings) and student-generated algorithms	they relate to division). Partitive and quotative situations are both examined, as well as the treatment of remainders in context. Student-generated algorithms emerge including partial quotients.
<b><i>Field Trips and Fund-Raisers</i></b>	<ul style="list-style-type: none"> <li>• represent fractions using concrete materials, words, and standard fractional notation, and explain the meaning of the denominator as the number of the fractional parts of a whole or a set, and the numerator as the number of fractional parts being considered</li> <li>• compare and order fractions (i.e., halves, thirds, fourths, fifths, tenths) by considering the size and the number of fractional pieces</li> <li>• compare fractions to the benchmarks of 0, <math>\frac{1}{2}</math>, and 1</li> <li>• demonstrate and explain the relationship between equivalent fractions, using concrete materials</li> </ul>	<i>Field Trips and Fund-Raisers</i> develops the connection of fractions to division and supports the generalization between the various fraction models (fair-sharing, the bar and area models, part/whole). It also introduces the use of the open number line model for later addition and subtraction fraction work.
<b><i>Minilessons for Early Multiplication and Division: A Yearlong Resource (3-4)</i></b>	Yearlong Supplement	This yearlong resource was designed for grades 3 and 4 to support the automatizing of the basic facts for multiplication and division and to develop early computation strategies with larger numbers. Doing 10-15 min. minilessons from this resource everyday will provide the needed practice in computation to ensure automaticity of the facts. Can also be used for differentiation and intervention.
<b><i>Minilessons for Extending Multiplication and Division (4-5)</i></b>	Yearlong Supplement	This yearlong resource makes use of crafted strings of related problems to ensure the development of a repertoire of strategies for efficient computation for multiplication and division. The minilessons within this resource emphasize mental arithmetic and the use of the associative, commutative, and distributive properties. This resource also provides practice for efficient computation and can be used for differentiation and intervention.



Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 5</b>		
<i>The Teachers' Lounge</i>	<ul style="list-style-type: none"> <li>• divide three-digit whole numbers by one-digit whole numbers, using concrete materials, estimation, student-generated algorithms, and standard algorithms</li> </ul>	<p><i>The Teachers' Lounge</i> emphasizes place value and the distributive property for multiplication over addition (as they relate to division). Partitive and quotative situations are both examined, as well as the treatment of remainders in context. Student-generated algorithms emerge including partial quotients. [Note: If used in grade 5, the standard long division algorithm can be developed.]</p>
<i>Mystery of the Meter</i>	<ul style="list-style-type: none"> <li>• represent, compare, and order whole numbers and decimal numbers from 0.01 to 100 000, using a variety of tools</li> <li>• demonstrate an understanding of place value in whole numbers and decimal numbers from 0.01 to 100 000, using a variety of tools and strategies (Sample problem: How many thousands cubes would be needed to make a base ten block for 100 000?);</li> <li>• round decimal numbers to the nearest tenth, in problems arising from real-life situations</li> <li>• demonstrate and explain equivalent representations of a decimal number, using concrete materials and drawings</li> <li>• add and subtract decimal numbers to hundredths, including money amounts, using concrete materials, estimation, and algorithms</li> </ul>	<p><i>The Mystery of the Meter</i> provides an important treatment of decimals by introducing the analog meter to emphasize place value and equivalence. The primary model used for decimals in Ontario is the grid. We recommend this CFLM unit be used as a supplement, not as a replacement. Using <i>Mystery of the Meter</i> as a supplement will ensure that due emphasis is being placed on decimal numbers and the place value connections.</p>
<i>The Box Factory</i>	<ul style="list-style-type: none"> <li>• create, through investigation using a variety of tools and strategies, two-dimensional shapes with the same perimeter or the same area (<b>Sample problem:</b> Using dot paper, how many different rectangles can you draw with a perimeter of 12 units? With an area of 12 square units?);</li> <li>• determine, through investigation using a variety of tools (e.g., concrete materials, dynamic geometry software, grid paper) and strategies (e.g., building arrays), the relationships between the length and width of a rectangle and its area and perimeter, and generalize to develop the formulas [i.e., <math>Area = length \times width</math>; <math>Perimeter = (2 \times length) + (2 \times width)</math>]</li> </ul>	<p><i>The Box Factory</i> develops the associative property and factoring and supports the generalization of the area formula for rectangles, as well as the relationship between surface area and volume in rectangular prisms and their formulas. While surface area is a grade 6 expectation, this unit is appropriate for later grade 5 and ideal for grade 5/6 combined classes.</p>

	<ul style="list-style-type: none"> <li>determine, through investigation using stacked congruent rectangular layers of concrete materials, the relationship between the height, the area of the base, and the volume of a rectangular prism, and generalize to develop the formula (i.e., <math>Volume = area\ of\ base \times height</math>) (<b>Sample problem:</b> Create a variety of rectangular prisms using connecting cubes. For each rectangular prism, record the area of the base, the height, and the volume on a chart. Identify relationships.)</li> </ul>	
<p><b><i>The California Frog Jumping Contest</i></b></p>	<ul style="list-style-type: none"> <li>demonstrate, through investigation, an understanding of variables as unknown quantities represented by a letter or other symbol</li> <li>determine the missing number in equations involving addition, subtraction, multiplication, or division and one- or two digit numbers, using a variety of tools and strategies</li> <li>demonstrate, through investigation, an understanding of variables as changing quantities, given equations with letters and other symbols that describe relationships</li> </ul>	<p>This unit provides an important addition to the algebra strand by focusing on symbolizing with variables and emphasizing that an algebraic expression can be treated as an object (not only as a procedure). The double open number line is used throughout as a tool to support the development of strategies for solving for unknowns in linear equations.</p>
<p><b><i>Minilessons for Extending Multiplication and Division (4-5)</i></b></p>	<p>Yearlong Supplement</p>	<p>This yearlong resource makes use of crafted strings of related problems to ensure the development of a repertoire of strategies for efficient computation for multiplication and division. The minilessons within this resource emphasize mental arithmetic and the use of the associative, commutative, and distributive properties. This resource also provides practice for efficient computation and can be used for differentiation and intervention.</p>

Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 6</b>		
<i>Mystery of the Meter</i>	<ul style="list-style-type: none"> <li>• represent, compare, and order whole numbers and decimal numbers from 0.001 to 1 000 000, using a variety of tools</li> <li>• demonstrate an understanding of place value in whole numbers and decimal numbers from 0.001 to 1 000 000, using a variety of tools and strategies</li> <li>• add and subtract decimal numbers to thousandths, using concrete materials, estimation, algorithms, and calculators</li> <li>• multiply and divide decimal numbers to tenths by whole numbers, using concrete materials, estimation, algorithms, and calculators</li> <li>• multiply whole numbers by 0.1, 0.01, and 0.001 using mental strategies</li> <li>• multiply and divide decimal numbers by 10, 100, 1000, and 10 000 using mental strategies</li> </ul>	<p><i>The Mystery of the Meter</i> provides an important treatment of decimals by introducing the analog meter to emphasize place value and equivalence. The primary model used for decimals in Ontario is the grid. We recommend this CFLM unit be used as a supplement, not as a replacement. Using <i>Mystery of the Meter</i> as a supplement will ensure that due emphasis is being placed on decimal numbers and the place value connections. The unit develops decimals to thousandths. Use of this unit in Grade 6 will ensure a deep understanding of decimals to thousandths and the important multiplicative place value connections. Although it could be used in grade 5 and we have listed it there as well, since grade 5 only goes to hundredths, the money model may be sufficient there, and the better place for this unit may be Grade 6</p>
<i>The Box Factory</i>	<ul style="list-style-type: none"> <li>• determine, through investigation using a variety of tools and strategies, the surface area of rectangular prisms</li> <li>• solve problems involving the estimation and calculation of the surface area and volume of rectangular prisms (<b>Sample problem:</b> How many square centimetres of wrapping paper are required to wrap a box that is 10 cm long, 8 cm wide, and 12 cm high?)</li> </ul>	<p><i>The Box Factory</i> develops the associative property and factoring and supports the generalization of the area formula for rectangles, as well as the relationship between surface area and volume in rectangular prisms and their formulas.</p>
<i>Best Buys, Ratios, and Rates</i>	<ul style="list-style-type: none"> <li>• represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation</li> <li>• represent relationships using unit rates</li> <li>• determine and explain, through investigation using concrete materials, drawings, and calculators, the relationships among fractions (i.e., with denominators of 2, 4, 5, 10, 20, 25, 50, and 100), decimal numbers, and percents</li> </ul>	<p><i>Best Buys, Ratios, and Rates</i> was designed to develop a strong sense of fraction equivalence, emphasizing proportional reasoning. It provides many opportunities for students to explore fractions of changing wholes and to explore the treatment of numerators and denominators to establish equivalence. It also develops the double open number line and the ratio models for equivalence and introduces addition and subtraction of fractions.</p>

<p><b><i>California Frog Jumping Contest</i></b></p>	<ul style="list-style-type: none"> <li>• demonstrate an understanding of different ways in which variables are used (e.g., variable as an unknown quantity; variable as a changing quantity);</li> <li>• identify, through investigation, the quantities in an equation that vary and those that remain constant</li> <li>• solve problems that use two or three symbols or letters as variables to represent different unknown quantities</li> </ul>	<p>This unit provides an important addition to the algebra strand by focusing on symbolizing with variables and emphasizing that an algebraic expression can be treated as an object (not only as a procedure). The double open number line is used throughout as a tool to support the development of strategies for solving for unknowns in linear equations. If used in Grade 6, emphasis can be placed on how the lengths of the frogs' jumps vary, but the length of a single frog step is a unit of measure and is a constant.</p>
<p><b><i>Minilessons for Extending Multiplication and Division</i></b></p>	<p>Yearlong Supplement</p>	<p>See description in Grade 5</p>
<p><b><i>Minilessons for Fractions, Decimals, and Percents</i></b></p>	<p>Yearlong Supplement</p>	<p>This resource of minilessons can be used throughout the grade 4-8 years to develop and ensure deep understanding of fractions, decimals, and percents, as well as to develop efficient computation with rational numbers. The unit is progressive with the earlier minilessons first.</p>

Contexts for Learning Mathematics	Ontario Grade Level Objectives	Description of Content in Unit
<b>Grade 7</b>		
<b><i>Best Buys, Ratios, and Rates</i></b>	<ul style="list-style-type: none"> <li>• solve problems involving the calculation of unit rates</li> <li>• add and subtract fractions with simple like and unlike denominators, using a variety of tools (e.g., fraction circles, Cuisenaire rods, drawings, calculators) and algorithms</li> </ul>	<i>Best Buys, Ratios, and Rates</i> was designed to develop a strong sense of fraction equivalence, emphasizing proportional reasoning. It provides many opportunities for students to explore fractions of changing wholes and to explore the treatment of numerators and denominators to establish equivalence. It also develops the double open number line and the ratio models for equivalence and introduces addition and subtraction of fractions.
<b><i>Minilessons for Fractions, Decimals, and Percents</i></b>	Yearlong Supplement	This resource of minilessons can be used throughout the grade 4-8 years to develop and ensure deep understanding of fractions, decimals, and percents, as well as to develop efficient computation with rational numbers. The unit is progressive with the earlier minilessons first.
<b>Grade 8</b>		
<b><i>Parks and Playgrounds</i></b>	<ul style="list-style-type: none"> <li>• represent the multiplication and division of fractions, using a variety of tools and strategies</li> <li>• solve problems involving addition, subtraction, multiplication, and division with simple fractions</li> </ul>	<i>Parks and Playgrounds</i> has as its focus multiplication and division of fractions by fractions, although many of the problems can also be solved with decimal equivalents. This unit can serve as a needed contextually-based unit to support grade 6 and 7 children in developing a strong sense of operations with rational numbers. It can also be used at grade 8, where multiplication and division of fractions are emphasized.
<b><i>Minilessons for Fractions, Decimals, and Percents</i></b>	Yearlong Supplement	This resource of minilessons can be used throughout the grade 4-8 years to develop and ensure deep understanding of fractions, decimals, and percents, as well as to develop efficient computation with rational numbers. The unit is progressive with the earlier minilessons first.