

Grade 4	Grade 5	Grade 6
<p><b>Collect, Organize, Display and Interpret Categorical Data (5+ days)</b></p> <p><b>4m88</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or the community, or content from another subject, and record observations or measurements</p> <p><b>4m89</b> Collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>4m90</b> Read, interpret, and draw conclusions from primary data and from secondary data presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)</p> <p><b>Data Management and Probability Overalls: 4m85, 4m86</b></p>	<p><b>Collect, Organize, and Display Primary Data (4+ days)</b></p> <p><b>5m75</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements</p> <p><b>5m76</b> Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including broken-line graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>Data Management and Probability Overall: 5m71</b></p>	<p><b>Collect, Organize and Display Primary and Secondary Data (6+ days)</b></p> <p><b>6m70</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements</p> <p><b>6m71</b> Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including continuous line graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>6m72</b> Select an appropriate type of graph to represent a set of data, graph the data using technology, and justify the choice of graph (i.e., from types of graphs already studied, such as pictographs, horizontal or vertical bar graphs, stem-and-leaf plots, double bar graphs, broken-line graphs, and continuous line graphs)</p> <p><b>6m73</b> Determine, through investigation, how well a set of data represents a population, on the basis of the method that was used to collect the data</p> <p><b>Data Management and Probability Overall: 6m67</b></p>
<p><b>Linear Measurement (4+ days)</b></p> <p><b>4m40</b> Estimate, measure, and record length, height, and distance, using standard units (i.e., millimetre, centimetre, metre, kilometre)</p> <p><b>4m41</b> Draw items using a ruler, given specific lengths in millimetres or centimetres</p> <p><b>4m48</b> Describe, through investigation, the relationship between various units of length (i.e., millimetre, centimetre, decimetre, metre, kilometre)</p> <p><b>4m49</b> Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, metre, kilometre) to measure the side lengths and perimeters of various polygons</p> <p><b>Measurement Overalls: 4m38, 4m39</b></p>	<p><b>Linear Measurement (3+ days)</b></p> <p><b>5m37</b> Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, decimetre, metre, kilometre) to measure length, height, width, and distance, and to measure the perimeter of various polygons</p> <p><b>Measurement Overall: 5m32</b></p>	<p><b>Linear, Perimeter, and Area – Measurements and Constructions (5+ days)</b></p> <p><b>6m31</b> Demonstrate an understanding of the relationship between estimated and precise measurements, and determine and justify when each kind is appropriate</p> <p><b>6m32</b> Estimate, measure, and record length, area, mass, capacity, and volume, using the metric measurement system</p> <p><b>6m33</b> Select and justify the appropriate metric unit (i.e., millimetre, centimetre, decimetre, metre, decametre, kilometre) to measure length or distance in a given real-life situation</p> <p><b>6m35</b> Construct a rectangle, a square, a triangle, and a parallelogram, using a variety of tools, given the area and/or perimeter</p> <p><b>Measurement Overalls: 6m29, 6m30</b></p>

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<p><b>Mental Math, Multiplicative Relationships and Equality (10+ days)</b></p> <p><b>4m25</b> Add and subtract two-digit numbers, using a variety of mental strategies</p> <p><b>4m29</b> Multiply to <math>9 \times 9</math> and divide to <math>81 \div 9</math>, using a variety of mental strategies</p> <p><b>4m30</b> Solve problems involving the multiplication of one-digit whole numbers, using a variety of mental strategies</p> <p><b>4m31</b> Multiply whole numbers by 10, 100, and 1000, and divide whole numbers by 10 and 100, using mental strategies</p> <p><b>4m35</b> Describe relationships that involve simple whole-number multiplication</p> <p><b>4m37</b> Demonstrate an understanding of simple multiplicative relationships involving unit rates, through investigation using concrete materials and drawings</p> <p><b>4m81</b> Determine, through investigation, the inverse relationship between multiplication and division</p> <p><b>4m82</b> Determine the missing number in equations involving multiplication of one- and two-digit numbers, using a variety of tools and strategies</p> <p><b>Number Sense and Numeration Overalls: 4m10, 4m11</b>  <b>Patterning and Algebra Overall: 4m75</b></p>	<p><b>Mental Math, Multiplicative Relationships and Equality (7+ days)</b></p> <p><b>5m22</b> Solve problems involving the addition, subtraction, and multiplication of whole numbers, using a variety of mental strategies</p> <p><b>5m30</b> Demonstrate an understanding of simple multiplicative relationships involving whole-number rates, through investigation using concrete materials and drawings</p> <p><b>5m69</b> Demonstrate, through investigation, an understanding of variables as unknown quantities represented by a letter or other symbol</p> <p><b>5m70</b> 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</p> <p><b>Number Sense and Numeration Overalls: 5m10, 5m11</b>  <b>Patterning and Algebra Overall: 5m62</b></p>	<p><b>Mental Math, Whole Number Relationships and Order of Operations (6+ days)</b></p> <p><b>6m17</b> Identify composite numbers and prime numbers, and explain the relationship between them (i.e., any composite number can be factored into prime factors)</p> <p><b>6m18</b> Use a variety of mental strategies to solve addition, subtraction, multiplication, and division problems involving whole numbers</p> <p><b>6m25</b> Explain the need for a standard order for performing operations, by investigating the impact that changing the order has when performing a series of operations</p> <p><b>Number Sense and Numeration Overalls: 6m8, 6m9</b></p>
		<p><b>Equality - Unknown Quantities (3+ days)</b></p> <p><b>6m63</b> Demonstrate an understanding of different ways in which variables are used</p> <p><b>6m64</b> Identify, through investigation, the quantities in an equation that vary and those that remain constant</p> <p><b>6m65</b> Solve problems that use two or three symbols or letters as variables to represent different unknown quantities</p> <p><b>6m66</b> Determine the solution to a simple equation with one variable, through investigation using a variety of tools and strategies</p> <p><b>Patterning and Algebra Overall: 6m56</b></p>

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<p><b>Represent, Compare and Order Numbers 0 to 10 000 (6+ days)</b></p> <p><b>4m12</b> Represent, compare, and order whole numbers to 10 000, using a variety of tools</p> <p><b>4m13</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.1 to 10 000, using a variety of tools and strategies</p> <p><b>4m14</b> Read and print in words whole numbers to one thousand, using meaningful contexts</p> <p><b>4m15</b> Round four-digit whole numbers to the nearest ten, hundred, and thousand, in problems arising from real-life situations</p> <p><b>4m22</b> Solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 10 000</p> <p><b>Number Sense and Numeration Overall: 4m8</b></p>	<p><b>Represent, Compare and Order Numbers 0.01 to 10 000 (10+ days)</b></p> <p><b>5m12</b> Represent, compare, and order whole numbers and decimal numbers from 0.01 to [10 000] 100 000, using a variety of tools and strategies</p> <p><b>5m13</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.01 to [10 000] 100 000, using a variety of tools and strategies</p> <p><b>5m14</b> Read and print in words whole numbers to ten thousand, using meaningful contexts</p> <p><b>5m18</b> Demonstrate and explain equivalent representations of a decimal number, using concrete materials and drawings</p> <p><b>5m19</b> Read and write money amounts to \$1000</p> <p><b>5m21</b> Count forward by hundredths from any decimal number expressed to two decimal places, using concrete materials and number lines</p> <p><b>Number Sense and Numeration Overall: 5m8, 5m9</b></p>	<p><b>Represent, Compare and Order Numbers 0.01 to 1 000 000 (6+ days)</b></p> <p><b>6m11</b> Represent, compare, and order whole numbers and decimal numbers from [0.01] 0.001 to 1 000 000, using a variety of tools and strategies</p> <p><b>6m12</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from [0.01] 0.001 to 1 000 000, using a variety of tools and strategies</p> <p><b>6m13</b> Read and print in words whole numbers to one hundred thousand, using meaningful contexts</p> <p><b>6m16</b> Solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 1 000 000</p> <p><b>Number Sense and Numeration Overall: 6m8</b></p>
<p><b>Operations Involving Numbers 0 to 10 000 (11+ days)</b></p> <p><b>4m13</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.1 to 10 000, using a variety of tools and strategies</p> <p><b>4m26</b> Solve problems involving the addition and subtraction of four-digit numbers, using student-generated algorithms and standard algorithms</p> <p><b>4m32</b> Multiply two-digit whole numbers by one-digit whole numbers, using a variety of tools, student-generated algorithms, and standard algorithms</p> <p><b>4m33</b> Divide two-digit whole numbers by one-digit whole numbers, using a variety of tools and student-generated algorithms</p> <p><b>4m34</b> Use estimation when solving problems involving the addition, subtraction, and multiplication of whole numbers, to help judge the reasonableness of a solution</p> <p><b>4m83</b> Identify, through investigation, and use the commutative property of multiplication to facilitate computation with whole numbers</p> <p><b>4m84</b> Identify, through investigation, and use the distributive property of multiplication over addition to facilitate computation with whole numbers</p> <p><b>Number Sense and Numeration Overall: 4m8, 4m10</b> <b>Patterning and Algebra Overall: 4m75</b></p>	<p><b>Operations Involving Numbers 0.01 to 10 000 (13+ days)</b></p> <p><b>5m13</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.01 to [10 000] 100 000, using a variety of tools and strategies</p> <p><b>5m15</b> Round decimal numbers to the nearest tenth, in problems arising from real-life situations</p> <p><b>5m20</b> Solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to [10 000] 100 000</p> <p><b>5m23</b> Add and subtract decimal numbers to hundredths, including money amounts, using concrete materials, estimation, and algorithms</p> <p><b>5m24</b> Multiply two-digit whole numbers by two-digit whole numbers, using estimation, student-generated algorithms, and standard algorithms</p> <p><b>5m25</b> Divide three-digit whole numbers by one-digit whole numbers, using concrete materials, estimation, student-generated algorithms, and standard algorithms</p> <p><b>Number Sense and Numeration Overall: 5m8, 5m10</b></p>	<p><b>Operations Involving Numbers 0.01 to 1 000 000 (9+ days)</b></p> <p><b>6m19</b> Solve problems involving the multiplication and division of whole numbers (four-digit by two-digit), using a variety of tools and strategies</p> <p><b>6m21</b> Multiply and divide decimal numbers to tenths by whole numbers, using concrete materials, estimation, algorithms, and calculators</p> <p><b>6m24</b> Use estimation when solving problems involving the addition and subtraction of whole numbers and decimals, to help judge the reasonableness of a solution</p> <p><b>Number Sense and Numeration Overall: 6m9</b></p>

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<p><b>Angles and Geometric Properties of 2D Shapes (4+ days)</b></p> <p><b>4m61</b> Draw the lines of symmetry of two-dimensional shapes, through investigation using a variety of tools and strategies</p> <p><b>4m62</b> Identify and compare different types of quadrilaterals (i.e., rectangle, square, trapezoid, parallelogram, rhombus) and sort and classify them by their geometric properties</p> <p><b>4m63</b> Identify benchmark angles (i.e., straight angle, right angle, half a right angle), using a reference tool, and compare other angles to these benchmarks</p> <p><b>4m64</b> Relate the names of the benchmark angles to their measures in degrees</p> <p><b>Geometry and Spatial Sense Overall: 4m58</b></p>	<p><b>Angles and Geometric Properties of 2D Shapes (6+ days)</b></p> <p><b>5m49</b> Distinguish among polygons, regular polygons, and other two-dimensional shapes</p> <p><b>5m51</b> Identify and classify acute, right, obtuse, and straight angles</p> <p><b>5m52</b> Measure and construct angles up to 90°, using a protractor</p> <p><b>5m53</b> Identify triangles (i.e., acute, right, obtuse, scalene, isosceles, equilateral), and classify them according to angle and side properties</p> <p><b>5m54</b> Construct triangles, using a variety of tools, given acute or right angles and side measurements</p> <p><b>Geometry and Spatial Sense Overall: 5m46</b></p>	<p><b>Angles and Geometric Properties of 2D Shapes (5+ days)</b></p> <p><b>6m46</b> Sort and classify quadrilaterals by geometric properties related to symmetry, angles, and sides, through investigation using a variety of tools and strategies</p> <p><b>6m47</b> Sort polygons according to the number of lines of symmetry and the order of rotational symmetry, through investigation using a variety of tools</p> <p><b>6m48</b> Measure and construct angles up to 180° using a protractor, and classify them as acute, right, obtuse, or straight angles</p> <p><b>6m49</b> Construct polygons using a variety of tools, given angle and side measurements</p> <p><b>Geometry and Spatial Sense Overall: 6m43</b></p>
<p><b>Perimeter and Area Involving Whole Numbers (8+ days)</b></p> <p><b>4m26</b> Solve problems involving the addition and subtraction of four-digit numbers, using student-generated algorithms and standard algorithms</p> <p><b>4m32</b> Multiply two-digit whole numbers by one-digit whole numbers, using a variety of tools, student-generated algorithms, and standard algorithms</p> <p><b>4m44</b> Estimate, measure using a variety of tools and strategies, and record the perimeter and area of polygons</p> <p><b>4m49</b> Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, metre, kilometre) to measure the side lengths and perimeters of various polygons</p> <p><b>4m50</b> Determine, through investigation, the relationship between the side lengths of a rectangle and its perimeter and area</p> <p><b>4m51</b> Pose and solve meaningful problems that require the ability to distinguish perimeter and area</p> <p><b>4m57</b> Compare, using a variety of tools, two-dimensional shapes that have the same perimeter or the same area</p> <p><b>Number Sense and Numeration Overall: 4m10</b> <b>Measurement Overalls: 4m38, 4m39</b></p>	<p><b>Perimeter and Area (7+ days)</b></p> <p><b>5m36</b> Estimate and measure the perimeter and area of regular and irregular polygons, using a variety of tools and strategies</p> <p><b>5m37</b> Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, decimetre, metre, kilometre) to measure the perimeter of various polygons</p> <p><b>5m38</b> Solve problems requiring conversion from metres to centimetres and from kilometres to metres</p> <p><b>5m40</b> Create, through investigation using a variety of tools and strategies, two-dimensional shapes with the same perimeter or the same area</p> <p><b>5m41</b> Determine, through investigation using a variety of tools and strategies, the relationships between the length and width of a rectangle and its area and perimeter, and generalize to develop the formulas [i.e., Area = length x width; Perimeter = (2 x length) + (2 x width)]</p> <p><b>5m68</b> Demonstrate, through investigation, an understanding of variables as changing quantities, given equations with letters or other symbols that describe relationships involving simple rates</p> <p><b>5m69</b> Demonstrate, through investigation, an understanding of variables as unknown quantities represented by a letter or other symbol</p> <p><b>5m70</b> 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</p> <p><b>Measurement Overalls: 5m31, 5m32</b> <b>Patterning and Algebra Overall: 5m62</b></p>	<p><b>Area of Parallelograms and Triangles (6+ days)</b></p> <p><b>6m32</b> Estimate, measure, and record length, area, mass, capacity, and volume, using the metric measurement system</p> <p><b>6m35</b> Construct a rectangle, a square, a triangle, and a parallelogram, using a variety of tools, given the area and/or perimeter</p> <p><b>6m36</b> Determine, through investigation using a variety of tools and strategies, the relationship between the area of a rectangle and the areas of parallelograms and triangles, by decomposing and composing</p> <p><b>6m37</b> Develop the formulas for the area of a parallelogram (i.e., Area of parallelogram = base x height) and the area of a triangle [i.e., Area of triangle = (base x height) ÷ 2], using the area relationships among rectangles, parallelograms, and triangles</p> <p><b>6m38</b> Solve problems involving the estimation and calculation of the areas of triangles and the areas of parallelograms</p> <p><b>6m39</b> Determine, using concrete materials, the relationship between units used to measure area (i.e., square centimetre, square metre), and apply the relationship to solve problems that involve conversions from square metres to square centimetres</p> <p><b>6m63</b> Demonstrate an understanding of different ways in which variables are used</p> <p><b>6m64</b> Identify, through investigation, the quantities in an equation that vary and those that remain constant</p> <p><b>6m65</b> Solve problems that use two or three symbols or letters as variables to represent different unknown quantities</p> <p><b>6m66</b> Determine the solution to a simple equation with one variable, through investigation using a variety of tools and strategies</p> <p><b>Measurement Overall: 6m29, 6m30</b> <b>Patterning and Algebra Overall: 6m56</b></p>

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<p><b>Collect, Organize, Display and Interpret Numerical Data (7+ days)</b></p> <p><b>4m88</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or the community, or content from another subject, and record observations or measurements</p> <p><b>4m89</b> Collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>4m90</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)</p> <p><b>4m91</b> Demonstrate, through investigation, an understanding of median and determine the median of a set of data</p> <p><b>4m92</b> Describe the shape of a set of data across its range of values, using charts, tables, and graphs</p> <p><b>4m93</b> Compare similarities and differences between two related sets of data, using a variety of strategies</p> <p><b>Data Management Overalls: 4m85, 4m86</b></p>	<p><b>Collect, Organize, Display and Interpret Numerical Data (6+ days)</b></p> <p><b>5m74</b> Distinguish between discrete data (i.e., data organized using numbers that have gaps between them, such as whole numbers, and often used to represent a count, such as the number of times a word is used) and continuous data (i.e., data organized using all numbers on a number line that fall within the range of the data, and used to represent measurements such as heights or ages of trees)</p> <p><b>5m75</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements</p> <p><b>5m76</b> Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including broken-line graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>5m77</b> Demonstrate an understanding that sets of data can be samples of larger populations</p> <p><b>5m78</b> Describe, through investigation, how a set of data is collected and explain whether the collection method is appropriate</p> <p><b>5m79</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including broken-line graphs)</p> <p><b>5m80</b> Calculate the mean for a small set of data and use it to describe the shape of the data set across its range of values, using charts, tables, and graphs</p> <p><b>5m81</b> Compare similarities and differences between two related sets of data, using a variety of strategies</p> <p><b>Data Management Overalls: 5m71, 5m72</b></p>	<p><b>Interpret Data (5+ days)</b></p> <p><b>6m74</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including continuous line graphs)</p> <p><b>6m75</b> Compare, through investigation, different graphical representations of the same data</p> <p><b>6m76</b> Explain how different scales used on graphs can influence conclusions drawn from the data</p> <p><b>6m77</b> Demonstrate an understanding of mean, and use the mean to compare two sets of related data, with and without the use of technology</p> <p><b>6m78</b> Demonstrate, through investigation, an understanding of how data from charts, tables, and graphs can be used to make inferences and convincing arguments</p> <p><b>Data Management Overall: 6m68</b></p>
<p><b>Represent, Compare, and Order Fractions (5+ days)</b></p> <p><b>4m17</b> Represent fractions using concrete materials, words, and standard fractional notation, and explain the meaning of the denominator as the number of fractional parts of a whole or a set, and the numerator as the number of fractional parts being considered [part-whole relationships]</p> <p><b>4m18</b> Compare and order fractions (i.e., halves, thirds, fourths, fifths, tenths) by considering the size and the number of fractional parts</p> <p><b>4m19</b> Compare fractions to the benchmarks of 0, <math>\frac{1}{2}</math>, and 1</p> <p><b>4m23</b> Count forward by halves, thirds, fourths, and tenths to beyond one whole, using concrete materials and number lines</p> <p><b>Number Sense and Numeration Overalls: 4m8, 4m9</b></p>	<p><b>Represent, Compare, and Order Fractions (7+ days)</b></p> <p><b>5m16</b> Represent, compare, and order fractional amounts with like denominators, including proper and improper fractions and mixed numbers, using a variety of tools and using standard fractional notation</p> <p><b>5m17</b> Demonstrate and explain the concept of equivalent fractions, using concrete materials</p> <p><b>Number Sense and Numeration Overall: 5m8</b></p>	<p><b>Fractions, Ratios and Rates (10+ days)</b></p> <p><b>6m14</b> Represent, compare, and order fractional amounts with unlike denominators, including proper and improper fractions and mixed numbers, using a variety of tools and using standard fractional notation</p> <p><b>6m26</b> Represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation</p> <p><b>6m28</b> Represent relationships using unit rates</p> <p><b>Number Sense and Numeration Overalls: 6m8, 6m10</b></p>

Grade 4	Grade 5	Grade 6
<p><b>Location, Movement and Geometric Patterns (6+ days)</b></p> <p><b>4m71</b> Identify and describe the general location of an object using a grid system</p> <p><b>4m72</b> Identify, perform, and describe reflections using a variety of tools</p> <p><b>4m73</b> Create and analyse symmetrical designs by reflecting a shape, or shapes, using a variety of tools, and identify the congruent shapes in the designs</p> <p><b>4m79</b> Make predictions related to repeating geometric and numeric patterns</p> <p><b>4m80</b> Extend and create repeating patterns that result from reflections, through investigation using a variety of tools</p> <p><b>Geometry and Spatial Sense Overall: 4m60</b> <b>Patterning and Algebra Overall: 4m74</b></p>	<p><b>Location, Movement and Geometric Patterns (7+ days)</b></p> <p><b>5m57</b> Locate an object using the cardinal directions (i.e., north, south, east, west) and a coordinate system</p> <p><b>5m58</b> Compare grid systems commonly used on maps (i.e., the use of numbers and letters to identify an area; the use of a coordinate system based on the cardinal directions to describe a specific location)</p> <p><b>5m59</b> Identify, perform, and describe translations, using a variety of tools</p> <p><b>5m60</b> Create and analyse designs by translating and/or reflecting a shape, or shapes, using a variety of tools</p> <p><b>5m63</b> Create, identify, and extend numeric and geometric patterns, using a variety of tools</p> <p><b>5m66</b> Make predictions related to growing and shrinking geometric and numeric patterns</p> <p><b>5m67</b> Extend and create repeating patterns that result from translations, through investigation using a variety of tools</p> <p><b>Geometry and Spatial Sense Overall: 5m48</b> <b>Patterning and Algebra Overall: 5m61</b></p>	<p><b>Location, Movement and Geometric Patterns (7+ days)</b></p> <p><b>6m52</b> Explain how a coordinate system represents location, and plot points in the first quadrant of a Cartesian coordinate plane</p> <p><b>6m53</b> Identify, perform, and describe, through investigation using a variety of tools, rotations of 180° and clockwise and counter clockwise rotations of 90°, with the centre of rotation inside or outside the shape</p> <p><b>6m54</b> Create and analyse designs made by reflecting, translating, and/or rotating a shape, or shapes, by 90° or 180°</p> <p><b>6m62</b> Extend and create repeating patterns that result from rotations, through investigation using a variety of tools</p> <p><b>Geometry and Spatial Sense Overall: 6m45</b> <b>Patterning and Algebra Overall: 6m55</b></p>
<p><b>Numeric Patterns (6+ days)</b></p> <p><b>4m76</b> Extend, describe, and create repeating, growing, and shrinking number patterns</p> <p><b>4m77</b> Connect each term in a growing or shrinking pattern with its term number, and record the patterns in a table of values that shows the term number and the term</p> <p><b>4m78</b> Create a number pattern involving addition, subtraction, or multiplication, given a pattern rule expressed in words</p> <p><b>4m79</b> Make predictions related to repeating geometric and numeric patterns</p> <p><b>Patterning and Algebra Overall: 4m74</b></p>	<p><b>Numeric Patterns (6+ days)</b></p> <p><b>5m63</b> Create, identify, and extend numeric and geometric patterns, using a variety of tools</p> <p><b>5m64</b> Build a model to represent a number pattern presented in a table of values that shows the term number and the term</p> <p><b>5m65</b> Make a table of values for a pattern that is generated by adding or subtracting a number (i.e., a constant) to get the next term, or by multiplying or dividing by a constant to get the next term, given either the sequence or the pattern rule in words</p> <p><b>5m66</b> Make predictions related to growing and shrinking geometric and numeric patterns</p> <p><b>Patterning and Algebra Overall: 5m61</b></p>	<p><b>Numeric Patterns (7+ days)</b></p> <p><b>6m57</b> Identify geometric patterns, through investigation using concrete materials or drawings, and represent them numerically</p> <p><b>6m58</b> Make tables of values, for growing patterns given pattern rules, in words, then list the ordered pairs (with the first coordinate representing the term number and the second coordinate representing the term) and plot the points in the first quadrant, using a variety of tools</p> <p><b>6m59</b> Determine the term number of a given term in a growing pattern that is represented by a pattern rule in words, a table of values, or a graph</p> <p><b>6m60</b> Describe pattern rules (in words) that generate patterns by adding or subtracting a constant, or multiplying or dividing by a constant, to get the next term, then distinguish such pattern rules from pattern rules, given in words, that describe the general term by referring to the term number</p> <p><b>6m61</b> Determine a term, given its term number, by extending growing and shrinking patterns that are generated by adding or subtracting a constant, or multiplying or dividing by a constant, to get the next term</p> <p><b>Patterning and Algebra Overall: 6m55</b></p>

Grade 4	Grade 5	Grade 6
<p><b>3D Figures (7+ days)</b></p> <p><b>4m65</b> Identify and describe prisms and pyramids, and classify them by their geometric properties (i.e., shape of faces, number of edges, number of vertices), using concrete materials</p> <p><b>4m66</b> Construct a three-dimensional figure from a picture or model of the figure, using connecting cubes</p> <p><b>4m67</b> Construct skeletons of three-dimensional figures, using a variety of tools, and sketch the skeletons</p> <p><b>4m68</b> Draw and describe nets of rectangular and triangular prisms</p> <p><b>4m69</b> Construct prisms and pyramids from given nets</p> <p><b>4m70</b> Construct three-dimensional figures, using only congruent shapes</p> <p><b>Geometry and Spatial Sense Overalls: 4m58, 4m59</b></p>	<p><b>3D Figures (4+ days)</b></p> <p><b>5m50</b> Distinguish among prisms, right prisms, pyramids, and other three-dimensional figures</p> <p><b>5m55</b> Identify prisms and pyramids from their nets</p> <p><b>5m56</b> Construct nets of prisms and pyramids, using a variety of tools</p> <p><b>Geometry and Spatial Sense Overalls: 5m46, 5m47</b></p>	<p><b>3D Figures (5+ days)</b></p> <p><b>6m50</b> Build three-dimensional models using connecting cubes, given isometric sketches or different views (i.e., top, side, front) of the structure</p> <p><b>6m51</b> Sketch, using a variety of tools, isometric perspectives and different views (i.e., top, side, front) of three-dimensional figures built with interlocking cubes</p> <p><b>Geometry and Spatial Sense Overall: 6m44</b></p>
<p><b>Mass (4+ days)</b></p> <p><b>4m45</b> Estimate, measure, and record the mass of objects, using the standard units of the kilogram and the gram</p> <p><b>4m52</b> Compare and order a collection of objects, using standard units of mass (i.e., gram, kilogram) and/or capacity (i.e., millilitre, litre)</p> <p><b>4m53</b> Determine, through investigation, the relationship between grams and kilograms</p> <p><b>4m55</b> Select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram) and the most appropriate standard unit to measure the capacity of a container (i.e., millilitre, litre)</p> <p><b>Measurement Overalls: 4m38, 4m39</b></p>	<p><b>Mass (2+ days)</b></p> <p><b>5m45</b> Select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram, tonne)</p> <p><b>Measurement Overall: 5m32</b></p>	<p><b>Mass (2+ days)</b></p> <p><b>6m32</b> Estimate, measure, and record length, area, mass, capacity, and volume, using the metric measurement system</p> <p><b>6m34</b> Solve problems requiring conversion from larger to smaller metric units</p> <p><b>Measurement Overalls: 6m29, 6m30</b></p>

Grade 4	Grade 5	Grade 6
<p><b>Volume and Capacity (5+ days)</b></p> <p><b>4m46</b> Estimate, measure, and record the capacity of containers, using the standard units of the litre and the millilitre</p> <p><b>4m47</b> Estimate, measure using concrete materials, and record volume, and relate volume to the space taken up by an object</p> <p><b>4m52</b> Compare and order a collection of objects, using standard units of mass (i.e., gram, kilogram) and/or capacity (i.e., millilitre, litre)</p> <p><b>4m54</b> Determine, through investigation, the relationship between millilitres and litres</p> <p><b>4m55</b> Select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram) and the most appropriate standard unit to measure the capacity of a container (i.e., millilitre, litre)</p> <p><b>Measurement Overalls: 4m38, 4m39</b></p>	<p><b>Volume and Capacity (4+ days)</b></p> <p><b>5m43</b> Determine, through investigation, the relationship between capacity (i.e., the amount a container can hold) and volume (i.e., the amount of space taken up by an object), by comparing the volume of an object with the amount of liquid it can contain or displace</p> <p><b>5m44</b> 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., Volume = area of base x height)</p> <p><b>5m69</b> Demonstrate, through investigation, an understanding of variables as unknown quantities represented by a letter or other symbol</p> <p><b>5m70</b> 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</p> <p><b>Measurement Overall: 5m32</b> <b>Patterning and Algebra Overall: 5m62</b></p>	<p><b>Volume, Surface Area and Capacity (7+ days)</b></p> <p><b>6m32</b> Estimate, measure, and record length, area, mass, capacity, and volume, using the metric measurement system</p> <p><b>6m34</b> Solve problems requiring conversion from larger to smaller metric units</p> <p><b>6m40</b> Determine, through investigation using a variety of tools and strategies, the relationship between the height, the area of the base, and the volume of a triangular prism, and generalize to develop the formula (i.e., Volume = area of base x height)</p> <p><b>6m41</b> Determine, through investigation using a variety of tools and strategies, the surface area of rectangular and triangular prisms</p> <p><b>6m42</b> Solve problems involving the estimation and calculation of the surface area and volume of triangular and rectangular prisms</p> <p><b>6m63</b> Demonstrate an understanding of different ways in which variables are used</p> <p><b>6m64</b> Identify, through investigation, the quantities in an equation that vary and those that remain constant</p> <p><b>6m65</b> Solve problems that use two or three symbols or letters as variables to represent different unknown quantities</p> <p><b>6m66</b> Determine the solution to a simple equation with one variable, through investigation using a variety of tools and strategies</p> <p><b>Measurement Overalls: 6m29, 6m30</b> <b>Patterning and Algebra Overall: 6m56</b></p>
<p><b>Represent, Compare and Order Numbers 0.1 to 10 000 (5+ Days)</b></p> <p><b>4m13</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.1 to 10 000, using a variety of tools and strategies</p> <p><b>4m16</b> Represent, compare, and order decimal numbers to tenths, using a variety of tools, and using standard decimal notation</p> <p><b>4m24</b> Count forward by tenths from any decimal number expressed to one decimal place, using concrete materials and number lines</p> <p><b>Number Sense and Numeration Overalls: 4m8, 4m9</b></p>	<p><b>Represent, Compare and Order Numbers 0.01 to 100 000 (4+ days)</b></p> <p><b>5m12</b> Represent, compare, and order whole numbers and decimal numbers from 0.01 to 100 000 using a variety of tools</p> <p><b>5m13</b> 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</p> <p><b>5m21</b> Count forward by hundredths from any decimal number expressed to two decimal places, using concrete materials and number lines</p> <p><b>Number Sense and Numeration Overalls: 5m8, 5m9</b></p>	<p><b>Represent, Compare and Order Numbers 0.001 to 1 000 000 (5+ days)</b></p> <p><b>6m11</b> Represent, compare, and order whole numbers and decimal numbers from 0.001 to 1 000 000, using a variety of tools</p> <p><b>6m12</b> 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</p> <p><b>Number Sense and Numeration Overalls: 6m8</b></p>

Grade 4	Grade 5	Grade 6
<p><b>Operations Involving Numbers 0.1 to 10 000 (7+ days)</b></p> <p><b>4m13</b> Demonstrate an understanding of place value in whole numbers and decimal numbers from 0.1 to 10 000, using a variety of tools and strategies</p> <p><b>4m27</b> Add and subtract decimal numbers to tenths, using concrete materials and student-generated algorithms</p> <p><b>4m31</b> Multiply whole numbers by 10, 100, and 1000, and divide whole numbers by 10 and 100, using mental strategies</p> <p><b>4m33</b> Divide two-digit whole numbers by one-digit whole numbers, using a variety of tools and student-generated algorithms</p> <p><b>Number Sense and Numeration Overalls: 4m8, 4m10</b></p>	<p><b>Operations Involving Numbers 0.01 to 100 000 (6+ days)</b></p> <p><b>5m13</b> 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</p> <p><b>5m20</b> Solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 100 000</p> <p><b>5m26</b> Multiply decimal numbers by 10, 100, 1000, and 10 000, and divide decimal numbers by 10 and 100, using mental strategies</p> <p><b>5m27</b> Use estimation when solving problems involving the addition, subtraction, multiplication, and division of whole numbers, to help judge the reasonableness of a solution</p> <p><b>5m38</b> Solve problems requiring conversion from metres to centimetres and from kilometres to metres</p> <p><b>5m45</b> Select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram, tonne)</p> <p><b>Number Sense and Numeration Overalls: 5m8, 5m10</b> <b>Measurement Overalls: 5m32, 5m38, 5m45</b></p>	<p><b>Operations Involving Numbers 0.001 to 1 000 000 (6+ days)</b></p> <p><b>6m12</b> 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</p> <p><b>6m20</b> Add and subtract decimal numbers to thousandths, using concrete materials, estimation, algorithms, and calculators</p> <p><b>6m22</b> Multiply whole numbers by 0.1, 0.01, and 0.001 using mental strategies</p> <p><b>6m23</b> Multiply and divide decimal numbers by 10, 100, 1000, and 10 000 using mental strategies</p> <p><b>6m24</b> Use estimation when solving problems involving the addition and subtraction of whole numbers and decimals, to help judge the reasonableness of a solution</p> <p><b>6m66</b> Determine the solution to a simple equation with one variable, through investigation using a variety of tools and strategies</p> <p><b>Number Sense and Numeration Overalls: 6m8, 6m9</b> <b>Patterning and Algebra Overall: 6m56</b></p>
<p><b>Perimeter and Area Involving Decimal Tenths (3+ days)</b></p> <p><b>4m27</b> Add and subtract decimal numbers to tenths, using concrete materials and student-generated algorithms</p> <p><b>4m31</b> Multiply whole numbers by 10, 100, and 1000, and divide whole numbers by 10 and 100, using mental strategies</p> <p><b>4m33</b> Divide two-digit whole numbers by one-digit whole numbers, using a variety of tools and student-generated algorithms</p> <p><b>4m44</b> Estimate, measure using a variety of tools and strategies, and record the perimeter and area of polygons</p> <p><b>4m49</b> Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, decimetre, metre, kilometre) to measure the side lengths and perimeters of various polygons</p> <p><b>4m89</b> Collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>4m90</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)</p> <p><b>4m93</b> Compare similarities and differences between two related sets of data, using a variety of strategies</p> <p><b>Number Sense and Numeration Overall: 4m10</b> <b>Measurement Overall: 4m38</b> <b>Data Management Overalls: 4m85, 4m86</b></p>	<p><b>Perimeter and Area Applications (5+ days)</b></p> <p><b>5m37</b> Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, decimetre, metre, kilometre) to measure the perimeter of various polygons</p> <p><b>5m38</b> Solve problems requiring conversion from metres to centimetres and from kilometres to metres</p> <p><b>5m42</b> Solve problems requiring the estimation and calculation of perimeters and areas of rectangles</p> <p><b>5m68</b> Demonstrate, through investigation, an understanding of variables as changing quantities, given equations with letters or other symbols that describe relationships involving simple rates</p> <p><b>Measurement Overall: 5m32</b> <b>Patterning and Algebra Overall: 5m62</b></p>	

TIPS4Math Grades 4 to 6 Overview

Grade 4	Grade 5	Grade 6
<p><b>Fractions and Decimal Tenths Relationships (5+ days)</b></p> <p><b>4m17</b> Represent fractions using concrete materials, words, and standard fractional notation, and explain the meaning of the denominator as the number of fractional parts of a whole or a set, and the numerator as the number of fractional parts being considered [part-whole relationships]</p> <p><b>4m20</b> Demonstrate and explain the relationship between equivalent fractions, using concrete materials and drawings</p> <p><b>4m36</b> Determine and explain, through investigation, the relationship between fractions (i.e., halves, fifths, tenths) and decimals to tenths, using a variety of tools and strategies</p> <p><b>Number Sense and Numeration Overalls: 4m8, 4m11</b></p>	<p><b>Fractions and Decimal Hundredths Relationships (5+ days)</b></p> <p><b>5m16</b> Represent, compare, and order fractional amounts with like denominators, including proper and improper fractions and mixed numbers using a variety of tools and using standard fractional notation</p> <p><b>5m17</b> Demonstrate and explain the concept of equivalent fractions, using concrete materials</p> <p><b>5m18</b> Demonstrate and explain equivalent representations of a decimal number, using concrete materials and drawings</p> <p><b>5m28</b> Describe multiplicative relationships between quantities by using simple fractions and decimals</p> <p><b>5m29</b> Determine and explain, through investigation using concrete materials, drawings, and calculators, the relationship between fractions (i.e., with denominators of 2, 4, 5, 10, 20, 25, 50, and 100) and their equivalent decimal forms</p> <p><b>Number Sense and Numeration Overalls: 5m8, 5m11</b></p>	<p><b>Fractions, Decimals, Ratios and Percents (5+ days)</b></p> <p><b>6m14</b> Represent, compare, and order fractional amounts with unlike denominators, including proper and improper fractions and mixed numbers, using a variety of tools and using standard fractional notation</p> <p><b>6m15</b> Estimate quantities using benchmarks of 10%, 25%, 50%, 75%, and 100%</p> <p><b>6m26</b> Represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation</p> <p><b>6m27</b> 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</p> <p><b>Number Sense and Numeration Overalls: 6m8, 6m10</b></p>
<p><b>Probability (5+ days)</b></p> <p><b>4m88</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or the community, or content from another subject, and record observations or measurements</p> <p><b>4m89</b> Collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>4m90</b> Read, interpret, and draw conclusions from primary data and from secondary data presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)</p> <p><b>4m94</b> Predict the frequency of an outcome in a simple probability experiment, explaining their reasoning; conduct the experiment; and compare the result with the prediction</p> <p><b>4m95</b> Determine, through investigation, how the number of repetitions of a probability experiment can affect the conclusions drawn</p> <p><b>Data Management Overall: 4m85, 4m86, 4m87</b></p>	<p><b>Probability (6+ days)</b></p> <p><b>5m16</b> Represent, compare, and order fractional amounts with like denominators, including proper and improper fractions and mixed numbers, using a variety of tools and using standard fractional notation</p> <p><b>5m75</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements</p> <p><b>5m76</b> Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including broken-line graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>5m79</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including broken-line graphs)</p> <p><b>5m82</b> Determine and represent all the possible outcomes in a simple probability experiment, using systematic lists and area models</p> <p><b>5m83</b> Represent, using a common fraction, the probability that an event will occur in simple games and probability experiments</p> <p><b>5m84</b> Pose and solve simple probability problems, and solve them by conducting probability experiments and selecting appropriate methods of recording the results</p> <p><b>Number Sense and Numeration Overall: 5m8</b> <b>Data Management Overalls: 5m71, 5m72, 5m73</b></p>	<p><b>Probability (6+ days)</b></p> <p><b>6m70</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements</p> <p><b>6m71</b> Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including continuous line graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>6m74</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including continuous line graphs)</p> <p><b>6m79</b> Express theoretical probability as a ratio of the number of favourable outcomes to the total number of possible outcomes, where all outcomes are equally likely</p> <p><b>6m80</b> Represent the probability of an event (i.e., the likelihood that the event will occur), using a value from the range of 0 (never happens or impossible) to 1 (always happens or certain)</p> <p><b>6m81</b> Predict the frequency of an outcome of a simple probability experiment or game, by calculating and using the theoretical probability of that outcome</p> <p><b>Data Management Overalls: 6m67, 6m68, 6m69</b></p>

Grade 4	Grade 5	Grade 6
<p><b>Time (4+ days)</b></p> <p><b>4m42</b> Estimate, measure (i.e., using an analogue clock) and represent time intervals to the nearest minute</p> <p><b>4m43</b> Estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in five-minute intervals, hours, days, weeks, months, or years</p> <p><b>4m56</b> Solve problems involving the relationship between years and decades, and between decades and centuries</p> <p><b>Measurement Overalls: 4m38, 4m39</b></p>	<p><b>Time (5+ days)</b></p> <p><b>5m33</b> Estimate, measure (i.e., using an analogue clock), and represent time intervals to the nearest second</p> <p><b>5m34</b> Estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in minutes, hours, days, weeks, months, or years</p> <p><b>5m39</b> Solve problems involving the relationship between a 12-hour clock and a 24-hour clock</p> <p><b>Measurement Overalls: 5m31, 5m32</b></p>	
<p><b>Money (6+ days)</b></p> <p><b>4m21</b> Read and represent money amounts to \$100</p> <p><b>4m28</b> Add and subtract money amounts by making simulated purchases and providing change for amounts up to \$100, using a variety of tools</p> <p><b>Number Sense and Numeration Overalls: 4m8, 4m10</b></p>	<p><b>Temperature (3+ days)</b></p> <p><b>5m35</b> Measure and record temperatures to determine and represent temperature changes over time</p> <p><b>5m74</b> Distinguish between discrete data (i.e., data organized using numbers that have gaps between them, such as whole numbers, and often used to represent a count, such as the number of times a word is used) and continuous data (i.e., data organized using all numbers on a number line that fall within the range of the data, and used to represent measurements such as heights or ages of trees)</p> <p><b>5m75</b> Collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements</p> <p><b>5m76</b> Collect and organize discrete or continuous primary data and secondary data and display the data in charts, tables, and graphs (including broken-line graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools</p> <p><b>5m79</b> Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including broken-line graphs)</p> <p><b>5m80</b> Calculate the mean for a small set of data and use it to describe the shape of the data set across its range of values, using charts, tables, and graphs</p> <p><b>5m81</b> Compare similarities and differences between two related sets of data, using a variety of strategies</p> <p><b>Measurement Overall: 5m31</b></p> <p><b>Data Management Overalls: 5m71, 5m72</b></p>	