

Leaps AND Bounds

TOWARD Math Understanding

Correlation to Ontario Curriculum and Grade 3 Classroom Resources

Note: *Leaps and Bounds 3/4* is a math intervention resource and therefore does not include new content and concepts being introduced to students for the first time in Grade 4. *Leaps and Bounds* includes content from Grades 1 to 3 that will prepare students who are struggling for work at the Grade 3 or 4 level.

GRADE 3 Core Resources Correlation with Grade 3 Ontario core resources			INTERVENTION Resources and Expectations Correlation between <i>Leaps and Bounds 3/4</i> and prerequisite expectations from Ontario Grades 1 to 3		
Number Sense and Numeration: Quantity Relationships					
Grade 3 Ontario expectations	<i>Nelson Mathematics 3</i>	<i>Math Makes Sense 3</i>	<i>Leaps and Bounds 3/4</i> Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– represent, compare, and order whole numbers to 1000, using a variety of tools (e.g., base ten materials or drawings of them, number lines with increments of 100 or other appropriate amounts)	Ch. 2 Getting Started, 2.1, 2.2, 2.5, 2.6, Ch. 2 Task	Chapter 1 Patterning and Place Value, 1.4, 1.5, 1.8, 1.10	Representing Whole Numbers <i>Pathway 1:</i> Representing Numbers to 1000 <i>Pathway 2:</i> Representing Numbers to 100 <i>Pathway 3:</i> Representing Numbers to 20 Comparing and Ordering <i>Pathway 1:</i> Comparing and Ordering to 1000 <i>Pathway 2:</i> Comparing and Ordering to 100 <i>Pathway 3:</i> Comparing and Ordering to 20	– represent, compare, and order whole numbers to 100, including money amounts to 100¢, using a variety of tools (e.g., ten frames, base ten materials, coin manipulatives, number lines, hundreds charts and hundreds carpets)	– 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)
– read and print in words whole numbers to 100, using meaningful contexts (e.g. books, speed limits signs)	Ch. 2 Lesson 1	Chapter 1 Patterning and Place Value, 1.6	Representing Whole Numbers <i>Pathway 1:</i> Representing Numbers to 1000 <i>Pathway 2:</i> Representing Numbers to 100 <i>Pathway 3:</i> Representing Numbers to 20 Comparing and Ordering <i>Pathway 1:</i> Comparing and Ordering to 1000 <i>Pathway 2:</i> Comparing and Ordering to 100 <i>Pathway 3:</i> Comparing and Ordering to 20	– read and print in words whole numbers to twenty, using meaningful contexts (e.g., storybooks, posters, signs)	– read and print in words whole numbers to ten, using meaningful contexts (e.g., storybooks, posters)

Number Sense and Numeration: Quantity Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– identify and represent the value of a digit in a number according to its position in the number (e.g. use base ten materials to show that the 3 in 324 represents 300)	Ch. 2 Getting Started, 2.1, 2.2, 2.5, 2.6	Chapter 1 Patterning and Place Value, 1.6, 1.8	Representing Whole Numbers <i>Pathway 1: Representing Numbers to 1000</i> <i>Pathway 2: Representing Numbers to 100</i> <i>Pathway 3: Representing Numbers to 20</i> Comparing and Ordering <i>Pathway 1: Comparing and Ordering to 1000</i> <i>Pathway 2: Comparing and Ordering to 100</i> <i>Pathway 3: Comparing and Ordering to 20</i>	– 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)	– 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) – relate numbers to the anchors of 5 and 10 (e.g., 7 is 2 more than 5 and 3 less than 10)
– compose and decompose three-digit numbers into hundreds, tens, and ones in a variety of ways, using concrete materials (e.g., use base ten materials to decompose 327 into 3 hundreds, 2 tens, and 7 ones, or into 2 hundreds, 12 tens, and 7 ones)	Ch. 2 Getting Started, 2.1, 2.2, 2.6	Chapter 1 Patterning and Place Value, 1.8, 1.11	Representing Whole Numbers <i>Pathway 1: Representing Numbers to 1000</i> <i>Pathway 2: Representing Numbers to 100</i> <i>Pathway 3: Representing Numbers to 20</i>	– 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; compose 37¢ using one quarter, one dime, and two pennies)	– 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)
– round two-digit numbers to the nearest ten, in problems arising from real-life situations	Ch. 2 Lesson 4.5	Chapter 1 Patterning and Place Value, 1.14			– estimate the number of objects in a set, and check by counting (e.g., “I guessed that there were 20 cubes in the pile. I counted them and there were only 17 cubes. 17 is close to 20.”)

Number Sense and Numeration: Quantity Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– represent and explain, using concrete materials, the relationship among the numbers 1, 10, 100, and 1000, (e.g., use base ten materials to represent the relationship between a decade and a century, or a century and a millennium)	Ch. 2 Getting Started, 2.1, 2.2, 2.3	Chapter 1 Patterning and Place Value, 1.13	Representing Whole Numbers <i>Pathway 1: Representing Numbers to 1000</i> <i>Pathway 2: Representing Numbers to 100</i>		
– divide whole objects and sets of objects into equal parts, and identify the parts using fractional names (e.g., one half; three thirds; two fourths or two quarters), without using numbers in standard fractional notation	Ch. 12 Getting Started, 12.1, 12.2, 12.3, Ch. 12 Math Game (Fraction Concentration), 12.4, Ch. 12 Curious Math (Fraction Neighbours), Ch. 12 Mental Imagery, Ch. 12 Task	Chapter 8 Exploring Fractions, 8.1, 8.2, 8.3, 8.4	Fractions <i>Pathway 1: Fractions as Parts of Sets</i> <i>Pathway 2: Fractions as Parts of Wholes</i> <i>Pathway 3: Halves</i>	– determine, through investigation using concrete materials, the relationship between the number of fractional parts of a whole and the size of the fractional parts (e.g., a paper plate divided into fourths has larger parts than a paper plate divided into eighths) – regroup fractional parts into wholes, using concrete materials (e.g., combine nine fourths to form two wholes and one fourth) – compare fractions using concrete materials, without using standard fractional notation (e.g., use fraction pieces to show that three fourths are bigger than one half, but smaller than one whole)	– divide whole objects into parts and identify and describe, through investigation, equal-sized parts of the whole, using fractional names (e.g., halves; fourths or quarters)
– represent and describe the relationships between coins and bills up to \$10 (e.g., “There are eight quarters in a toonie and ten dimes in a loonie.”)	2.8, Ch. 2 Math Game (Counting and Trading Coins), 6.8, 6.9	Chapter 6 Measurement, 6.5	Skip Counting <i>Pathway 1: Skip Counting to 1000</i> <i>Pathway 2: Skip Counting to 100</i>		– identify and describe various coins (i.e., penny, nickel, dime, quarter, \$1 coin, \$2 coin), using coin manipulatives or drawings, and state their value (e.g., the value of a penny is one cent; the value of a toonie is two dollars)

Number Sense and Numeration: Quantity Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– estimate, count, and represent (using the \$ symbol) the value of a collection of coins and bills with a maximum value of \$10	2.6, 2.8, Ch. 2 Math Game (Counting and Trading Coins)	Chapter 6 Measurement, 6.6	Skip Counting <i>Pathway 1:</i> Skip Counting to 1000 <i>Pathway 2:</i> Skip Counting to 100	– estimate, count, and represent (using the ¢ symbol) the value of a collection of coins with a maximum value of one dollar	– represent money amounts to 20¢, through investigation using coin manipulatives
– solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 1000	Ch. 2 Getting Started, 2.1, 2.2, 2.4, 2.5, Ch. 2 Math Game (Duelling Digits), 2.6, Ch. 2 Task	Chapter 1 Patterning and Place Value, 1.13	Representing Whole Numbers Comparing and Ordering Skip Counting		
Number Sense and Numeration: Counting					
– count forward by 1's, 2's, 5's, 10's, and 100's to 1000 from various starting points, and by 25's to 1000 starting from multiples of 25, using a variety of tools and strategies (e.g., skip count with and without the aid of a calculator; skip count by 10's using dimes)	1.3, 2.3, 5.3, 9.1, 9.2	Chapter 1 Patterning and Place Value, 1.2, 1.3, 1.9	Skip Counting <i>Pathway 1:</i> Skip Counting to 1000 <i>Pathway 2:</i> Skip Counting to 100 <i>Pathway 3:</i> Skip Counting to 20	– 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) – 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)	– count forward by 1's, 2's, 5's, and 10's to 100, using a variety of tools and strategies (e.g., move with steps; skip count on a number line; place counters on a hundreds chart; connect cubes to show equal groups; count groups of pennies, nickels, or dimes) – demonstrate, using concrete materials, the concept of one-to-one correspondence between number and objects when counting

Number Sense and Numeration: Counting ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– count backwards by 2’s, 5’s, and 10’s from 100 using multiples of 2, 5, and 10 as starting points, and count backwards by 100’s from 1000 and any number less than 1000, using a variety of tools (e.g., number lines, calculators, coins) and strategies.	1.3, 2.3, 10.2, 10.4	Chapter 1 Patterning and Place Value, 1.2, 1.3, 1.9	Skip Counting <i>Pathway 1:</i> Skip Counting to 1000 <i>Pathway 2:</i> Skip Counting to 100 <i>Pathway 3:</i> Skip Counting to 20	– count backwards by 1’s from 50 and any number less than 50, and count backwards by 10’s from 100 and any number less than 100, using number lines and hundreds charts	– count backwards by 1’s from 20 and any number less than 20 (e.g., count backwards from 18 to 11), with and without the use of concrete materials and number lines – count backwards from 20 by 2’s and 5’s, using a variety of tools (e.g., number lines, hundreds charts) – use ordinal numbers to thirty-first in meaningful contexts (e.g., identify the days of the month on a calendar)
Number Sense and Numeration: Operational Sense					
– solve problems involving the addition and subtraction of two-digit numbers, using a variety of mental strategies (e.g., to add $37 + 26$, add the tens, add the ones, then combine the tens and one like this: $30 + 20 = 50$, $7 + 6 = 13$, $50 + 13 = 63$)	Ch. 1 Mental Math, Ch. 2 Mental Math, Ch. 4 Getting Started, 4.1, 4.2, 4.3, Ch. 4 Math Game (Operation 25), Ch. 4 Mental Math, Ch. 4 Task, Ch. 5 Mental Math, Ch. 6 Mental Math, Ch. 9 Curious Math (Odd Arrays), Ch. 9 Task, Ch. 10 Mental Math	Chapter 2 Patterns in Addition and Subtraction, 2.7, 2.8	Adding Whole Numbers <i>Pathway 1:</i> Adding Three-Digit Numbers <i>Pathway 2:</i> Adding Two-Digit Numbers <i>Pathway 3:</i> Adding One-Digit Numbers Subtracting Whole Numbers <i>Pathway 1:</i> Subtracting Three-Digit Numbers <i>Pathway 2:</i> Subtracting Numbers to 100 <i>Pathway 3:</i> Subtracting Numbers to 20 Mental Math <i>Pathway 1:</i> Compensating <i>Pathway 2:</i> Regrouping <i>Pathway 3:</i> Relating to 5 or 10	– solve problems involving the addition and subtraction of whole numbers to 18, using a variety of mental strategies (e.g., “To add $6 + 8$, I could double 6 and get 12 and then add 2 more to get 14.”)	– solve a variety of problems involving the addition and subtraction of whole numbers to 20, using concrete materials and drawings (e.g., pictures, number lines)

Number Sense and Numeration: Operational Sense ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– add and subtract three-digit numbers, using concrete materials, student-generated algorithms, and standard algorithms	4.2, 4.3, Ch. 4 Math Game (Operation 25), 4.4, 4.6, 4.7, Ch. 4 Task, Ch. 6 Getting Started, 6.2, 6.3, Ch. 6 Curious Math (Checking Addition), 6.4, 6.6, Ch. 6 Math Game (Spill the Beans), 6.7, 6.10, Ch. 6 Math Game (Digit Difference), Ch. 6 Task	Chapter 2 Patterns in Addition and Subtraction, 2.11, 2.12, 2.13, 2.14	Adding Whole Numbers <i>Pathway 1:</i> Adding Three-Digit Numbers <i>Pathway 2:</i> Adding Two-Digit Numbers <i>Pathway 3:</i> Adding One-Digit Numbers Subtracting Whole Numbers <i>Pathway 1:</i> Subtracting Three-Digit Numbers <i>Pathway 2:</i> Subtracting Numbers to 100 <i>Pathway 3:</i> Subtracting Numbers to 20	– solve problems involving the addition and subtraction of two-digit numbers, with and without regrouping, using concrete materials (e.g., base ten materials, counters), student-generated algorithms, and standard algorithms – describe relationships between quantities by using whole-number addition and subtraction (e.g., “If you ate 7 grapes and I ate 12 grapes, I can say that I ate 5 more grapes than you did, or you ate 5 fewer grapes than I did.”)	– 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)
– use estimation when solving problems involving addition and subtraction, to help judge the reasonableness of a solution	2.4, 4.5, 6.1, 6.3, Ch. 6 Curious Math (Checking Addition), 6.5, 6.10	Chapter 2 Patterns in Addition and Subtraction, 2.10, 2.13 with supporting TG note	Adding Whole Numbers <i>Pathway 1:</i> Adding Three-Digit Numbers <i>Pathway 2:</i> Adding Two-Digit Numbers <i>Pathway 3:</i> Adding One-Digit Numbers Subtracting Whole Numbers <i>Pathway 1:</i> Subtracting Three-Digit Numbers <i>Pathway 2:</i> Subtracting Numbers to 100 <i>Pathway 3:</i> Subtracting Numbers to 20		
– add and subtract money amounts, using a variety of tools (e.g., currency manipulatives, drawings), to make simulated purchases and change for amounts up to \$10	4.6, 6.8, Ch. 6 Task	Chapter 6 Measurement, 6.8, 6.9		– add and subtract money amounts to 100¢, using a variety of tools (e.g., concrete materials, drawings) and strategies (e.g., counting on, estimating, representing using symbols)	– add and subtract money amounts to 10¢, using coin manipulatives and drawings.

Number Sense and Numeration: Operational Sense ctd.					
Grade 3 Ontario expectations	<i>Nelson Mathematics 3</i>	<i>Math Makes Sense 3</i>	<i>Leaps and Bounds 3/4 Topics</i>	Grade 2 Ontario expectations	Grade 1 Ontario expectations
<p>– 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) determine number relationships and the effect of repeated operations on numbers, using calculator</p>	<p>Ch. 9 Getting Started, 9.1, 9.2, 9.3, Ch. 9 Math Game (Tap it Out), 9.4, 9.5, 9.6, Ch. 9 Task 10.1, 10.2, 10.3, Ch. 10 Math Game (Fill-a-Row Division), 10.4, Ch. 10 Task</p>	<p>Chapter 4 Multiplication and Division, 4.1, 4.2, 4.8, 4.9</p>			
<p>– multiply to 7×7 and divide to $49 \div 7$, using a variety of mental strategies (e.g., doubles, doubles plus another set, skip counting).</p>	<p>Ch. 9 Getting Started, 9.1, 9.2, 9.3, Ch. 9 Math Game (Tap it Out), 9.4, 9.5, 9.6, 10.1, 10.2, 10.3, Ch. 10 Math Game (Fill-a-Row Division), 10.4, Ch. 10 Task</p>	<p>Chapter 4 Multiplication and Division, 4.3, 4.6, 4.10</p>		<p>– 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 $2 + 2 + 2$ and to 3×2)</p> <p>– represent and explain, through investigation using concrete materials and drawings, division as the sharing of a quantity equally (e.g., “I can share 12 carrot sticks equally among 4 friends by giving each person 3 carrot sticks.”)</p>	

Measurement: Attributes, Units and Measurement Sense					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– estimate, measure, and record length, height, and distance, using standard units (i.e., centimetre, metre, kilometre)	Ch. 5 Getting Started, 5.1, 5.2, 5.3, 5.4, Ch. 5 Curious Math (Comparing Body Lengths), Ch. 5 Task	Chapter 9 Length, Perimeter, and Area, 9.1, 9.2, 9.3	Length <i>Pathway 1:</i> Length: Standard Units <i>Pathway 2:</i> Length: Non-Standard Units	– estimate and measure length, height, and distance, using standard units (i.e., centimetre, metre) and non-standard units – choose benchmarks – in this case, personal referents – for a centimetre and a metre (e.g., “My little finger is about as wide as one centimetre. A really big step is about one metre.”) to help them perform measurement tasks – select and justify the choice of a standard unit (i.e., centimetre or metre) or a nonstandard unit to measure length (e.g., “I needed a fast way to check that the two teams would race the same distance, so I used paces.”)	– demonstrate an understanding of the use of non-standard units of the same size (e.g., straws, index cards) for measuring – estimate, measure (i.e., by placing nonstandard units repeatedly, without overlaps or gaps), and record lengths, heights, and distances (e.g., a book is about 10 paper clips wide; a pencil is about 3 toothpicks long) – construct, using a variety of strategies, tools for measuring lengths, heights, and distances in non-standard units (e.g., footprints on cash register tape or on connecting cubes)
– draw items using a ruler, given specific lengths in centimetres	5.1	Chapter 9 Length, Perimeter, and Area, 9.1	Length <i>Pathway 1:</i> Length: Standard Units <i>Pathway 2:</i> Length: Non-Standard Units	– record and represent measurements of length, height, and distance in a variety of ways (e.g., written, pictorial, concrete)	
– read time using analogue clocks, to the nearest five minutes, and using digital clocks (e.g., 1:23 means twenty-three minutes after one o’clock), and represent time in 12-hour notation	5.6, 5.7, 5.9, Ch. 5 Math Game (Red Time, Blue Time, Ch. 5 Ch. Task, 6.2	Chapter 6 Measurement, 6.2	Time <i>Pathway 1:</i> Reading a Clock <i>Pathway 2:</i> Using Standard Units	– tell and write time to the quarter-hour, using demonstration digital and analogue clocks (e.g., “My clock shows the time recess will start [10:00], and my friend’s clock shows the time recess will end [10:15].”)	– read demonstration digital and analogue clocks, and use them to identify benchmark times (e.g., times for breakfast, lunch, dinner; the start and end of school; bedtime) and to tell and write time to the hour and half-hour in everyday settings – name the months of the year in order, and read the date on a calendar

Measurement: Attributes, Units and Measurement Sense					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
			Time <i>Pathway 2: Using Standard Units</i> <i>Pathway 3: Using Non-Standard Units</i>	– construct tools for measuring time intervals in non-standard units (e.g., a particular bottle of water takes about five seconds to empty)	– estimate, measure, and describe the passage of time, through investigation using nonstandard units (e.g., number of sleeps; number of claps; number of flips of a sand timer)
– estimate, read (i.e., using a thermometer), and record positive temperatures to the nearest degree Celsius (i.e., using a number line; using appropriate notation) – identify benchmarks for freezing, cold, cool, warm, hot, and boiling temperatures as they relate to water and for cold, cool, warm, and hot temperatures as they relate to air (e.g., water freezes at 0°C; the air temperature on a warm day is about 20°C, but water at 20°C feels cool)	5.10	Chapter 6 Measurement, 6.4		– use a standard thermometer to determine whether temperature is rising or falling (e.g., the temperature of water, air) – describe how changes in temperature affect everyday experiences (e.g., the choice of clothing to wear)	– relate temperature to experiences of the seasons (e.g., “In winter, we can skate because it’s cold enough for there to be ice.”)
– estimate, measure, and record the perimeter of two-dimensional shapes, through investigation using standard units	5.5	Chapter 9 Length, Perimeter, and Area, 9.4, 9.5	Length <i>Pathway 1: Length: Standard Units</i>	– estimate, measure, and record the distance around objects, using non-standard units	
– estimate, measure (i.e., using centimetre grid paper, arrays), and record area (e.g., if a row of 10 connecting cubes is approximately the width of a book, skip counting down the cover of the book with the row of cubes [i.e., counting 10, 20, 30, ...] is one way to determine the area of the book cover)	8.2, 8.3, 8.4, Ch. 8 Mental Imagery, Ch. 8 Task	Chapter 9 Length, Perimeter, and Area, 9.7, 9.8	Area <i>Pathway 1: Area: Using Strategies</i> <i>Pathway 2: Area: Using Whole Units</i>	– estimate, measure, and record area, through investigation using a variety of non-standard units (e.g., determine the number of yellow pattern blocks it takes to cover an outlined shape)	– estimate, measure (i.e., by minimizing overlaps and gaps), and describe area, through investigation using non-standard units (e.g., “It took about 15 index cards to cover my desk, with only a little bit of space left over.”)

Measurement: Attributes, Units and Measurement Sense ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– choose benchmarks for a kilogram and a litre to help them perform measurement tasks	11.5, 11.7	Chapter 6 Measurement, 6.10, 6.12	Mass <i>Pathway 1: Mass: Using Grams</i> <i>Pathway 2: Mass: Using Kilograms</i> Capacity <i>Pathway 1: Capacity: Using Litres</i>		
– estimate, measure, and record the mass of objects (e.g., can of apple juice, bag of oranges, bag of sand), using the standard unit of the kilogram or parts of a kilogram (e.g., half, quarter)	11.7, Ch. 11 Task	Chapter 6 Measurement, 6.12, 6.13 with supporting TG note	Mass <i>Pathway 1: Mass: Using Grams</i> <i>Pathway 2: Mass: Using Kilograms</i> <i>Pathway 3: Mass: Using Non-Standard Units</i>	– estimate, measure, and record the mass of an object, using a variety of non-standard units (e.g., “I used the pan balance and found that the stapler has the same mass as my pencil case.”)	– estimate, measure, and describe the mass of an object, through investigation using non-standard units (e.g., “My journal has the same mass as 13 pencils.”)
– estimate, measure, and record the capacity of containers (e.g., juice can, milk bag), using the standard unit of the litre or parts of a litre (e.g., half, quarter)	11.5, 11.6, Ch. 11 Task	Chapter 6 Measurement, 6.10, 6.11 with supporting TG note	Capacity <i>Pathway 1: Capacity: Using Litres</i> <i>Pathway 2: Capacity: Non-Standard Units</i>	– estimate, measure, and record the capacity of an object, using a variety of non-standard units	– estimate, measure, and describe the capacity of an object, through investigation using non-standard units (e.g., “The juice can has the same capacity as 4 pop cans.”)
Measurement: Measurement Relationships					
	5.2, 5.3, 5.4, Ch. 5 Mental Math, Ch. 5 Task	Chapter 9 Length, Perimeter, and Area, 9.2, 9.3	Length <i>Pathway 1: Length: Standard Units</i> <i>Pathway 2: Length: Non-Standard Units</i>		– compare two or three objects using measurable attributes (e.g., length, height, width, area, temperature, mass, capacity), and describe the objects using relative terms
– compare standard units of length (i.e., centimetre, metre, kilometre) (e.g., centimetres are smaller than metres), and select and justify the most appropriate standard unit to measure length					

Measurement: Measurement Relationships ctd.					
Grade 3 Ontario expectations	<i>Nelson Mathematics 3</i>	<i>Math Makes Sense 3</i>	<i>Leaps and Bounds 3/4 Topics</i>	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– compare and order objects on the basis of linear measurements in centimetres and/or metres (e.g., compare a 3 cm object with a 5 cm object; compare a 50 cm object with a 1 m object) in problem-solving contexts	Ch. 5 Getting Started, 5.1, 5.2, 5.3, 5.4, Ch. 5 Curious Math (Comparing Body Lengths), Ch. 5 Task	Chapter 9 Length, Perimeter, and Area, 9.1, 9.2	Length <i>Pathway 1:</i> Length: Standard Units <i>Pathway 2:</i> Length: Non-Standard Units		– compare and order objects by their linear measurements, using the same non-standard unit – use the metre as a benchmark for measuring length, and compare the metre with non-standard units
– compare and order various shapes by area, using congruent shapes (e.g., from a set of pattern blocks or Power Polygons) and grid paper for measuring	8.2, 8.3, 8.4	Chapter 9 Length, Perimeter, and Area, 9.6	Area <i>Pathway 1:</i> Area: Using Strategies <i>Pathway 2:</i> Area: Using Whole Units		
– describe, through investigation using grid paper, the relationship between the size of a unit of area and the number of units needed to cover a surface	8.3, 8.4, 8.5, Ch. 8 Mental Imagery, Ch. 8 Ch. Task	Chapter 9 Length, Perimeter, and Area, 9.7	Area <i>Pathway 1:</i> Area: Using Strategies <i>Pathway 2:</i> Area: Using Whole Units	– describe, through investigation, the relationship between the size of a unit of area and the number of units needed to cover a surface	– describe, through investigation using concrete materials, the relationship between the size of a unit and the number of units needed to measure length
– compare and order a collection of objects, using standard units of mass (i.e., kilogram) and/or capacity (i.e., litre)	11.5, 11.6, Ch. 11 Task	Chapter 6 Measurement, 6.10, 6.11, 6.12, 6.13	Mass <i>Pathway 1:</i> Mass: Using Grams <i>Pathway 2:</i> Mass: Using Kilograms <i>Pathway 3:</i> Mass: Using Non-Standard Units Capacity <i>Pathway 1:</i> Capacity: Using Litres <i>Pathway 2:</i> Capacity: Non-Standard Units	– compare and order a collection of objects by mass and/or capacity, using non-standard units (e.g., “The coffee can holds more sand than the soup can, but the same amount as the small pail.”)	

Measurement: Measurement Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– solve problems involving the relationships between minutes and hours, hours and days, days and weeks, and weeks and years, using a variety of tools (e.g., clocks, calendars, calculators)	5.6, 5.7, 5.9	Chapter 6 Measurement, 6.1, 6.2, 6.3	Time <i>Pathway 1: Reading a Clock</i> <i>Pathway 2: Using Standard Units</i> <i>Pathway 3: Using Non-Standard Units</i>	– determine, through investigation, the relationship between days and weeks and between months and years	
Geometry and Spatial Sense: Geometric Properties					
– use a reference tool (paper corner, pattern blocks, a carpenter’s square) to identify right angles and to describe angles as greater than, equal to or less than a right angle	Ontario Supplement: Ch. 7 Lesson B: Classifying Angles	Chapter 3 Geometry, 3.2			
– identify and compare various polygons (i.e., triangles, quadrilaterals, pentagons, hexagons, heptagons, octagons) and sort them by their geometric properties (i.e., number of sides; side lengths; number of interior angles; number of right angles)	Ch. 7 Getting Started, 7.1, Ch. 7 Curious Math (Making Shapes with Tans), Ch. 7 Mental Imagery, 7.5, Ch. 7 Task	Chapter 3 Geometry, 3.1, 3.3, 3.4	2-D Shapes <i>Pathway 1: Describing 2-D Shapes</i>	– distinguish between the attributes of an object that are geometric properties (e.g., number of sides, number of faces) and the attributes that are not geometric properties (e.g., colour, size, texture), using a variety of tools (e.g., attribute blocks, geometric solids, connecting cubes) – identify and describe various polygons (i.e., triangles, quadrilaterals, pentagons, hexagons, heptagons, octagons) and sort and classify them by their geometric properties (i.e., number of sides or number of vertices), using concrete materials and pictorial representations (e.g., “I put all the figures with five or more vertices in one group, and all the figures with fewer than five vertices in another group.”)	– identify and describe common two dimensional shapes (e.g., circles, triangles, rectangles, squares) and sort and classify them by their attributes (e.g., colour; size; texture; number of sides), using concrete materials and pictorial representations (e.g., “I put all the triangles in one group. Some are long and skinny, and some are short and fat, but they all have three sides.”)

Geometry and Spatial Sense: Geometric Properties ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– compare various angles, using concrete materials and pictorial representations, and describe angles as <i>bigger than, smaller than, or about the same as</i> other angles (e.g. “Two of the angles on the red block are bigger than all the angles on the green pattern block.”)	Ontario Supplement: Ch. 7 Lesson B: Classifying Angles	Chapter 3 Geometry, 3.3, 3.4 with supporting TG note			
– compare and sort prisms and pyramids geometric properties (i.e., number and shape of faces, number of edges, number of vertices), using concrete materials	11.2, 11.3, 11.4, Ch. 11 Math Game (I Spy), Ch. 11 Task	Chapter 3 Geometry, 3.8, 3.9	3-D Shapes <i>Pathway 1: Describing 3-D Shapes</i>	– identify and describe various three-dimensional figures (i.e., cubes, prisms, pyramids) and sort and classify them by their geometric properties (i.e., number and shape of faces), using concrete materials (e.g., “I separated the figures that have square faces from the ones that don’t.”)	– identify and describe common three-dimensional figures (e.g., cubes, cones, cylinders, spheres, rectangular prisms) and sort and classify them by their attributes (e.g., colour; size; texture; number and shape of faces), using concrete materials and pictorial representations (e.g., “I put the cones and the cylinders in the same group because they all have circles on them.”) – describe similarities and differences between an everyday object and a three-dimensional figure (e.g., “A water bottle looks like a cylinder, except the bottle gets thinner at the top.”)
– construct rectangular prisms (e.g., using given paper nets; using Polydrons), and describe geometric properties (i.e., number and shape of faces, number of edges, number of vertices) of the prisms	11.3, Ch. 11 Curious Math	Chapter 3 Geometry, 3.10	3-D Shapes <i>Pathway 1: Describing 3-D Shapes</i> <i>Pathway 2: Building 3-D Shapes</i>	– create models and skeletons of prisms and pyramids, using concrete materials (e.g., cardboard; straws and modelling clay), and describe their geometric properties (i.e., number and shape of faces, number of edges)	– trace and identify the two-dimensional faces of three-dimensional figures, using concrete models (e.g., “I can see squares on the cube.”)

Geometry and Spatial Sense: Geometric Properties ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
				– locate the line of symmetry in a two-dimensional shape (e.g., by paper folding; by using a Mira)	– locate shapes in the environment that have symmetry, and describe the symmetry
Geometry and Spatial Sense: Geometric Relationships					
– solve problems requiring the greatest or least number of two-dimensional shapes (e.g., pattern blocks) needed to compose a larger shape in a variety of ways (e.g., to cover an outline puzzle)	Ch. 11 Getting Started, 11.1, 11.2, 11.3, 11.4, Ch. 11 Math Game (I Spy), Ch. 11 Task, Ch. 13 Mental Imagery	Chapter 9 Length, Perimeter, and Area, 9.6, 9.7	2-D Shapes <i>Pathway 1:</i> Describing 2-D Shapes <i>Pathway 2:</i> Building 2-D Shapes	– compose and describe pictures, designs, and patterns by combining two-dimensional shapes (e.g., “I made a picture of a flower from one hexagon and six equilateral triangles.”) – compose and decompose two-dimensional shapes – cover an outline puzzle with two-dimensional shapes in more than one way	– compose patterns, pictures, and designs, using common two-dimensional shapes – identify and describe shapes within other shapes (e.g., shapes within a geometric design)
– explain the relationships between different types of quadrilaterals (e.g., a square is a rectangle because a square has four sides and four right angles; a rhombus is a parallelogram because opposite sides of a rhombus are parallel)	Ch. 7 Getting Started, 7.1, 7.2, Ch. 7 Task	Chapter 3 Geometry, 3.1, 3.3	2-D Shapes <i>Pathway 1:</i> Describing 2-D Shapes <i>Pathway 2:</i> Building 2-D Shapes		
– identify and describe the two-dimensional shapes that can be found in a three-dimensional figure – describe and name prisms and pyramids by the shape of their base (e.g., rectangular prism, square-based pyramid)	Ch. 11 Getting Started, 11.1, 11.2, 11.3, 11.4, Ch. 11 Math Game (I Spy), Ch. 11 Task, Ch. 13 Mental Imagery	Chapter 3 Geometry, 3.8	2-D Shapes <i>Pathway 1:</i> Describing 2-D Shapes <i>Pathway 2:</i> Building 2-D Shapes 3-D Shapes <i>Pathway 1:</i> Describing 3-D Shapes <i>Pathway 2:</i> Building 3-D Shapes	– build a structure using three-dimensional figures, and describe the two-dimensional shapes and three-dimensional figures in the structure (e.g., “I used a box that looks like a triangular prism to build the roof of my house.”)	– build three-dimensional structures using concrete materials, and describe the two-dimensional shapes the structures contain

Geometry and Spatial Sense: Geometric Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– identify congruent two-dimensional shapes by manipulating and matching concrete materials (e.g., by translating, reflecting, or rotating pattern blocks)	7.6, Ch. 7 Task	Chapter 3 Geometry, 3.5			
Geometry and Spatial Sense: Location and Movement					
– describe movement from one location to another using a grid map (e.g., to get from the swings to the sandbox, move three squares to the right and two squares down)	8.5, Ch. 8 Math Game (Roll to the Star), Ch. 8 Task	Chapter 7 Motion Geometry, 7.1	Movement and Location <i>Pathway 1: Moving on a Grid</i> <i>Pathway 2: Using Positional Language</i>	– describe the relative locations (e.g., beside, two steps to the right of) and the movements of objects on a map (e.g., “The path shows that he walked around the desk, down the aisle, and over to the window.”) – draw simple maps of familiar settings, and describe the relative locations of objects on the maps	– describe the relative locations of objects or people using positional language (e.g., <i>over, under, above, below, in front of, behind, inside, outside, beside, between, along</i>) – describe the relative locations of objects on concrete maps created in the classroom
– identify flips, slides, and turns, through investigation using concrete materials and physical motion, and name flips, slides, and turns as reflections, translations, and rotations (e.g., a slide to the right is a translation; a turn is a rotation)	Ch. 14 Getting Started, 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, Ch. 14 Task	Chapter 7 Motion Geometry, 7.2, 7.4, 7.5			
– complete and describe designs and pictures of images that have a vertical, horizontal, or diagonal line of symmetry	7.3, 7.4, 7.5, Ch. 7 Task	Chapter 7 Motion Geometry, 7.6		– create and describe symmetrical designs using a variety of tools (e.g., pattern blocks, tangrams, paper and pencil)	– create symmetrical designs and pictures, using concrete materials (e.g., pattern blocks, connecting cubes, paper for folding), and describe the relative locations of the parts

Patterning and Algebra: Patterns and Relationships					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– identify, extend, and create a repeating pattern involving two attributes (e.g., size, colour, orientation, number), using a variety of tools (e.g., pattern blocks, attribute blocks, drawings)	Ch. 1 Getting Started, 1.1, 1.2, Ch. 1 Curious Math (Dance Patterns), Ch. 1 Math Game (Changing Attributes), 1.5, 1.6, Ch. 1 Task, 7.6, Ch. 7 Task, Ch. 14 Getting Started	Chapter 10 Patterns in Number and Geometry, 10.5	Patterns <i>Pathway 1: Growing and Shrinking Patterns</i> <i>Pathway 2: Repeating Patterns</i>	– identify and describe, through investigation, growing patterns and shrinking patterns generated by the repeated addition or subtraction of 1's, 2's, 5's, 10's, and 25's on a number line and on a hundreds chart (e.g., the numbers 90, 80, 70, 60, 50, 40, 30, 20, 10 are in a straight line on a hundreds chart)	– identify, describe, and extend, through investigation, geometric repeating patterns involving one attribute (e.g., colour, size, shape, thickness, orientation) – create a repeating pattern involving one attribute (e.g., colour, size, shape, sound)
– identify and describe, through investigation, number patterns involving addition, subtraction, and multiplication, represented on a number line, on a calendar, and on a hundreds chart (e.g., the multiples of 9 appear diagonally in a hundreds chart)	Ch. 1 Mental Math, 1.3, 1.4, 1.6, Ch. 1 Task, 2.3, 4.4, Ch. 9 Getting Started, 9.1, 9.2, 9.3, 9.4, 9.6, 10.2	Chapter 1 Patterning and Place Value, 1.1, 1.2, 1.3	Patterns <i>Pathway 1: Growing and Shrinking Patterns</i> <i>Pathway 2: Repeating Patterns</i>	– identify, describe, and create, through investigation, growing patterns and shrinking patterns involving addition and subtraction, with and without the use of calculators (e.g., $3 + 1 = 4$, $3 + 2 = 5$, $3 + 3 = 6$, ...)	– identify and extend, through investigation, numeric repeating patterns (e.g., 1, 2, 3, 1, 2, 3, 1, 2, 3, ...) – describe numeric repeating patterns in a hundreds chart
– extend repeating, growing, and shrinking number patterns	1.3, 1.4, 1.6, Ch. 1 Task, 2.3, 4.4	Chapter 10 Patterns in Number and Geometry, 10.1, 10.2	Patterns <i>Pathway 1: Growing and Shrinking Patterns</i> <i>Pathway 2: Repeating Patterns</i>	– identify repeating, growing, and shrinking patterns found in real-life contexts (e.g., a geometric pattern on wallpaper, a rhythm pattern in music, a number pattern when counting dimes)	
– create a number pattern involving addition or subtraction, given a pattern represented on a number line or a pattern rule expressed in words	Ch. 1 Mental Math, 1.3, 1.4, 2.3, 4.4, 9.1	Chapter 10 Patterns in Number and Geometry, 10.1	Patterns <i>Pathway 1: Growing and Shrinking Patterns</i> <i>Pathway 2: Repeating Patterns</i>	– create growing or shrinking patterns – create a repeating pattern by combining two attributes (e.g., colour and shape; colour and size)	

Patterning and Algebra: Patterns and Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– represent simple geometric patterns using a number sequence, a number line, or a bar graph	Ch. 14 Getting Started, 14.4, 14.5, 14.6, Ch. 14 Task	Chapter 10 Patterns in Number and Geometry, 10.3	Patterns <i>Pathway 1: Growing and Shrinking Patterns</i> <i>Pathway 2: Repeating Patterns</i>	– represent a given growing or shrinking pattern in a variety of ways (e.g., using pictures, actions, colours, sounds, numbers, letters, number lines, bar graphs)	
– demonstrate, through investigation, an understanding that a pattern results from repeating an action (e.g., clapping, taking a step forward every second), repeating an operation (e.g., addition, subtraction), using a transformation (e.g., slide, flip, turn), or making some other repeated change to an attribute (e.g., colour, orientation).	1.3, 1.4, 1.6, Ch. 1 Mental Math, Ch. 1 Task, 2.3, 4.4, 9.1, Ch. 14 Getting Started, 14.4, 14.5, 14.6, Ch. 14 Task	Chapter 1 Patterning and Place Value, 1.1, 1.2, 1.3, Chapter 10 Patterns in Number and Geometry, 10.1, 10.2, 10.5, 10.6, 10.7, Unit 10 Technology Feature, page 395 with supporting TG note	Patterns <i>Pathway 1: Growing and Shrinking Patterns</i> <i>Pathway 2: Repeating Patterns</i>	– demonstrate, through investigation, an understanding that a pattern results from repeating an operation (e.g., addition, subtraction) or making a repeated change to an attribute (e.g., colour, orientation)	– identify a rule for a repeating pattern (e.g., “We’re lining up boy, girl, boy, girl, boy, girl.”) – represent a given repeating pattern in a variety of ways (e.g., pictures, actions, colours, sounds, numbers, letters)
Patterning and Algebra: Expressions and Equality					
– determine through investigation, the inverse relationship between addition and subtraction (e.g., Since $4 + 5 = 9$ then $9 - 5 = 4$; since $16 - 9 = 7$, then $7 + 9 = 16$)	1.3, Ch. 4 Getting Started, 4.1, 4.3, 6.3, 6.6, 6.7, 6.9	Chapter 2 Patterns in Addition and Subtraction, 2.4			

Patterning and Algebra: Expressions and Equality ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– 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)	4.1, 4.2, 4.3, 6.3, 6.5, 6.6, Ch. 6 Math Game, Ch. 6 Task	Chapter 2 Patterns in Addition and Subtraction, 2.5	Equality <i>Pathway 1: Equality: Using Numbers to 100</i> <i>Pathway 2: Equality: Using Numbers to 20</i>	– determine the missing number in equations involving addition and subtraction to 18, using a variety of tools and strategies (e.g., modelling with concrete materials, using guess and check with and without the aid of a calculator) – 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) – represent, through investigation with concrete materials and pictures, two number expressions that 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 $4 + 6 = 7 + 3$.”)	– create a set in which the number of objects is greater than, less than, or equal to the number of objects in a given set – demonstrate examples of equality, through investigation, using a “balance” model – determine, through investigation using a “balance” model and whole numbers to 10, the number of identical objects that must be added or subtracted to establish equality
– identify, through investigation, the properties of zero and one in multiplication (i.e., any number multiplied by zero equals zero; any number multiplied by 1 equals the original number)	Ontario Supplement: Ch. 9 Lesson A: Multiplying by 0 and 1 and Exploring Mental Math Strategies	Chapter 4 Multiplication and Division, 4.5		– identify, through investigation, the properties of zero in addition and subtraction (i.e., when you add zero to a number, the number does not change; when you subtract zero from a number, the number does not change).	
– identify, through investigation, and use the associative property of addition to facilitate computation with whole numbers (e.g., “I know that $17 + 16$ equals $17 + 3 + 13$. This is easier to add in my head because I get $20 + 13 = 33$.”)	Ch. 4 Mental Math	Chapter 2 Patterns in Addition and Subtraction, 2.7		– 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 $9 + 8 + 1 = 9 + 1 + 8$. Adding becomes easier because that gives $10 + 8 = 18$.”)	

Data Management and Probability: Collection and Organization of Data					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– demonstrate an ability to organize objects into categories, by sorting and classifying objects using two or more attributes simultaneously	Ch. 3 Getting Started, 3.1, Ch. 3 Curious Math (It Takes All Sorts), Ch. 3 Task, 7.1, 7.5, 11.2	Chapter 5 Sorting and Data Management, 5.1, 5.2	Sorting and Organizing Data <i>Pathway 1:</i> Sorting: More Than One Attribute <i>Pathway 2:</i> Sorting: One Attribute	– demonstrate an ability to organize objects into categories, by sorting and classifying objects using two attributes simultaneously (e.g., sort attribute blocks by colour and shape at the same time)	– demonstrate an ability to organize objects into categories by sorting and classifying objects using one attribute (e.g., colour, size), and by describing informal sorting experiences (e.g., helping to put away groceries)
– collect data by conducting a simple survey about themselves, their environment, issues in their school or community, or content from another subject	3.2	Chapter 5 Sorting and Data Management, 5.5, 5.9	Sorting and Organizing Data <i>Pathway 1:</i> Sorting: More Than One Attribute <i>Pathway 2:</i> Sorting: One Attribute Displaying Data <i>Pathway 1:</i> Data: Many-to-One Correspondence <i>Pathway 2:</i> Data: One-to-One Correspondence <i>Pathway 3:</i> Concrete and Picture Graphs	– gather data to answer a question, using a simple survey with a limited number of responses (e.g., What is your favourite season?; How many letters are in your first name?)	– collect and organize primary data (e.g., data collected by the class) that is categorical (i.e., that can be organized into categories based on qualities such as colour or hobby)

Data Management and Probability: Collection and Organization of Data ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– collect and organize categorical or discrete primary data and display the data in charts, tables, and graphs (including vertical and horizontal bar graphs), with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed, using many-to-one correspondence (e.g., in a pictograph, one car sticker represents 3 cars; on a bar graph, one square represents 2 students)	3.1, 3.3, 3.4, Ch. 3 Task, 7.5, Ch. 13 Math Game (Off to the Races)	Chapter 5 Sorting and Data Management, 5.5, 5.6	Sorting and Organizing Data <i>Pathway 1:</i> Sorting: More Than One Attribute <i>Pathway 2:</i> Sorting: One Attribute Displaying Data <i>Pathway 1:</i> Data: Many-to-One Correspondence <i>Pathway 2:</i> Data: One-to-One Correspondence <i>Pathway 3:</i> Concrete and Picture Graphs	– collect and organize primary data (e.g., data collected by the class) that is categorical or discrete (i.e., that can be counted, such as the number of students absent), and display the data using one-to-one correspondence in concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers (e.g., tally charts, diagrams), with appropriate titles and labels and with labels ordered appropriately along horizontal axes, as needed	– display the data using one-to-one correspondence, prepared templates of concrete graphs and pictographs (with titles and labels), and a variety of recording methods (e.g., arranging objects, placing stickers, drawing pictures, making tally marks)
Data Management and Probability: Data Relationships					
– read primary data presented in charts, tables, and graphs (including vertical and horizontal bar graphs), then describe the data using comparative language, and describe the shape of the data (e.g., “Most of the data are at the high end.”; “All of the data values are different.”)	3.2, 3.4, 3.5, 3.6, Ch. 3 Task	Chapter 5 Sorting and Data Management, 5.5, 5.8	Sorting and Organizing Data <i>Pathway 1:</i> Sorting: More Than One Attribute <i>Pathway 2:</i> Sorting: One Attribute Displaying Data <i>Pathway 1:</i> Data: Many-to-One Correspondence <i>Pathway 2:</i> Data: One-to-One Correspondence <i>Pathway 3:</i> Concrete and Picture Graphs	– read primary data presented in concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers (e.g., tally charts, diagrams), and describe the data using mathematical language (e.g., “Our bar graph shows that 4 more students walk to school than take the bus.”)	– read primary data presented in concrete graphs and pictographs, and describe the data using comparative language (e.g., more students chose summer than winter as their single favourite season)

Data Management and Probability: Data Relationships ctd.					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
– interpret and draw conclusions from data presented in charts, tables, and graphs	3.1, 3.2, 3.3, 3.4, 3.5, Ch. 3 Task, 7.5, 9.2, 13.1, 13.3, 13.4	Chapter 5 Sorting and Data Management, 5.3, 5.4	Sorting and Organizing Data <i>Pathway 1: Sorting: More Than One Attribute</i> <i>Pathway 2: Sorting: One Attribute</i> Displaying Data <i>Pathway 1: Data: Many-to-One Correspondence</i> <i>Pathway 2: Data: One-to-One Correspondence</i> <i>Pathway 3: Concrete and Picture Graphs</i>	– pose and answer questions about class generated data in concrete graphs, pictographs, line plots, simple bar graphs, and tally charts (e.g., Which is the least favourite season?) – demonstrate an understanding of data displayed in a graph (e.g., by telling a story, by drawing a picture), by comparing different parts of the data and by making statements about the data as a whole (e.g., “I looked at the graph that shows how many students were absent each month. More students were away in January than in September.”) – distinguish between numbers that represent data values (e.g., “I have 4 people in my family.”) and numbers that represent the frequency of an event (e.g., “There are 10 children in my class who have 4 people in their family.”)	– pose and answer questions about collected data
– demonstrate an understanding of mode (e.g., “The mode is the value that shows up most often on a graph.”), and identify the mode in a set of data.	Ontario Supplement: Ch. 3 Lesson B: Mode	Chapter 5 Sorting and Data Management, 5.3 with supporting TG note			

Data Management and Probability: Probability					
Grade 3 Ontario expectations	Nelson Mathematics 3	Math Makes Sense 3	Leaps and Bounds 3/4 Topics	Grade 2 Ontario expectations	Grade 1 Ontario expectations
<p>– predict the frequency of an outcome in a simple probability experiment or game (e.g., “I predict that an even number will come up 5 times and an odd number will come up 5 times when I roll a number cube 10 times.”), then perform the experiment, and compare the results with the predictions, using mathematical language</p>	<p>Ch. 13 Getting Started, 13.1, 13.3, Ch. 13 Math Game (Off to the Races), 13.4, Ch. 13 Curious Math (Spinning Red), Ch. 13 Task</p>	<p>Chapter 11 Probability, 11.2, 11.3</p>		<p>– describe probability as a measure of the likelihood that an event will occur, using mathematical language (i.e., <i>impossible, unlikely, less likely, equally likely, more likely, certain</i>) (e.g., “If I take a new shoe out of a box without looking, it’s equally likely that I will pick the left shoe or the right shoe.”)</p> <p>– describe the probability that an event will occur (e.g., getting heads when tossing a coin, landing on red when spinning a spinner), through investigation with simple games and probability experiments and using mathematical language (e.g., “I tossed 2 coins at the same time, to see how often I would get 2 heads. I found that getting a head and a tail was more likely than getting 2 heads.”)</p>	<p>– describe the likelihood that everyday events will occur, using mathematical language (i.e., <i>impossible, unlikely, less likely, more likely, certain</i>) (e.g., “It’s unlikely that I will win the contest shown on the cereal box.”)</p>
<p>– demonstrate, through investigation, an understanding of fairness in a game and relate this to the occurrence of equally likely outcomes</p>	<p>1.3, Ontario Supplement: Ch. 13 Lesson A: Fairness in Games, Ch. 13 Math Game</p>	<p>Chapter 11 Probability, 11.5</p>			