



**Correlation to Ontario Curriculum and Grade 7 Classroom Resources**

**Note:** Leaps and Bounds 7/8 is a math intervention resource and therefore does not include new content and concepts being introduced to students for the first time in Grade 8. Leaps and Bounds 7/8 includes content from Grades 5 to 7 that will prepare students who are struggling for work at the Grade 7 or 8 level.

GRADE 7 Core Resources Correlation with Grade 7 Ontario core resources			INTERVENTION Resources and Expectations Correlation between <i>Leaps and Bounds 7/8</i> and prerequisite expectations from Ontario Grades 5 and 6		
Grade 7 Ontario expectations	Nelson Mathematics 7	Math Makes Sense 7	Leaps and Bounds 7/8 Topics	Grade 6 Ontario expectations	Grade 5 Ontario expectations
<b>Number Sense and Numeration: Quantity Relationships</b>					
			<b>Representing Large Whole Numbers</b> <i>Pathway 1:</i> Using Decimals for Large Whole Numbers (optional) <i>Pathway 2:</i> Representing Millions and Billions (optional) <i>Pathway 3:</i> Representing Six-Digit Numbers	– read and print in words whole numbers to one hundred thousand, using meaningful contexts – solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 1 000 000	– represent, compare, and order whole numbers and decimal numbers from 0.01 to 100 000, using a variety of tools – 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 – read and print in words whole numbers to ten thousand, using meaningful contexts – solve problems that arise from real-life situations and that relate to the magnitude of whole numbers up to 100 000
– represent, compare, and order decimals to hundredths and fractions, using a variety of tools	2.5	Unit 4 Skills You'll Need 8.1	<b>Representing and Comparing Decimals</b> <i>Pathway 1:</i> Decimals with Many Places <i>Pathway 2:</i> Comparing Decimals <i>Pathway 3:</i> Representing Decimal Thousandths <i>Pathway 4:</i> Multiplying and Dividing by 10s  <b>Comparing Fractions</b> <i>Pathway 1:</i> Fractions and Mixed Numbers <i>Pathway 2:</i> Proper Fractions <i>Pathway 3:</i> Equivalent Fractions	– represent, compare, and order whole numbers and decimal numbers from 0.001 to 1 000 000, using a variety of tools – 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	– represent, compare, and order whole numbers and decimal numbers from 0.01 to 100 000, using a variety of tools – 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 – round decimal numbers to the nearest tenth, in problems arising from real-life situations

				<ul style="list-style-type: none"> <li>– 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</li> </ul>	<ul style="list-style-type: none"> <li>– 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</li> <li>– demonstrate and explain the concept of equivalent fractions, using concrete materials</li> <li>– demonstrate and explain equivalent representations of a decimal number, using concrete materials and drawings</li> <li>– read and write money amounts to \$1000</li> <li>– count forward by hundredths from any decimal number expressed to two decimal places, using concrete materials and number lines</li> <li>– multiply decimal numbers by 10, 100, 1000, and 10 000, and divide decimal numbers by 10 and 100, using mental strategies</li> <li>– 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</li> </ul>
<ul style="list-style-type: none"> <li>– generate multiples and factors, using a variety of tools and strategies</li> </ul>	1.1, 1.2, Chapter 1 Curious Math, 1.3, 1.4, Chapter 1 Task	1.2	<b>Multiplicative Relationships</b> Pathway 3: Factors and Multiples		
<ul style="list-style-type: none"> <li>– identify and compare integers found in real-life contexts</li> <li>– represent and order integers, using a variety of tools</li> </ul>	6.1, Chapter 6 Math Game, Chapter 6 Task	9.1, 9.2, 9.3	<b>Integers</b> Pathway 3: Representing and Comparing Integers		

Grade 7 Ontario expectations	Nelson Mathematics 7	Math Makes Sense 7	Leaps and Bounds 7/8 Topics	Grade 6 Ontario expectations	Grade 5 Ontario expectations
– select and justify the most appropriate representation of a quantity (i.e., fraction, decimal, percent) for a given context	12.5	Unit 4 Unit 8	<b>Rates, Percents, and Ratios</b> Pathway 2: Using Percents Pathway 3: Using Ratios		– describe multiplicative relationships between quantities by using simple fractions and decimals
– represent perfect squares and square roots using a variety of tools	1.6, 1.8	1.3	<b>Multiplicative Relationships</b> Pathway 2: Prime Numbers and Perfect Squares Pathway 3: Factors and Multiples	– identify composite numbers and prime numbers, and explain the relationship between them (i.e., any composite number can be factored into prime factors)	
– explain the relationship between exponential notation and the measurement of area and volume	1.5, 1.6	1.4			
<b>Number Sense and Numeration: Operational Sense</b>					
			<b>Whole Number Operations</b> Pathway 2: Dividing Whole Numbers Pathway 3: Multiplying Whole Numbers	– use a variety of mental strategies to solve addition, subtraction, multiplication, and division problems involving whole numbers – solve problems involving the multiplication and division of whole numbers (four-digit by two-digit), using a variety of tools and strategies	– solve problems involving the addition, subtraction, and multiplication of whole numbers, using a variety of mental strategies – multiply two-digit whole numbers by two-digit whole numbers, using estimation, student-generated algorithms, and standard algorithms – divide three-digit whole numbers by one-digit whole numbers, using concrete materials, estimation, student-generated algorithms, and standard algorithms
– divide whole numbers by simple fractions and by decimal numbers to hundredths, using concrete materials – use a variety of mental strategies to solve problems involving the addition and subtraction of fractions and decimals – solve problems involving the multiplication and division of decimal numbers to thousandths by one-digit whole numbers, using a	2.8, 2.9 Ontario Supplement TR, Chapter 2, pp 80-94 Chapter 8 Mental Math Ontario Supplement TR, Chapter 9 pp 88-91	4.1, 4.2, 4.3, 4.4, 4.5 4.7, 4.8, 4.9 with supporting TG notes 4.6A (TG lesson)	<b>Decimal Operations</b> Pathway 1: Dividing Whole Numbers by Decimals Pathway 2: Dividing Decimals by Whole Numbers Pathway 3: Multiplying with Decimals Pathway 4: Adding and Subtracting Decimals  <b>Relating Situations to Operations</b> Pathway 1: Recognizing Division Situations	– multiply and divide decimal numbers to tenths by whole numbers, using concrete materials, estimation, algorithms, and calculators – multiply whole numbers by 0.1, 0.01, and 0.001 using mental strategies – multiply and divide decimal numbers by 10, 100, 1000, and 10 000 using mental strategies – add and subtract decimal numbers to thousandths, using concrete materials, estimation, algorithms, and calculators	– add and subtract decimal numbers to hundredths, including money amounts, using concrete materials, estimation, and algorithms

variety of tools and strategies			<b>Fraction Operations</b> <i>Pathway 1: Repeated Addition of Fractions</i> <i>Pathway 2: Adding and Subtracting Mixed Numbers</i> <i>Pathway 3: Subtracting Fractions</i> <i>Pathway 4: Adding Fractions</i>	– use estimation when solving problems involving the addition and subtraction of whole numbers and decimals, to help judge the reasonableness of a solution	
– solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools and strategies – use estimation when solving problems involving operations with whole numbers, decimals, and percents, to help judge the reasonableness of a solution	1.1, 1.2, 1.3, 1.5, 1.6, 1.7, Chapter 1 Task 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, Chapter 2 Task, Chapter 2 Math in Action Chapter 5 Mental Math	1.1 4.7, 4.8 8.2	<b>Whole Number Operations</b> <i>Pathway 2: Dividing Whole Numbers</i> <i>Pathway 3: Multiplying Whole Numbers</i>  <b>Decimal Operations</b> <i>Pathway 1: Dividing Whole Numbers by Decimals</i> <i>Pathway 2: Dividing Decimals by Whole Numbers</i> <i>Pathway 3: Multiplying with Decimals</i>  <b>Relating Situations to Operations</b> <i>Pathway 1: Recognizing Division Situations</i> <i>Pathway 2: Recognizing Multiplication Situations</i> <i>Pathway 3: Recognizing Subtraction Situations</i>	– use estimation when solving problems involving the addition and subtraction of whole numbers and decimals, to help judge the reasonableness of a solution	– use estimation when solving problems involving the addition, subtraction, multiplication, and division of whole numbers, to help judge the reasonableness of a solution
– evaluate expressions that involve whole numbers and decimals, including expressions that contain brackets, using order of operations	1.7, Chapter 1 Task	4.9, Skills You’ll Need Unit 10	<b>Whole Number Operations</b> <i>Pathway 1: Order of Operations</i>	– 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	
– add and subtract fractions with simple like and unlike denominators, using a variety of tools and algorithms	9.1, 9.2, 9.4, 9.5, 9.6, Chapter 9 Curious Math, 9.8, Chapter 9 Math Game, Chapter 9 Task	4.2, 4.3, 4.4, 4.5	<b>Fraction Operations</b> <i>Pathway 2: Adding and Subtracting Mixed Numbers</i> <i>Pathway 3: Subtracting Fractions</i> <i>Pathway 4: Adding Fractions</i>		

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– demonstrate, using concrete materials, the relationship between the repeated addition of fractions and the multiplication of that fraction by a whole number	9.3, Chapter 9 Task	4.6	<b>Fraction Operations</b> <i>Pathway 1: Repeated Addition of Fractions</i>		
– add and subtract integers, using a variety of tools	6.2, 6.3, 6.4, 6.5, Chapter 6 Math Game, Chapter 6 Curious Math, 6.6, 6.7, 6.8, Chapter 6 Task	9.4, 9.5, 9.6, 9.7	<b>Integers</b> <i>Pathway 1: Subtracting Integers</i> <i>Pathway 2: Adding Integers</i>		
<b>Number Sense and Numeration: Proportional Relationships</b>					
– determine, through investigation, the relationships among fractions, decimals, percents, and ratios – solve problems that involve determining whole number percents, using a variety of tools	2.2, 2.5, 2.6, 2.7, 2.8, Chapter 2 Math Game, Chapter 2 Task, Chapter 2 Math in Action 12.1, 12.2, 12.5, Chapter 12 Mental Math	8.1, 8.2, 8.3, 8.5	<b>Rates, Percents, and Ratios</b> <i>Pathway 2: Using Percents</i> <i>Pathway 3: Using Ratios</i>	– estimate quantities using benchmarks of 10%, 25%, 50%, 75%, and 100% – represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation – 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	– describe multiplicative relationships between quantities by using simple fractions and decimals
– demonstrate an understanding of rate as a comparison, or ratio, of two measurements with different units	2.3, 2.4, 2.7, 2.8, Chapter 2 Math In Action	2.5	<b>Rates, Percents, and Ratios</b> <i>Pathway 1: Using Rates</i> <i>Pathway 3: Using Ratios</i>	– represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation – represent relationships using unit rates	– demonstrate an understanding of simple multiplicative relationships involving whole-number rates, through investigation using concrete materials and drawings
– solve problems involving the calculation of unit rates	2.3, 2.4, 2.8	2.3, 2.4	<b>Rates, Percents, and Ratios</b> <i>Pathway 1: Using Rates</i>	– represent relationships using unit rates	– demonstrate an understanding of simple multiplicative relationships involving whole-number rates, through investigation using concrete materials and drawings

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<b>Measurement: Attributes, Units, and Measurement Sense</b>					
– research and report on real-life applications of area measurements	5.1, 5.2, 5.3, 5.4, 5.6, 5.7, Chapter 5 Task	Unit 6 Problem	<b>Area and Perimeter</b> <i>Pathway 3: Area of Composite Shapes</i> <i>Pathway 4: Area of Parallelograms and Triangles</i> <i>Pathway 5: Area and Perimeter of Rectangles</i>	– estimate, measure, and record length, area, mass, capacity, and volume, using the metric measurement system	– estimate and measure the perimeter and area of regular and irregular polygons, using a variety of tools and strategies
					– estimate, measure (i.e., using an analogue clock), and represent time intervals to the nearest second – 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 – solve problems involving the relationship between a 12-hour clock and a 24-hour clock
					– measure and record temperatures to determine and represent temperature changes over time
<b>Measurement Relationships</b>					
– sketch different polygonal prisms that share the same volume	11.2, 11.3, 11.5	3.6 6.4A (TG lesson)	<b>Volume and Surface Area</b> <i>Pathway 3: Volume of Rectangular Prisms</i>		
– solve problems that require conversion between metric units of measure	5.2, 5.4, Chapter 5 Mental Math, 5.6	Unit 2 Skills You’ll Need, 2.4	<b>Metric Units</b> <i>Pathway 1: Renaming Units</i>	– solve problems requiring conversion from larger to smaller metric units	– solve problems requiring conversion from metres to centimetres and from kilometres to metres
– solve problems that require conversion between metric units of area (i.e., square centimetres, square metres)	Ontario Supplement TR, Chapter 5, pp 69-72	6.4B (TG lesson)	<b>Metric Units</b> <i>Pathway 1: Renaming Units</i> <i>Pathway 2: Selecting a Unit</i>	– 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 – 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	

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<ul style="list-style-type: none"> <li>– determine, through investigation using a variety of tools and strategies, the relationship for calculating the area of a trapezoid, and generalize to develop the formula (i.e., <math>Area = (sum\ of\ lengths\ of\ parallel\ sides \times height) \div 2</math>)</li> <li>– solve problems involving the estimation and calculation of the area of a trapezoid</li> <li>– estimate and calculate the area of composite two-dimensional shapes by decomposing into shapes with known area relationships</li> </ul>	5.1, Chapter 5 Curious Math, 5.4, 5.5, 5.6, 5.7, Chapter 5 Task	6.1, 6.3 with supporting TG note, 6.4	<b>Area and Perimeter</b> <i>Pathway 3: Area of Composite Shapes</i> <i>Pathway 4: Area of Parallelograms and Triangles</i> <i>Pathway 5: Area and Perimeter of Rectangles</i>	<ul style="list-style-type: none"> <li>– 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</li> <li>– develop the formulas for the area of a parallelogram (i.e., <math>Area\ of\ parallelogram = base \times height</math>) and the area of a triangle [i.e., <math>Area\ of\ triangle = (base \times height) \div 2</math>], using the area relationships among rectangles, parallelograms, and triangles</li> <li>– solve problems involving the estimation and calculation of the areas of triangles and the areas of parallelograms</li> <li>– construct a rectangle, a square, a triangle, and a parallelogram, using a variety of tools, given the area and/or perimeter</li> </ul>	<ul style="list-style-type: none"> <li>– create, through investigation using a variety of tools and strategies, two-dimensional shapes with the same perimeter or the same area</li> <li>– 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., <math>Area = length \times width</math>; <math>Perimeter = (2 \times length) + (2 \times width)</math>]</li> <li>– solve problems requiring the estimation and calculation of perimeters and areas of rectangles</li> </ul>
			See <i>Leaps and Bounds 5/6</i>		<ul style="list-style-type: none"> <li>– 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</li> </ul>
<ul style="list-style-type: none"> <li>– determine, through investigation using a variety of tools and strategies, the relationship between the height, the area of the base, and the volume of right prisms with simple polygonal bases, and generalize to develop the formula (i.e., <math>Volume = area\ of\ base \times height</math>)</li> </ul>	11.2, 11.3, 11.4, 11.5	6.4A (TG lesson)	<b>Volume and Surface Area</b> <i>Pathway 1: Volume of Prisms: Using a Formula</i> <i>Pathway 3: Volume of Rectangular Prisms</i>	<ul style="list-style-type: none"> <li>– estimate, measure, and record length, area, mass, capacity, and volume, using the metric measurement system</li> <li>– 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., <math>Volume = area\ of\ base \times height</math>)</li> <li>– solve problems involving the estimation and calculation of the surface area and volume of triangular and rectangular prisms</li> </ul>	<ul style="list-style-type: none"> <li>– determine, through investigation using stacked congruent rectangular layers of concrete materials, the relationship between the height, the area of the base, and the volume of a rectangular prism, and generalize to develop the formula (i.e., <math>Volume = area\ of\ base \times height</math>)</li> </ul>

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– determine, through investigation using a variety of tools, the surface area of right prisms	11.1, 11.3, 11.5, Ontario Supplement TR, Chapter 11, pp 64-66	6.4B (TG lesson)	<b>Volume and Surface Area</b> <i>Pathway 2: Surface Area of Prisms</i>	– determine, through investigation using a variety of tools and strategies, the surface area of rectangular and triangular prisms – solve problems involving the estimation and calculation of the surface area and volume of triangular and rectangular prisms	
– solve problems that involve the surface area and volume of right prisms and that require conversion between metric measures of capacity and volume (i.e., millilitres and cubic centimetres)	11.1, 11.2, 11.3, 11.4, Chapter 11 Math Game, 11.5, Chapter 11 Curious Math, Ch. 11 Task Ontario Supplement TR, Chapter 11, pp 65-69	3.5, 3.6 6.4A (TG lesson), 6.4B (TG lesson)	<b>Volume and Surface Area</b> <i>Pathway 1: Volume of Prisms: Using a Formula</i> <i>Pathway 2: Surface Area of Prisms</i> <i>Pathway 3: Volume of Rectangular Prisms</i>	– 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., $Volume = area\ of\ base \times height$ ) – determine, through investigation using a variety of tools and strategies, the surface area of rectangular and triangular prisms – solve problems involving the estimation and calculation of the surface area and volume of triangular and rectangular prisms	– 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., $Volume = area\ of\ base \times height$ )
			See <i>Leaps and Bounds 5/6</i>		– select and justify the most appropriate standard unit to measure mass
<b>Geometry and Spatial Sense: Geometric Properties</b>					
– construct related lines (i.e., parallel; perpendicular; intersecting at 30°, 45°, and 60°), using angle properties and a variety of tools and strategies	Ontario Supplement TR, Chapter 7, pp 88-90	7.1A (TG Technology feature)	<b>Angles</b> <i>Pathway 2: Drawing Angles</i> <i>Pathway 3: Measuring Angles</i>	– measure and construct angles up to 180° using a protractor, and classify them as acute, right, obtuse, or straight angles	– measure and construct angles up to 90°, using a protractor – identify and classify acute, right, obtuse, and straight angles
– sort and classify triangles and quadrilaterals by geometric properties related to symmetry, angles, and sides, through investigation using a variety of tools and strategies	7.5	Unit 3 Skills You’ll Need 7.1, 7.6A (TG lesson)	<b>2-D Shapes</b> <i>Pathway 1: Similar Shapes</i> <i>Pathway 2: Congruent Shapes</i> <i>Pathway 3: Sorting and Classifying Polygons</i>	– sort and classify quadrilaterals by geometric properties related to symmetry, angles, and sides, through investigation using a variety of tools and strategies – sort polygons according to the number of lines of symmetry and the order of rotational symmetry, through investigation using a variety of tools	– distinguish among polygons, regular polygons, and other two-dimensional shapes – identify triangles (i.e., acute, right, obtuse, scalene, isosceles, equilateral), and classify them according to angle and side properties
– construct angle bisectors and perpendicular bisectors, using a variety of tools and strategies, and represent equal angles and equal lengths using math notation	Ontario Supplement TR, Chapter 7, p. 87	7.1B (TG Technology feature)	<b>Geometric Drawings</b> <i>Pathway 1: Bisecting Angles and Line Segments</i> <i>Pathway 2: Drawing Lines and Polygons</i>	– construct polygons using a variety of tools, given angle and side measurements	– construct triangles, using a variety of tools, given acute or right angles and side measurements – measure and construct angles up to 90°, using a protractor



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– investigate, using concrete materials, the angles between the faces of a prism, and identify right prisms	Ontario Supplement TR, Chapter 10, p. 76	3.5 with supporting TG note 6.4A (TG lesson)			– distinguish among prisms, right prisms, pyramids, and other three-dimensional figures
<b>Geometry and Spatial Sense: Geometric Relationships</b>					
– identify, through investigation, the minimum side and angle information (i.e., side-side-side; side-angle-side; angle-side-angle) needed to describe a unique triangle – determine, through investigation using a variety of tools, relationships among area, perimeter, corresponding side lengths, and corresponding angles of congruent shapes	7.5	7.2 with supporting TG note	<b>2-D Shapes</b> <i>Pathway 2: Congruent Shapes</i>		
– demonstrate an understanding that enlarging or reducing two-dimensional shapes creates similar shapes – distinguish between and compare similar shapes and congruent shapes, using a variety of tools and strategies	2.1 7.5, 7.7, Chapter 7 Task	Cross Strand Investigation, page 112, 7.2, 7.3A (TG lesson)	<b>2-D Shapes</b> <i>Pathway 1: Similar Shapes</i>		
			<b>3-D Shapes</b> <i>Pathway 1: Using Isometric Drawings</i> <i>Pathway 2: Using Different Views</i> <i>Pathway 3: Using Nets</i>	– build three-dimensional models using connecting cubes, given isometric sketches or different views (i.e., top, side, front) of the structure – sketch, using a variety of tools, isometric perspectives and different views (i.e., top, side, front) of three-dimensional figures built with interlocking cubes	– distinguish among prisms, right prisms, pyramids, and other three-dimensional figures – identify prisms and pyramids from their nets – construct nets of prisms and pyramids, using a variety of tools

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<b>Geometry and Spatial Sense: Location and Movement</b>					
– plot points using all four quadrants of the Cartesian coordinate plane	7.1	9.7A (TG lesson)	<b>Location</b> <i>Pathway 1:</i> Plotting Points in 4 Quadrants <i>Pathway 2:</i> Plotting Points on a Grid  See also <i>Leaps and Bounds 5/6</i>	– explain how a coordinate system represents location, and plot points in the first quadrant of a Cartesian coordinate plane	– locate an object using the cardinal directions (i.e., north, south, east, west) and a coordinate system – 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)
– identify, perform, and describe dilations (i.e., enlargements and reductions), through investigation, using a variety of tools – create and analyse designs involving translations, reflections, dilatations, and/or simple rotations of two-dimensional shapes, using a variety of tools and strategies – determine, through investigation using a variety of tools, polygons or combinations of polygons that tile a plane, and describe the transformation(s) involved	2.1 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, Chapter 7 Task, Chapter 7 Math in Action 10.1	7.3B (TG Technology feature) Unit 7 Problem, 7.3, 7.4, 7.5, Technology feature, page 274	<b>Transformations</b> <i>Pathway 1:</i> Using Transformations in Design <i>Pathway 2:</i> Performing Dilatations <i>Pathway 3:</i> Combining Transformations <i>Pathway 4:</i> Performing Single Transformations	– identify, perform, and describe, through investigation using a variety of tools, rotations of 180° and clockwise and counterclockwise rotations of 90°, with the centre of rotation inside or outside the shape – create and analyse designs made by reflecting, translating, and/or rotating a shape, or shapes, by 90° or 180° – extend and create repeating patterns that result from rotations, through investigation using a variety of tools	– identify, perform, and describe translations, using a variety of tools – create and analyse designs by translating and/or reflecting a shape, or shapes, using a variety of tools – extend and create repeating patterns that result from translations, through investigation using a variety of tools
<b>Patterning and Algebra: Patterns and Relationships</b>					
– represent linear growing patterns, using a variety of tools and strategies – make predictions about linear growing patterns, through investigation with concrete materials – develop and represent the general term of a linear growing pattern, using algebraic expressions involving one operation	1.8 4.1, Chapter 4 Math Game, 4.2, Chapter 4 Mental Imagery, 4.3, 4.4, 4.5, Chapter 4 Curious Math, Chapter 4 Task, Chapter 4 Math in Action 8.1, 8.2, 8.3, 8.4, 8.5, Chapter 8 Curious Math,	1.5, Unit 1 Problem 10.1 with supporting TG note, 10.2	<b>Patterns</b> <i>Pathway 1:</i> Linear Relations <i>Pathway 2:</i> Representing Patterns <i>Pathway 3:</i> Exploring Simple Patterns	– identify geometric patterns, through investigation using concrete materials or drawings, and represent them numerically – 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	– create, identify, and extend numeric and geometric patterns, using a variety of tools – build a model to represent a number pattern presented in a table of values that shows the term number and the term – 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

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<ul style="list-style-type: none"> <li>– compare pattern rules that generate a pattern by adding or subtracting a constant, or multiplying or dividing by a constant, to get the next term with pattern rules that use the term number to describe the general term</li> </ul>	Chapter 8 Task			<ul style="list-style-type: none"> <li>– 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</li> <li>– 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</li> <li>– 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</li> </ul>	<ul style="list-style-type: none"> <li>either the sequence or the pattern rule in words</li> <li>– make predictions related to growing and shrinking geometric and numeric patterns</li> </ul>
<b>Patterning and Algebra: Variables, Expressions, and Equations</b>					
<ul style="list-style-type: none"> <li>– model real-life relationships involving constant rates where the initial condition starts at 0, through investigation using tables of values and graphs</li> <li>– model real-life relationships involving constant rates, using algebraic equations with variables to represent the changing quantities in the relationship</li> <li>– translate phrases describing simple mathematical relationships into algebraic expressions, using concrete materials</li> </ul>	4.2, 4.3, 4.4, 4.5, Chapter 4 Task 8.1, 8.2, 8.3, 8.4, 8.5, Chapter 8 Task, Chapter 8 Math in Action	2.5 10.2, 10.3, 10.4	<b>Algebra</b> <i>Pathway 1: Solving Problems Using Equations</i> <i>Pathway 2: Solving Simple Equations</i> <i>Pathway 3: Using Variables</i>	<ul style="list-style-type: none"> <li>– identify, through investigation, the quantities in an equation that vary and those that remain constant</li> <li>– demonstrate an understanding of different ways in which variables are used</li> </ul>	<ul style="list-style-type: none"> <li>– demonstrate, through investigation, an understanding of variables as changing quantities, given equations with letters or other symbols that describe relationships involving simple rates</li> <li>– demonstrate, through investigation, an understanding of variables as unknown quantities represented by a letter or other symbol</li> </ul>
<ul style="list-style-type: none"> <li>– evaluate algebraic expressions by substituting natural numbers for the variables</li> </ul>	8.3, Chapter 8 Math Game, Chapter 8 Curious Math	10.4	<b>Algebra</b> <i>Pathway 1: Solving Problems Using Equations</i> <i>Pathway 2: Solving Simple Equations</i> <i>Pathway 3: Using Variables</i>	<ul style="list-style-type: none"> <li>– solve problems that use two or three symbols or letters as variables to represent different unknown quantities</li> <li>– determine the solution to a simple equation with one variable, through investigation using a variety of tools and strategies</li> </ul>	<ul style="list-style-type: none"> <li>– determine the missing number in equations involving addition, subtraction, multiplication, or division and one- or two-digit numbers, using a variety of tools and strategies</li> </ul>

<b>Grade 7 Ontario expectations</b>	<b>Nelson Mathematics 7</b>	<b>Math Makes Sense 7</b>	<b>Leaps and Bounds 7/8 Topics</b>	<b>Grade 6 Ontario expectations</b>	<b>Grade 5 Ontario expectations</b>
– make connections between evaluating algebraic expressions and determining the term in a pattern using the general term	4.3 8.2	10.3, 10.4 with supporting TG notes	<b>Patterns</b> <i>Pathway 1: Linear Relations</i> <i>Pathway 2: Representing Patterns</i>	– 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	
– solve linear equations of the form $ax = c$ or $c = ax$ and $ax + b = c$ or variations such as $b + ax = c$ and $c = bx + a$ (where $a$ , $b$ , and $c$ are natural numbers) by modelling with concrete materials, by inspection, or by guess and check, with and without the aid of a calculator	8.4, 8.5, 8.6, Chapter 8 Math Game, Chapter 8 Task, Chapter 8 Math in Action	10.5, 10.6	<b>Algebra</b> <i>Pathway 1: Solving Problems Using Equations</i> <i>Pathway 2: Solving Simple Equations</i>	– solve problems that use two or three symbols or letters as variables to represent different unknown quantities – determine the solution to a simple equation with one variable, through investigation using a variety of tools and strategies	– 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
<b>Data Management and Probability: Collection and Organization of Data</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 – collect and organize categorical, discrete, or continuous primary data and secondary data and display the data in charts, tables, and graphs (including relative frequency tables and circle graphs) that have appropriate titles, labels and scales that suit the range and distribution of the data, using a variety of tools	3.1, 3.3, 3.4, 3.5, Chapter 3 Curious Math, 3.7, Chapter 3 Task 6.2 12.1, 12.5, Chapter 12 Task	5.1, 5.2, 5.3, Technology features in Unit 5 Cross Strand Investigations , pages 286 and 432 8.4	<b>Displaying Data</b> <i>Pathway 1: Using Circle Graphs and Line Graphs</i> <i>Pathway 2: Bias and Sampling</i> <i>Pathway 3: Interpreting Graphs</i>	– 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 – 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	– 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 – 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) – 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

Grade 7 Ontario expectations	Nelson Mathematics 7	Math Makes Sense 7	Leaps and Bounds 7/8 Topics	Grade 6 Ontario expectations	Grade 5 Ontario expectations
– 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)	3.4, 3.4, 3.7, Chapter 3 Task	Unit 5 Technology Feature, page 193	<b>Displaying Data</b> <i>Pathway 1: Using Circle Graphs and Line Graphs</i> <i>Pathway 3: Interpreting Graphs</i>	– 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)	
– distinguish between a census and a sample from a population – identify bias in data collection methods	3.2	5.1 with supporting TG note	<b>Displaying Data</b> <i>Pathway 1: Using Circle Graphs and Line Graphs</i> <i>Pathway 2: Bias and Sampling</i>	– 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	– demonstrate an understanding that sets of data can be samples of larger populations – describe, through investigation, how a set of data is collected and explain whether the collection method is appropriate
<b>Data Management and Probability: Data Relationships</b>					
– read, interpret, and draw conclusions from primary data and from secondary data presented in charts, tables, and graphs (including relative frequency tables and circle graphs)	3.1, 3.3, 3.4, 3.5, 3.6, 3.7, Chapter 3 Task 6.2 12.1, 12.5, Chapter 12 Task	5.1, 5.2, 5.3, 5.5, Unit 5 Technology Features, pages 172, 185, and 193, Cross Strand Investigations, pages 286 and 432 8.4	<b>Displaying Data</b> <i>Pathway 1: Using Circle Graphs and Line Graphs</i> <i>Pathway 2: Bias and Sampling</i> <i>Pathway 3: Interpreting Graphs</i>	– read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including continuous line graphs)	– read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including broken-line graphs)
– identify, through investigation, graphs that present data in misleading ways	Ontario Supplement TR Chapter 3, p. 88	5.6	<b>Displaying Data</b> <i>Pathway 1: Using Circle Graphs and Line Graphs</i> <i>Pathway 2: Bias and Sampling</i> <i>Pathway 3: Interpreting Graphs</i>	– explain how different scales used on graphs can influence conclusions drawn from the data	– compare similarities and differences between two related sets of data, using a variety of strategies
– determine, through investigation, the effect on a measure of central tendency (i.e., mean, median, and mode) of adding or removing a value or values	3.6, Chapter 3 Math Game	5.5 with supporting BLM	<b>Summarizing Data</b> <i>Pathway 1: Effects of Changing Data</i> <i>Pathway 2: Using Mean, Median, and Mode</i> <i>Pathway 3: Calculating the Mean</i>	– demonstrate an understanding of mean, and use the mean to compare two sets of related data, with and without the use of technology	– 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

Grade 7 Ontario expectations	Nelson Mathematics 7	Math Makes Sense 7	Leaps and Bounds 7/8 Topics	Grade 6 Ontario expectations	Grade 5 Ontario expectations
<ul style="list-style-type: none"> <li>– identify and describe trends, based on the distribution of the data presented in tables and graphs, using informal language</li> <li>– make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs</li> </ul>	3.1, 3.3, 3.4, 3.5, 3.6, 3.7, Chapter 3 Task 12.1, 12.3, 12.5, Chapter 12 Task	5.2, 5.3, Unit 5 Technology Feature, page 185, 5.4	<b>Displaying Data</b> <i>Pathway 1: Using Circle Graphs and Line Graphs</i> <i>Pathway 2: Bias and Sampling</i> <i>Pathway 3: Interpreting Graphs</i>	<ul style="list-style-type: none"> <li>– read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including continuous line graphs)</li> <li>– compare, through investigation, different graphical representations of the same data</li> <li>– demonstrate, through investigation, an understanding of how data from charts, tables, and graphs can be used to make inferences and convincing arguments</li> </ul>	<ul style="list-style-type: none"> <li>– read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including broken-line graphs)</li> </ul>
<b>Data Management and Probability: Probability</b>					
<ul style="list-style-type: none"> <li>– research and report on real-world applications of probabilities expressed in fraction, decimal, and percent form</li> <li>– make predictions about a population when given a probability</li> <li>– represent in a variety of ways all the possible outcomes of a probability experiment involving two independent events (i.e., one event does not affect the other event), and determine the theoretical probability of a specific outcome involving two independent events</li> <li>– perform a simple probability experiment involving two independent events, and compare the experimental probability with the theoretical probability of a specific outcome</li> </ul>	6.2 12.1, 12.2, Chapter 12 Math Game, Chapter 12 Curious Math, 12.3, 12.4, 12.5, Chapter 12 Task	11.1, 11.2, 11.3 with supporting TG note, 11.4	<b>Probability</b> <i>Pathway 1: Probability: Independent Events</i> <i>Pathway 2: Theoretical Probability</i> <i>Pathway 3: Experimental Probability</i>	<ul style="list-style-type: none"> <li>– 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</li> <li>– 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)</li> <li>– predict the frequency of an outcome of a simple probability experiment or game, by calculating and using the theoretical probability of that outcome</li> </ul>	<ul style="list-style-type: none"> <li>– determine and represent all the possible outcomes in a simple probability experiment</li> <li>– represent, using a common fraction, the probability that an event will occur in simple games and probability experiments</li> <li>– pose and solve simple probability problems, and solve them by conducting probability experiments and selecting appropriate methods of recording the results</li> </ul>