Leaps AND Bounds

TOWARD Math Understanding

Correlation to Ontario Curriculum and Grade 8 Resources

Leaps and Bounds 7/8 *is a math intervention resource.*

GRADE 8 Core Resources Correlation with Grade 8 core resources				INTERVENTION Resources and Expectations Correlation between *Leaps and Bounds 7/8* and prerequisite expectations from Ontario Grades 5 to 7			
Number: Rational and Irrational Numbers				**Number: Rational Numbers**		**Number: Whole Numbers**	
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**	
B1.1 represent and compare very large and very small numbers, including through the use of scientific notation, and describe various ways they are used in everyday life	1.4, 1.5, 1.9, Chapter 1 Task expectation partially addressed	2.2	**Representing Large Whole Numbers** *Pathway 1:* Using Decimals for Large Whole Numbers *Pathway 2:* Representing Millions and Billions *Pathway 3:* Representing Six-Digit Numbers	B1.1 represent and compare whole numbers up to and including one billion, including in expanded form using powers of ten, and describe various ways they are used in everyday life	B1.1 read and represent whole numbers up to and including one million, using appropriate tools and strategies, and describe various ways they are used in everyday life	B1.1 read, represent, compose, and decompose whole numbers up to and including 100 000, using appropriate tools and strategies, and describe various ways they are used in everyday life	
B1.2 describe, compare, and order numbers in the real number system (rational and irrational), separately and in combination, more in various contexts	1.5, Chapter 1 Task, 2.1, Chapter 2 Curious Math (Repeating Decimal Patterns), 2.6, Chapter 2 Task, Chapter 6 Getting Started, Chapter 9 Mental Imagery (Comparing Negative Rationals)	1.2	**Representing and Comparing Decimals** *Pathway 1:* Decimals with Many Places *Pathway 2:* Comparing Decimals *Pathway 3:* Representing Decimal Thousandths *Pathway 4:* Multiplying and Dividing by 10 **Comparing Fractions** *Pathway 1:* Fractions and Mixed Numbers	B1.3 read, represent, compare, and order rational numbers, including positive and negative fractions and decimal numbers to thousandths, in various contexts	B1.2 read and represent integers, using a variety of tools and strategies, including horizontal and vertical number lines B1.3 compare and order integers, decimal numbers, and fractions, separately and in combination, in various contexts	B1.2 compare and order whole numbers up to and including 100 000, in various contexts	

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			Pathway 2: Proper Fractions Pathway 3: Equivalent Fractions **Integers** Pathway 3: Representing and Comparing Integers			
expectation partially addressed						
B1.3 estimate and calculate square roots, in various contexts	Chapter 1 Curious Math (Subtracting to Calculate Square Roots), 1.6, 1.7, Chapter 1 Task	1.1	**Multiplicative Situations** Pathway 2: Prime Numbers and Perfect Squares Pathway 3: Factors and Multiples	B1.2 identify and represent perfect squares, and determine their square roots, in various contexts		

Number: Fractions, Decimals, and Percents

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
B1.4 use fractions, decimal numbers, and percents, including percents of than 100% or less than 1%, interchangeably and flexibly to solve a variety of problems	Chapter 2 Getting Started, 2.1, Chapter 2 Curious Math (Repeating Decimal Patterns), Chapter 2 Math Game (Equivalent Concentration), 2.4, 2.6, 2.7, 2.8, Chapter 2 Mental Math (Simplifying Percents and Fractions), 2.9, Chapter 2 Task, Chapter 5 Mental Imagery (Determining	7.2	**Representing and Comparing Decimals** Pathway 3: Representing Decimal Thousandths **Rates, Percents, and Ratios** Pathway 2: Using Percents	B1.4 use equivalent fractions to simplify fractions, when appropriate, in various contexts B1.5 generate fractions and decimal numbers between any two quantit ies B1.6 round decimal numbers to the nearest tenth, hundredth, or whole number, as applicable, in various contexts B1.7 convert between fractions, decimal numbers, and	B1.4 read, represent, compare, and order decimal numbers up to thousandths, in various contexts B1.5 round decimal numbers, both terminating and repeating, to the nearest tenth, hundredth, or whole number, as applicable, in various contexts B1.6 describe relationships and show equivalences among fractions and decimal numbers up to thousandths, using	B1.3 represent equivalent fractions from halves to twelfths, including improper fractions and mixed numbers, using appropriate tools, in various contexts B1.4 compare and order fractions from halves to twelfths, including improper fractions and mixed numbers, in various contexts B1.5 read, represent, compare, and order decimal numbers up to hundredths, in various contexts

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
	the Regular Price), Chapter 6 Mental Math (Using Fractions to Solve Percent Problems), Mental Math (Estimating Percents), 9.9 expectation partially addressed			percents, in various contexts	appropriate tools and drawings, in various contexts	B1.6 round decimal numbers to the nearest tenth, in various contexts B1.7 describe relationships and show equivalences among fractions, decimal numbers up to hundredths, and whole number percents, using appropriate tools and drawings, in various contexts

Number: Properties and Relationships

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
B2.1 use the properties and order of operations, and the relationships between operations, to solve problems involving rational numbers, ratios, rates, and percents, including those requiring multiple steps or multiple operations	Chapter 1 Mental Math (Multiplying and Dividing by Powers of 10), Chapter 1 Curious Math (Subtracting to Calculate Square Roots), 1.8, 1.9, Chapter 2 Getting Started, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, Chapter 2 Task, Chapter 3 Mental Math (Calculating a Fraction of a Whole	4.4	**Whole Number Operations** *Pathway 1:* Order of Operations *Pathway 2:* Dividing Whole Numbers *Pathway 3:* Multiplying Whole Numbers **Decimal Operations** *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	B2.1 use the properties and order of operations, and the relationships between operations, to solve problems involving whole numbers, decimal numbers, fractions, ratios, rates, and percents, including those requiring multiple steps or multiple operations	B2.1 use the properties of operations, and the relationships between operations, to solve problems involving whole numbers, decimal numbers, fractions, ratios, rates, and whole number percents, including those requiring multiple steps or multiple operations	B2.1 use the properties of operations, and the relationships between operations, to solve problems involving whole numbers and decimal numbers, including those requiring more than one operation, and check calculations

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Number), Chapter 3 Cross-Strand Investigation, Chapter 4 Curious Math (Adding a Special Sequence of Numbers), Chapter 5 Mental Imagery (Determining the Regular Price), Chapter 6 Getting Started, 6.1, Chapter 6 Curious Math (Subtracting with an Adding Machine), 6.7, 6.8, Chapter 6 Mental Math (Using Fractions to Solve Percent Problems), Chapter 6 Task, Chapter 6 Cross-Strand Investigation, Chapter 8 Curious Math (A Winning Formula for Billiards), Chapter 8 Mental Math (Multiplying Mixed Numbers Part by Part), Chapter 8 Math		**Relating Situations to Operations** *Pathway 1:* Recognizing Division Situations *Pathway 2:* Recognizing Multiplication Situations *Pathway 3:* Recognizing Subtraction Situations **Fraction Operations** *Pathway 1:* Repeated Addition of Fractions *Pathway 2:* Adding and Subtracting Mixed Numbers *Pathway 3:* Subtracting Fractions *Pathway 4:* Adding Fractions **Rates, Percents, and Ratios** *Pathway 1:* Using Rates *Pathway 2:* Using Percents *Pathway 3:* Using Ratios **Integers** *Pathway 1:* Subtracting Integers *Pathway 2:* Adding Integers			

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
	in Action, 9.3, 9.9, Chapter 9 Math Game (Target 2/3), 9.10, Chapter 9 Task, Chapter 9 Cross-Strand Investigation, Chapter 10 Mental Math (Squaring Numbers that End in 5), Chapter 12 Curious Math (Factorials!) expectation partially addressed					

Number: Math Facts						
Grade 8 Ontario expectations	***Nelson Mathematics 8***	***Math Path 8***	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
B2.2 understand and recall commonly used square numbers and their square roots	Chapter 1 Curious Math (Subtracting to Calculate Square Roots), 1.6, 1.7, 4.4, Chapter 10 Mental Math (Squaring Numbers that End in 5),	1.1	**Multiplicative Situations** *Pathway 2:* Prime Numbers and Perfect Squares *Pathway 3:* Factors and Multiples	B2.2 understand and recall commonly used percents, fractions, and decimal equivalents	B2.2 understand and use the divisibility rules to determine whether a number is divisible by 2, 3, 4, 5, 6, 8, 9, and 10	B2.2 recall and demonstrate multiplication facts from 0 × 0 to 12 × 12, and related division facts

Number: Mental Math						
Grade 8 Ontario expectations	***Nelson Mathematics 8***	***Math Path 8***	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
B2.3 use mental math strategies to multiply and divide whole	Chapter 1 Mental Math	2.1	**Whole Number Operations**	B2.3 use mental math strategies to increase	B2.3 use mental math strategies to	B2.3 use mental math strategies to multiply

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| numbers and decimal numbers up to thousandths by powers of ten, and explain the strategies used | (Multiplying and Dividing by Powers of 10), 1.5

expectation partially addressed | | *Pathway 2:* Dividing Whole Numbers
Pathway 3: Multiplying Whole Numbers

Decimal Operations
Pathway 1: Dividing Whole Numbers by Decimals
Pathway 2: Dividing Decimals by Whole Numbers
Pathway 3: Multiplying with Decimals | and decrease a whole number by 1%, 5%, 10%, 25%, 50%, and 100%, and explain the strategies used | calculate percents of whole numbers including 1%, 5%, 10%, 15%, 25%, and 50%, and explain the strategies used | whole numbers by 0.1 and 0.01 and estimate sums and differences of decimal numbers up to hundredths, and explain the strategies used |

Number: Addition and Subtraction						
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
B2.4 add and subtract integers, using appropriate strategies, in various contexts	Chapter 6 Getting Started, 6.1, 6.2, Chapter 6 Curious Math (Subtracting with an Adding Machine), 6.7, 6.8, Chapter 6 Math Game (Target Zero), Chapter 6 Task, Chapter 6 Cross-Strand Investigation	4.2	**Integers** *Pathway 1:* Subtracting Integers *Pathway 2:* Adding Integers	B2.4 use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of integers	B2.4 represent and solve problems involving the addition and subtraction of whole numbers and decimal numbers, using estimation and algorithms	B2.4 represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 100 000, and of decimal numbers up to hundredths, using appropriate tools, strategies, and algorithms
B2.5 add and subtract fractions using appropriate strategies, in various contexts	Chapter 9 Getting Started, 9.1, 9.2, 9.3, Chapter 9 Curious Math (Continued Fractions), Chapter 9 Math	3.4, 4.3	**Fraction Operations** *Pathway 2:* Adding and Subtracting Mixed Numbers *Pathway 3:* Subtracting Fractions *Pathway 4:* Adding Fractions	B2.5 add and subtract fractions using appropriate strategies, in various contexts	B2.5 add and subtract fractions with like and unlike denominators, using appropriate tools, in various contexts	B2.5 add and subtract fractions with like denominators, in various contexts

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	Game (Target 2/3), 9.10, Chapter 9 Task, Chapter 9 Cross-Strand Investigation					

Number: Multiplication and Division						
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
				B2.6 determine the greatest common factor for a variety of whole numbers up to 144 and the lowest common multiple for two and three whole number	B2.6 represent composite numbers as a product of their prime factors, including through the use of factor trees	
B2.6 multiply and divide fractions by fractions, as well as by whole numbers and mixed numbers, in various contexts	Chapter 3 Mental Math (Calculating a Fraction of a Whole Number), Chapter 8 Mental Math (Multiplying Mixed Numbers Part by Part), 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, Chapter 9 Math Game (Target 2/3), 9.10, Chapter 9 Task, Chapter 9 Cross-Strand Investigation	3.1, 3.2, 3.3, 3.4	**Fraction Operations** *Pathway 1:* Repeated Addition of Fractions	B2.7 evaluate and express repeated multiplication of whole numbers using exponential notation, in various contexts B2.8 multiply and divide fractions by fractions, using tools in various contexts B2.9 multiply and divide decimal numbers by decimal numbers, in various contexts	B2.9 multiply whole numbers by proper fractions, using appropriate tools and strategies B2.10 divide whole numbers by proper fractions, using appropriate tools and strategies	B2.8 multiply and divide one-digit whole numbers by unit fractions, using appropriate tools and drawings
B2.7 multiply and divide integers, using appropriate strategies, in various contexts	6.3, 6.4, 6.5, 6.6, 6.7, 6.8, Chapter 6 Math	4.1, 4.2		B2.9 multiply and divide decimal numbers by decimal	B2.7 represent and solve problems involving the	B2.6 represent and solve problems involving the

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	Game (Target Zero), Chapter 6 Task, Chapter 6 Cross-Strand Investigation			numbers, in various contexts	multiplication of three-digit whole numbers by decimal tenths, using algorithms B2.8 represent and solve problems involving the division of three-digit whole numbers by decimal tenths, using appropriate tools, strategies, and algorithms, and expressing remainders as appropriate B2.11 represent and solve problems involving the division of decimal numbers up to thousandths by whole numbers up to 10, using appropriate tools and strategies	multiplication of two-digit whole numbers by two-digit whole numbers using the area model and using algorithms, and make connections between the two methods B2.7 represent and solve problems involving the division of three-digit whole numbers by two-digit whole numbers using the area model and using algorithms, and make connections between the two methods, while expressing any remainder appropriately
B2.8 compare proportional situations and determine unknown values in proportional situations, and apply proportional reasoning to solve problems in various contexts	Chapter 2 Getting Started, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, Chapter 2 Task, Chapter 3 Curious Math (When is a Low Score Not a Bad Score?), Chapter 3 Cross-Strand Investigation),	8.1	**Rates, Percents, and Ratios** *Pathway 1:* Using Rates *Pathway 2:* Using Percents *Pathway 3:* Using Ratios	B2.10 identify proportional and non-proportional situations and apply proportional reasoning to solve problems	B2.12 solve problems involving ratios, including percents and rates, using appropriate tools and strategies	B2.9 represent and create equivalent ratios and rates, using a variety of tools and models, in various contexts

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
	Chapter 8 Curious Math (A Winning Formula for Billiards) expectation partially addressed					

Algebra: Patterns

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
C1.1 identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing and shrinking patterns on the basis of their constant rates and initial values	2.4, 2.5, Chapter 4 Getting Started, 4.1, 4.2, 4.3, 4.4, Chapter 4 Curious Math (Adding a Special Sequence of Numbers), 4.5, Chapter 4 Math Game (Sprouts), Chapter 4 Task, Chapter 6 Cross-Strand Investigation, Chapter 8 Getting Started, 8.1, 8.2, 8.3, 9.3 expectation partially addressed	6.1	**Patterns** *Pathway 1:* Linear Relations *Pathway 2:* Representing Patterns *Pathway 3:* Exploring Simple Patterns	C1.1 identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing patterns on the basis of their constant rates and initial values	C1.1 identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and specify which growing patterns are linear	C1.1 identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts
C1.2 create and translate repeating, growing, and shrinking patterns involving rational numbers using various representations, including	2.4, 2.5, Chapter 4 Getting Started, 4.1, 4.2, 4.3, 4.4, Chapter 4	6.2	**Patterns** *Pathway 1:* Linear Relations *Pathway 2:* Representing Patterns	C1.2 create and translate repeating, growing, and shrinking patterns involving whole numbers and	C1.2 create and translate repeating, growing, and shrinking patterns using various	C1.2 create and translate growing and shrinking patterns using various representations,

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algebraic expressions and equations for linear growing and shrinking patterns	Curious Math (Adding a Special Sequence of Numbers), 4.5, Chapter 4 Math Game (Sprouts), Chapter 4 Task, Chapter 6 Cross-Strand Investigation, 8.1, 8.2, 8.3 expectation partially addressed		*Pathway 3:* Exploring Simple Patterns	decimal numbers using various representations, including algebraic expressions and equations for linear growing patterns	representations, including tables of values, graphs, and for linear growing patterns, algebraic expressions and equations	including tables of values and graphs
C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in growing and shrinking patterns involving rational numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing and shrinking patterns	2.4, 2.5, Chapter 4 Getting Started, 4.1, 4.2, 4.3, 4.4, Chapter 4 Curious Math (Adding a Special Sequence of Numbers), 4.5, Chapter 4 Math Game (Sprouts), Chapter 4 Task, Chapter 6 Cross-Strand Investigation, Chapter 8 Getting Started, 8.1, 8.2, 8.3, 8.4, 9.3 expectation partially addressed	6.3	**Patterns** *Pathway 1:* Linear Relations *Pathway 2:* Representing Patterns *Pathway 3:* Exploring Simple Patterns	C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns involving whole numbers and decimal numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns	C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns	C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns

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C1.4 create and describe patterns to illustrate relationships among rational numbers	Chapter 1 Getting Started, 1.4, Chapter 1 Mental Math (Multiplying and Dividing by Powers of 10), 1.5, Chapter 1 Curious Math (Subtracting to Calculate Square Roots), 1.9, Chapter 1 Task, 4.1, 4.4, Chapter 4 Curious Math (Adding a Special Sequence of Numbers), 4.5, Chapter 4 Task, 6.3, 6.4, 6.5, 6.6., 8.1, 8.2, 8.4, 9.3, Chapter 9 Curious Math (Continued Fractions), Chapter 10 Mental Math (Squaring Numbers that End in 5), Chapter 12 Curious Math (Factorials!) expectation partially addressed	6.4	**Multiplicative Situations** *Pathway 2:* Prime Numbers and Perfect Squares	C1.4 create and describe patterns to illustrate relationships among integers	C1.4 create and describe patterns to illustrate relationships among whole numbers and decimal numbers	C1.4 create and describe patterns to illustrate relationships among whole numbers and decimal tenths and hundredths
Algebra: Variables and Expressions						

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
C2.1 add and subtract monomials with a degree of 1, and add binomials with a degree of 1 that involve integers, using tools		5.1		C2.1 add and subtract monomials with a degree of 1 that involve whole numbers, using tools	C2.1 add monomials with a degree of 1 that involve whole numbers, using tools	
C2.2 evaluate algebraic expressions that involve rational numbers	Chapter 4 Getting Started, 4.2, 4.3, Chapter 4 Task, Chapter 6 Cross-Strand Investigation, Chapter 8 Getting Started, 8.1, 8.2, Chapter 8 Curious Math (A Winning Formula for Billiards), 8.3, Chapter 8 Math Game (Alge-Scrabble), Chapter 8 Task, Chapter 8 Math in Action, Chapter 9 Cross-Strand Investigation, 10.6, 11.2, 11.3, 11.4, Chapter 12 Curious Math (Factorials!) expectation partially addressed	5.3	**Algebra** *Pathway 1:* Solving Problems Using Equations *Pathway 2:* Solving Simple Equations *Pathway 3:* Using Variables	C2.2 evaluate algebraic expressions that involve whole numbers and decimal numbers	C2.2 evaluate algebraic expressions that involve whole numbers and decimal tenths	C2.1 translate among words, algebraic expressions, and visual representations that describe equivalent relationships C2.2 evaluate algebraic expressions that involve whole numbers

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Algebra: Equalities and Inequalities

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
C2.3 solve equations that involve multiple terms, integers, and decimal numbers in various contexts, and verify solutions	8.4, 8.5, Chapter 8 Math Game (Alge-Scrabble), 8.6, Chapter 8 Task, Chapter 9 Getting Started, Chapter 9 Cross-Strand Investigation, 10.6 expectation partially addressed	5.4, 5.5	**Algebra** *Pathway 1:* Solving Problems Using Equations *Pathway 2:* Solving Simple Equations *Pathway 3:* Using Variables	C2.3 solve equations that involve multiple terms, whole numbers, and decimal numbers in various contexts, and verify solutions	C2.3 solve equations that involve multiple terms and whole numbers in various contexts, and verify solutions	C2.3 solve equations that involve whole numbers up to 100 in various contexts, and verify solutions
C2.4 solve inequalities that involve integers, and verify and graph the solutions	1.6, Chapter 9 Mental Imagery (Comparing Negative Rationals) expectation slightly addressed	5.6		C2.4 solve inequalities that involve multiple terms and whole numbers, and verify and graph the solutions	C2.4 solve inequalities that involve two operations and whole numbers up to 100, and verify and graph the solutions	C2.4 solve inequalities that involve one operation and whole numbers up to 50, and verify and graph the solutions

Algebra: Coding

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves the analysis of data in order to inform and communicate decisions		Coding Toolkit		C3.1 solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that involves events	C3.1 solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that	C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves conditional

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Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
				influenced by a defined count and/or sub-program and other control structures	involves conditional statements and other control structures	statements and other control structures
C3.2 read and alter existing code involving the analysis of data in order to inform and communicate decisions, and describe how changes to the code affect the outcomes and the efficiency of the code		Coding Toolkit		C3.2 read and alter existing code, including code that involves events influenced by a defined count and/or sub-program and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code	C3.2 read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect outcomes and the efficiency of the code	C3.2 read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes

Data: Data Collection and Organization

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
D1.1 identify situations involving one-variable data and situations involving two-variable data, and explain when each type of data is needed		15.1		D1.1 explain why percentages are used to represent the distribution of a variable for a population or sample in large sets of data, and provide examples	D1.1 describe the difference between discrete and continuous data, and provide examples of each	D1.1 explain the importance of various sampling techniques for collecting a sample of data that is representative of a population
D1.2 collect continuous data to answer questions of interest involving two variables, and organize the data sets as appropriate in a table of values	Chapter 3 Getting Started, 3.2, 3.5, Chapter 3 Task expectation slightly addressed	15.2	**Displaying Data** *Pathway 2:* Bias and Sampling	D1.2 collect qualitative data and discrete and continuous quantitative data to answer questions of interest, and organize the sets of data as appropriate, including using percentages	D1.2 collect qualitative data and discrete and continuous quantitative data to answer questions of interest about a population, and organize the sets of data as appropriate, including using intervals	D1.2 collect data, using appropriate sampling techniques as needed, to answer questions of interest about a population, and organize the data in relative-frequency tables

Data: Data Visualization

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Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
D1.3 select from among a variety of graphs, including scatter plots, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs	Chapter 3 Getting Started, 3.1, 3.3, 3.4, 3.5, 3.6, Chapter 3 Task, 4.5, Chapter 5 Cross-Strand Investigation, 8.1, 8.2, 8.3	15.3	**Displaying Data** *Pathway 1:* Using Circle Graphs and Line Graphs *Pathway 3:* Interpreting Graphs	D1.3 select from among a variety of graphs, including circle graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs	D1.3 select from among a variety of graphs, including histograms and broken-line graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs	D1.3 select from among a variety of graphs, including stacked-bar graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs
D1.4 create an infographic about a data set, representing the data in appropriate ways, including in tables and scatter plots, and incorporating any other relevant information that helps to tell a story about the data	Chapter 3 Getting Started, 3.1, 3.3, 3.4, 3.5, 3.6, Chapter 3 Task, 4.5, Chapter 5 Cross-Strand Investigation, 8.1, 8.2, 8.3 expectation partially addressed	15.4	**Displaying Data** *Pathway 1:* Using Circle Graphs and Line Graphs *Pathway 3:* Interpreting Graphs	D1.4 create an infographic about a data set, representing the data in appropriate ways, including in tables and circle graphs, and incorporating any other relevant information that helps to tell a story about the data	D1.4 create an infographic about a data set, representing the data in appropriate ways, including in tables, histograms, and broken-line graphs, and incorporating any other relevant information that helps to tell a story about the data	D1.4 create an infographic about a data set, representing the data in appropriate ways, including in relative-frequency tables and stacked-bar graphs, and incorporating any other relevant information that helps to tell a story about the data
Data: Data Analysis						
Grade 8 Ontario expectations	***Nelson Mathematics 8***	***Math Path 8***	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
D1.5 use mathematical language, including the terms "strong", "weak", "none", "positive", and "negative" to describe the		15.1	**Displaying Data** *Pathway 3:* Interpreting Graphs	D1.5 determine the impact of adding or removing data from a data set on a measure	D1.5 determine the range as a measure of spread and the measures of central	D1.5 determine the mean and the median and identify the mode(s), if any, for

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Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
relationship between two variables for various data sets with and without outliers			**Summarizing Data** *Pathway 1:* Effects of Changing Data *Pathway 2:* Using Mean, Median, and Mode *Pathway 3:* Calculating the Mean	of central tendency, and describe how these changes alter the shape and distribution of the data	tendency for various data sets, and use this information to compare two or more data sets	various data sets involving whole numbers and decimal numbers, and explain what each of these measures indicates about the data
D1.6 analyse different sets of data presented in various ways, including in scatter plots and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions	Chapter 3 Getting Started, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, Chapter 3 Task, 4.5, Chapter 5 Cross-Strand Investigation, 8.1, 8.2, 8.3	15.1, 15.4	**Displaying Data** *Pathway 1:* Using Circle Graphs and Line Graphs *Pathway 2:* Bias and Sampling *Pathway 3:* Interpreting Graphs	D1.6 analyse different sets of data presented in various ways, including in circle graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions	D1.6 analyse different sets of data presented in various ways, including in histograms and broken-line graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions	D1.6 analyse different sets of data presented in various ways, including in stacked-bar graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions

Data: Probability

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
D2.1 solve various problems that involve probability, using appropriate tools and strategies, including Venn and tree diagrams	Chapter 12 Getting Started, 12.1, 12.2, 12.3, Chapter 12 Curious Math (Factorials!), 12.5, 12.6, Chapter 12 (Math Game), Chapter 12 Task, Chapter 12 Cross-Strand Investigation	16.1	**Probability** *Pathway 1:* Probability: Independent Events *Pathway 2:* Theoretical Probability *Pathway 3:* Experimental Probability	D2.1 describe the difference between independent and dependent events, and explain how their probabilities differ, providing examples	D2.1 use fractions, decimals, and percents to express the probability of events happening, represent this probability on a probability line, and use it to make predictions and informed decisions	D2.1 use fractions to express the probability of events happening, represent this probability on a probability line, and use it to make predictions and informed decisions

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Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
	expectation partially addressed					
D2.2 determine and compare the theoretical and experimental probabilities of multiple independent events happening and of multiple dependent events happening	Chapter 12 Getting Started, 12.1, Chapter 12 Mental Math (Estimating Percents), 12.2, 12.3, 12.5, 12.6, Chapter 12 (Math Game), Chapter 12 Task expectation partially addressed	16.1	**Probability** *Pathway 1:* Probability: Independent Events *Pathway 2:* Theoretical Probability *Pathway 3:* Experimental Probability	D2.2 determine and compare the theoretical and experimental probabilities of two independent events happening and of two dependent events happening	D2.2 determine and compare the theoretical and experimental probabilities of two independent events happening	D2.2 determine and compare the theoretical and experimental probabilities of an event happening

Spatial Sense: Geometric Reasoning

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
E1.1 identify geometric properties of tessellating shapes and identify the transformations that occur in the tessellations	Chapter 7 Getting Started expectation partially addressed	14.1	**Transformations** *Pathway 1:* Using Transformations in Designs	E1.1 describe and classify cylinders, pyramids, and prisms according to their geometric properties, including plane and rotational symmetry	E1.1 create lists of the geometric properties of various types of quadrilaterals, including the properties of the diagonals, rotational symmetry, and line symmetry	E1.1 identify geometric properties of triangles, and construct different types of triangles when given side or angle measurements E1.2 identify and construct congruent triangles, rectangles, and parallelograms
E1.2 make objects and models using appropriate scales, given their top, front, and side views or their perspective views	11.4, Chapter 11 Mental Imagery (Calculating Surface Area of Cube Structures)	13.1	**3-Shapes** *Pathway 1:* Using Isometric Drawings *Pathway 2:* Using Different Views *Pathway 3:* Using Nets	E1.2 draw top, front, and side views, as well as perspective views, of objects and physical spaces, using appropriate scales	E1.2 construct three-dimensional objects when given their top, front, and side views	E1.3 draw top, front, and side views of objects, and match drawings with objects

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Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
	expectation slightly addressed					
E1.3 use scale drawings to calculate actual lengths and areas, and reproduce scale drawings at different ratios	Chapter 10 Getting Started, 10.7 expectation slightly addressed	8.3	**3-Shapes** *Pathway 1:* Using Isometric Drawings *Pathway 2:* Using Different Views *Pathway 3:* Using Nets			

Spatial Sense: Location and Movement

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
E1.4 describe and perform translations, reflections, rotations, and dilations on a Cartesian plane, and predict the results of these transformations	Chapter 7 Getting Started, 7.1, 7.2, 7.3, 7.4, 7.5, Chapter 7 Math Game (Coordinate Racing), Chapter 7 Task, Chapter 9 Cross-Strand Investigation, Chapter 12 Cross-Strand Investigation expectation partially addressed	14.2	**Plotting Points in 4 Quadrants** *Pathway 1:* Plotting Points in 4 Quadrants *Pathway 2:* Plotting Points on a Grid **Transformations** *Pathway 1:* Using Transformations in Designs *Pathway 2:* Performing Dilatations *Pathway 3:* Combining Transformations *Pathway 4:* Performing Single Transformations	E1.3 perform dilations and describe the similarity between the image and the original shape E1.4 describe and perform translations, reflections, and rotations on a Cartesian plane, and predict the results of these transformations	E1.3 plot and read coordinates in all four quadrants of a Cartesian plane, and describe the translations that move a point from one coordinate to another E1.4 describe and perform combinations of translations, reflections, and rotations up to 360° on a grid, and predict the results of these transformations	E1.4 plot and read coordinates in the first quadrant of a Cartesian plane using various scales, and describe the translations that move a point from one coordinate to another E1.5 describe and perform translations, reflections, and rotations up to 180° on a grid, and predict the results of these transformations

Spatial Sense: The Metric System

Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
E2.1 represent very large (mega, giga, tera) and very small (micro, nano, pico) metric units using		2.2	**Metric Units** *Pathway 1:* Renaming Units	E2.1 describe the differences and similarities between volume and capacity,	E2.1 measure length, area, mass, and capacity using the appropriate metric	E2.1 use appropriate metric units to estimate and measure

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Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
models, base ten relationships, and exponential notation			*Pathway 2:* Selecting a Unit	and apply the relationship between millilitres (mL) and cubic centimetres (cm3) to solve problems E2.2 solve problems involving perimeter, area, and volume that require converting from one metric unit of measurement to another	units, and solve problems that require converting smaller units to larger ones and vice versa	length, area, mass, and capacity E2.2 solve problems that involve converting larger metric units into smaller ones, and describe the base ten relationships among metric units
				Spatial Sense: Circles		
Grade 8 Ontario expectations	***Nelson Mathematics 8***	***Math Path 8***	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
				E2.3 use the relationships between the radius, diameter, and circumference of a circle to explain the formula for finding the circumference and to solve related problems E2.4 construct circles when given the radius, diameter, or circumference E2.5 show the relationships between the radius, diameter, and area of a circle, and use these relationships to explain the formula for measuring the area of		

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| | | | | a circle and to solve related problems | | |

Spatial Sense: Lines, Angles, and Similarity					**Spatial Sense: Angles**	
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
E2.2 solve problems involving angle properties, including the properties of intersecting and parallel lines and of polygons	Chapter 10 Getting Started, 10.1, 10.2, 10.3, 10.4, 10.5, 10.7, Chapter 10 Math Game (Needle in a Haystack), Chapter 10 Task, Chapter 10 Math in Action	11.1, 11.2	**Angles** *Pathway 1:* Sums of Angle Measurements in Polygons *Pathway 2:* Drawing Angles *Pathway 3:* Measuring Angles		E2.2 use a protractor to measure and construct angles up to 360°, and state the relationship between angles that are measured clockwise and those that are measured counterclockwise E2.3 use the properties of supplementary angles, complementary angles, opposite angles, and interior and exterior angles to solve for unknown angle measures	E2.3 compare angles and determine their relative size by matching them and by measuring them using appropriate non-standard units E2.4 explain how protractors work, use them to measure and construct angles up to 180°, and use benchmark angles to estimate the size of other angles
Spatial Sense: Length, Area, and Volume				**Spatial Sense: Volume and Surface Area**	**Spatial Sense: Area and Surface Area**	**Spatial Sense: Area**
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
E2.3 solve problems involving the perimeter, circumference, area, volume, and surface area of composite two-dimensional shapes and three-dimensional objects, using appropriate formulas	Chapter 5 Getting Started, 5.3, 5.5, 5.6, Chapter 5 Math Game (Rolling Circles), Chapter 5 Task, Chapter 5 Math in Action, Chapter	9.1, 10.1	**Area and Perimeter** *Pathway 1:* Area of Circles *Pathway 2:* Circumference of Circles *Pathway 3:* Area of Composite Shapes *Pathway 4:* Area of Parallelograms and Triangles	E2.6 represent cylinders as nets and determine their surface area by adding the areas of their parts E2.7 show that the volume of a prism or cylinder can be	E2.4 determine the areas of trapezoids, rhombuses, kites, and composite polygons by decomposing them into shapes with known areas	E2.5 use the area relationships among rectangles, parallelograms, and triangles to develop the formulas for the area of a parallelogram and the area of a

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| | 10 Math in Action, Chapter 11 Getting Started, 11.1, Chapter 11 Getting Started, 11.2, 11.3, 11.4, Chapter 11 Mental Imagery (Calculating Surface Area of Cube Structures), Chapter 11 Math Game (The Volumizer Game!), Chapter 11 Task, Chapter 12 Cross-Strand Investigation

expectation partially addressed | | *Pathway 5:* Area and Perimeter of Rectangles

Volume and Surface Area
Pathway 1: Volume of Prisms: Using a Formula
Pathway 2: Surface Area of Prisms
Pathway 3: Volume of Rectangular Prisms | determined by multiplying the area of its base by its height, and apply this relationship to find the area of the base, volume, and height of prisms and cylinders when given two of the three measurements | E2.5 create and use nets to demonstrate the relationship between the faces of prisms and pyramids and their surface areas

E2.6 determine the surface areas of prisms and pyramids by calculating the areas of their two-dimensional faces and adding them together | triangle, and solve related problems

E2.6 show that two-dimensional shapes with the same area can have different perimeters, and solve related problems |
|---|---|---|---|---|---|---|
| E2.4 describe the Pythagorean relationship using various geometric models, and apply the theorem to solve problems involving an unknown side length for a given right triangle | Chapter 10 Curious Math (Dissecting Squares), 10.6, 10.7, Chapter 10 Math Game (Needle in a Haystack), Chapter 10 Task, Chapter 10 Math in Action

expectation partially addressed | 12.1, 12.2 | | | | |

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Financial Literacy: Money Concepts						
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
F1.1 describe some advantages and disadvantages of various methods of payment that can be used when dealing with multiple currencies and exchange rates				F1.1 identify and compare exchange rates, and convert foreign currencies to Canadian dollars and vice versa	F1.1 describe the advantages and disadvantages of various methods of payment that can be used to purchase goods and services	F1.1 describe several ways money can be transferred among individuals, organizations, and businesses F1.2 estimate and calculate the cost of transactions involving multiple items priced in dollars and cents, including sales tax, using various strategies
Financial Literacy: Financial Management						
Grade 8 Ontario expectations	*Nelson Mathematics 8*	*Math Path 8*	**Leaps and Bounds 7/8 Topics**	**Grade 7 Ontario expectations**	**Grade 6 Ontario expectations**	**Grade 5 Ontario expectations**
F1.2 create a financial plan to reach a long-term financial goal, accounting for income, expenses, and tax implications	Chapter 8 Math in Action expectation slightly addressed			F1.2 identify and describe various reliable sources of information that can help with planning for and reaching a financial goal	F1.2 identify different types of financial goals, including earning and saving goals, and outline some key steps in achieving them	F1.3 design sample basic budgets to manage finances for various earning and spending scenarios
F1.3 identify different ways to maintain a balanced budget, and use appropriate tools to track all income and spending, for several different scenarios				F1.3 create, track, and adjust sample budgets designed to meet longer-term financial goals for various scenarios F1.4 identify various societal and personal factors that may	F1.3 identify and describe various factors that may help or interfere with reaching financial goals	F1.4 explain the concepts of credit and debt, and describe how financial decisions may be impacted by each

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				influence financial decision making, and describe the effects that each might have		
F1.4 determine the growth of simple and compound interest at various rates using digital tools, and explain the impact interest has on long-term financial planning						

Grade 8 Ontario expectations	Nelson Mathematics 8	Math Path 8	Leaps and Bounds 7/8 Topics	Grade 7 Ontario expectations	Grade 6 Ontario expectations	Grade 5 Ontario expectations
F1.5 compare various ways for consumers to get more value for their money when spending, including taking advantage of sales and customer loyalty and incentive programs, and determine the best choice for different scenarios	2.8, Chapter 5 Mental Imagery (Determining the Regular Price) expectation slightly addressed					F1.5 calculate unit rates for various goods and services, and identify which rates offer the best value F1.6 describe the types of taxes that are collected by the different levels of government in Canada, and explain how tax revenue is used to provide services in the community
F1.6 compare interest rates, annual fees, and rewards and other incentives offered by various credit card companies and consumer contracts to determine the best value and the best choice for different scenarios	2.8 expectation slightly addressed			F1.5 explain how interest rates can impact savings, investments, and the cost of borrowing to pay for goods and services over time F1.6 compare interest rates and fees for different accounts and loans offered by	F1.4 explain the concept of interest rates, and identify types of interest rates and fees associated with different accounts and loans offered by various banks and other financial institutions	

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				various financial institutions, and determine the best option for different scenarios	F1.5 describe trading, lending, borrowing, and donating as different ways to distribute financial and other resources among individuals and organizations	