Leaps AND Bounds

TOWARD Math Understanding

Correlation to Ontario Curriculum and Grade 4 Resources

Leaps and Bounds 3/4 *is a math intervention resource.*

GRADE 4 Core Resources Correlation with Grade 4 core resources			INTERVENTION Resources and Expectations Correlation between *Leaps and Bounds 3/4* and prerequisite expectations from Ontario Grades 1 to 3			
Number: Whole Numbers						
Grade 4 Ontario expectations	***Nelson Mathematics 4***	***Math Path 4***	**Leaps and Bounds 3/4 Topics**	**Grade 3 Ontario expectations**	**Grade 2 Ontario expectations**	**Grade 1 Ontario expectations**
B1.1 read, represent, compose, and decompose whole numbers up to and including 10 000, using appropriate tools and strategies, and describe various ways they are used in everyday life	Chapter 2 Getting Started, 2.1, 2.2, 2.4, 2.5, Chapter 2 Task	1.1, 1.2	**Representing Whole Numbers** *Pathway 1:* Representing Numbers to 1000 *Pathway 2:* Representing Numbers to 100 *Pathway 3:* Representing Numbers to 20	B1.1 read, represent, compose, and decompose whole numbers up to and including 1000, using a variety of tools and strategies, and describe various ways they are used in everyday life B1.4 count to 1000, including by 50s, 100s, and 200s, using a variety of tools and strategies B1.5 use place value when describing and representing multi-digit numbers in a variety of ways, including with base ten materials	B1.1 read, represent, compose, and decompose whole numbers up to and including 200, using a variety of tools and strategies, and describe various ways they are used in everyday life B1.4 count to 200, including by 20s, 25s, and 50s, using a variety of tools and strategies B1.5 describe what makes a number even or odd	B1.1 read, represent, compose, and decompose whole numbers up to and including 200, using a variety of tools and strategies, and describe various ways they are used in everyday life B1.2 compose and decompose whole numbers up to and including 50, using a variety of tools and strategies, in various contexts B1.5 count to 50 by 1s, 2s, 5s, and 10s, using a variety of tools and strategies
B1.2 compare and order whole numbers up to	Chapter 2 Getting Started, 2.3, 2.7, Chapter 2 Task	1.3	**Comparing and Ordering Numbers**	B1.2 compare and order whole numbers up to and including	B1.2 compare and order whole numbers up to and including	B1.3 compare and order whole numbers

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Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
and including 10 000, in various contexts			*Pathway 1:* Comparing and Ordering to 1000 *Pathway 2:* Comparing and Ordering to 100 *Pathway 3:* Comparing and Ordering to 20	1000, in various contexts	200, in various contexts	up to and including 50, in various contexts
B1.3 round whole numbers to the nearest ten, hundred, or thousand, in various contexts	2.6, Chapter 2 Task	1.4, 1.5		B1.3 round whole numbers to the nearest ten or hundred, in various contexts	B1.3 estimate the number of objects in collections of up to 200 and verify their estimates by counting	B1.4 estimate the number of objects in collections of up to 50, and verify their estimates by counting

Number: Fractions and Decimals / **Number: Fractions**

Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
B1.4 represent fractions from halves to tenths using drawings, tools, and standard fractional notation, and explain the meanings of the denominator and the numerator	Chapter 12 Getting Started, 12.1, Chapter 12 Task	12.1	**Fractions** *Pathway 1:* Fractions as Parts of Sets *Pathway 2:* Fractions as Parts of Wholes *Pathway 3:* Halves	B1.6 use drawings to represent, solve, and compare the results of fair-share problems that involve sharing up to 20 items among 2, 3, 4, 5, 6, 8, and 10 sharers, including problems that result in whole numbers, mixed numbers, and fractional amounts B1.7 represent and solve fair-share problems that focus on determining and using equivalent fractions, including problems that involve halves, fourths, and eighths; thirds and sixths; and fifths and tenths	B1.6 use drawings to represent, solve, and compare the results of fair-share problems that involve sharing up to 10 items among 2, 3, 4, and 6 sharers, including problems that result in whole numbers, mixed numbers, and fractional amounts B1.7 recognize that one-third and two-sixths of the same whole are equal, in fair-sharing contexts	B1.6 use drawings to represent and solve fair-share problems that involve 2 and 4 sharers, respectively, and have remainders of 1 or 2 B1.7 recognize that one-half and two-fourths of the same whole are equal, in fair-sharing contexts
B1.5 use drawings and models to represent,		12.1, 12.3	**Fractions**			B1.8 use drawings to compare and order

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compare, and order fractions representing the individual portions that result from two different fair-share scenarios involving any combination of 2, 3, 4, 5, 6, 8, and 10 sharers			*Pathway 2:* Fractions as Parts of Wholes			unit fractions representing the individual portions that result when a whole is shared by different numbers of sharers, up to a maximum of 10
B1.6 count to 10 by halves, thirds, fourths, fifths, sixths, eighths, and tenths, with and without the use of tools		12.1				
B1.7 read, represent, compare, and order decimal tenths, in various contexts	12.4, 12.5, Chapter 12 Task	13.1, 13.2				
B1.8 round decimal numbers to the nearest whole number, in various contexts		13.6				
B1.9 describe relationships and show equivalences among fractions and decimal tenths, in various contexts	12.4, Chapter 12 Math Game (Find the Match), Chapter 12 Task	13.3				

Number: Properties and Relationships

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
B2.1 use the properties of operations, and the relationships between addition, subtraction, multiplication, and division, to solve problems involving whole numbers, including those requiring more than one	Chapter 1 Mental Math (Adding with 5s), 4.8, Chapter 6 Getting Started, 6.1, 6.3, 6.4, 6.5, 6.6, Chapter 6 Curious Math (Multiplying and Dividing with 0), 6.7, 6.8, 6.10, Chapter 6 Task,	6.4, 8.1, 8.2, 8.3, 8.4	**Adding Whole Numbers** *Pathway 1:* Adding Three-Digit Numbers *Pathway 2:* Adding Two-Digit Numbers *Pathway 3:* Adding One-Digit Numbers **Subtracting Whole Numbers**	B2.1 use the properties of operations, and the relationships between multiplication and division, to solve problems and check calculations	B2.1 use the properties of addition and subtraction, and the relationships between addition and multiplication and between subtraction and division, to solve	B2.1 use the properties of addition and subtraction, and the relationship between addition and subtraction, to solve problems and check calculations

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operation, and check calculations	Chapter 9 Getting Started, 9.2, 9.3, 9.5, Chapter 10 Getting Started, Chapter 10 Mental Math (Adding in Steps), 10.2, 10.4, 10.7, 10.8		*Pathway 1:* Subtracting Three-Digit Numbers *Pathway 2:* Subtracting Numbers to 100 *Pathway 3:* Subtracting Numbers to 20 **Mental Math** *Pathway 1:* Compensating *Pathway 2:* Regrouping *Pathway 3:* Relating to 5 or 10		problems and check calculations	

Number: Math Facts

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
B2.2 recall and demonstrate multiplication facts for 1 × 1 to 10 × 10, and related division facts	Chapter 6 Getting Started, 6.1, 6.2, 6.3, 6.4, 6.6, Chapter 6 Curious Math (Multiplying and Dividing with 0), 6.7, 6.8, 6.9, Chapter 6 Curious Math (Multiplying with 9), 6.10, Chapter 6 Curious Math (Circles and Digits), Chapter 6 Math Game (Math Cat), Chapter 6 Task, Chapter 9 Getting Started, 9.1, Chapter 10 Getting Started, 10.1	Chapter 6 Getting Started, 6.1, 6.2, 6.3, 6.4, 6.6, Chapter 6 Curious Math (Multiplying and Dividing with 0), 6.7, 6.8, 6.9, Chapter 6 Curious Math (Multiplying with 9), 6.10, Chapter 6 Curious Math (Circles and Digits), Chapter 6 Math Game (Math Cat), Chapter 6 Task, Chapter 9 Getting Started, 9.1, Chapter 10 Getting Started, 10.1		B2.2 recall and demonstrate multiplication facts of 2, 5, and 10, and related division facts	B2.2 recall and demonstrate addition facts for numbers up to 20, and related subtraction facts	B2.2 recall and demonstrate addition facts for numbers up to 10, and related subtraction facts

Number: Mental Math

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations

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B2.3 use mental math strategies to multiply whole numbers by 10, 100, and 1000, divide whole numbers by 10, and add and subtract decimal tenths, and explain the strategies used	2.5, Chapter 2 Math Game (Getting to 10 000), 12.6, 12.7, 12.8 expectation partially addressed	6.2, Chapter 7, 7.6, 13.4, 13.5		B2.3 use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 1000, and explain the strategies used	B2.3 use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 50, and explain the strategies used	B2.3 use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 20, and explain the strategies used

Number: Addition and Subtraction

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
B2.4 represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 10 000 and of decimal tenths, using appropriate tools and strategies, including algorithms	Chapter 1 Mental Math (Adding with 5s), Chapter 2 Mental Math (Adding Tens, Hundreds, and Thousands), 4.1, 4.2, 4.3, 4.4, Chapter 4 Mental Math (Subtracting by Adding On), 4.5, 4.6, Chapter 4 Math Game (River Crossing), 4.7, Chapter 4 Curious Math (Hidden Digits), 4.8, Chapter 4 Task, Chapter 6 Mental Math (Adding the Middle), Chapter 10 Mental Math (Adding in Steps), 12.6, 12.7, 12.8	2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 4.1, 13.4, 13.5, 13.7	**Adding Whole Numbers** *Pathway 1:* Adding Three-Digit Numbers *Pathway 2:* Adding Two-Digit Numbers *Pathway 3:* Adding One-Digit Numbers **Subtracting Whole Numbers** *Pathway 1:* Subtracting Three-Digit Numbers *Pathway 2:* Subtracting Numbers to 100 *Pathway 3:* Subtracting Numbers to 20 **Mental Math** *Pathway 1:* Compensating *Pathway 2:* Regrouping *Pathway 3:* Relating to 5 or 10	B2.4 demonstrate an understanding of algorithms for adding and subtracting whole numbers by making connections to and describing the way other tools and strategies are used to add and subtract B2.5 represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 1000, using various tools and algorithms	B2.4 use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of whole numbers that add up to no more than 100	B2.4 use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of whole numbers that add up to no more than 50

Number: Multiplication and Division

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
B2.5 represent and solve problems involving the	2.5, Chapter 2 Math Game	6.2, 6.3, 6.5, 6.6, Chapter 7, 8.1, 8.2		B2.6 represent multiplication of	B2.5 represent multiplication as	B2.5 represent and solve equal-group

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multiplication of two- or three-digit whole numbers by one-digit whole numbers and by 10, 100, and 1000, using appropriate tools, including arrays	(Getting to 10 000), 6.5, 6.7, 6.8, 6.10, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, Chapter 6 Math Game (Greatest Product), 9.7, Chapter 9 Curious Math (Egyptian Multiplication), Chapter 9 Task			numbers up to 10 × 10 and division up to 100 ÷ 10, using a variety of tools and drawings, including arrays B2.7 represent and solve problems involving multiplication and division, including problems that involve groups of one-half, one-fourth, and one-third, using tools and drawings	repeated equal groups, including groups of one-half and one-fourth, and solve related problems, using various tools and drawings	problems where the total number of items is no more than 10, including problems in which each group is a half, using tools and drawings
B2.6 represent and solve problems involving the division of two- or three-digit whole numbers by one-digit whole numbers, expressing any remainder as a fraction when appropriate, using appropriate tools, including arrays	Chapter 10 Getting Started, 10.1, 10.2, 10.3, 10.4, 10.5, Chapter 5 Math Game (Remainder Hunt), 10.6, 10.7, 10.8, Chapter 10 Task	7.1, 7.3, 7.5, 8.3, 8.4		B2.6 represent multiplication of numbers up to 10 × 10 and division up to 100 ÷ 10, using a variety of tools and drawings, including arrays B2.7 represent and solve problems involving multiplication and division, including problems that involve groups of one-half, one-fourth, and one-third, using tools and drawings	B2.6 represent division of up to 12 items as the equal sharing of a quantity, and solve related problems, using various tools and drawings	B2.5 represent and solve equal-group problems where the total number of items is no more than 10, including problems in which each group is a half, using tools and drawings
B2.7 represent the relationship between the repeated addition of a unit fraction and the multiplication of that unit fraction by a whole number, using tools, drawings, and standard fractional notation		12.1		B2.8 represent the connection between the numerator of a fraction and the repeated addition of the unit fraction with the same denominator using various tools and		

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				drawings, and standard fractional notation		
B2.8 show simple multiplicative relationships involving whole-number rates, using various tools and drawings		8.1, 8.2, 8.3, 8.4		B2.9 use the ratios of 1 to 2, 1 to 5, and 1 to 10 to scale up numbers and to solve problems		

Algebra: Patterns

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
C1.1 identify and describe repeating and growing patterns, including patterns found in real-life contexts	Chapter 1 Getting Started, 1.1, 1.3, 1.4, 1.5, Chapter 1 Task, Chapter 14 Getting Started	16.3, 19.1	**Patterns** *Pathway 2:* Repeating Patterns	C1.1 identify and describe repeating elements and operations in a variety of patterns, including patterns found in real-life contexts	C1.1 identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts	C1.1 identify and describe the regularities in a variety of patterns, including patterns found in real-life contexts
C1.2 create and translate repeating and growing patterns using various representations, including tables of values and graphs	Chapter 1 Getting Started, 1.1, 1.3, 1.4, 1.5, 1.6, 1.7, Chapter 1 Curious Math (Pascal's Triangle), Chapter 1 Task, 6.8, 6.9, 6.10, Chapter 14 Getting Started	19.1	**Patterns** *Pathway 2:* Repeating Patterns	C1.2 create and translate patterns that have repeating elements, movements, or operations using various representations, including shapes, numbers, and tables of values	C1.2 create and translate patterns using various representations, including shapes and numbers	C1.2 create and translate patterns using movements, sounds, objects, shapes, letters, and numbers
C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating and growing patterns	1.1, 1.3, 1.4, Chapter 1 Math Game (Calculator Patterns), 1.5, 1.6, 1.7, Chapter 1 Curious Math (Pascal's Triangle), Chapter 1 Task, Chapter 6 Getting Started, 6.1	16.3, 19.1	**Patterns** *Pathway 2:* Repeating Patterns	C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns that have repeating elements, movements, or operations	C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns represented with shapes and numbers	C1.3 determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns
C1.4 create and describe patterns to illustrate relationships among	6.4, 6.5, 6.7, 6.9, 6.10, 8.6, 12.5, 12.6, 12.7	19.1	**Skip Counting** *Pathway 1:* Skip Counting to 1000	C1.4 create and describe patterns to illustrate relationships	C1.4 create and describe patterns to illustrate	C1.4 create and describe patterns to illustrate relationships

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				among whole numbers up to 1000	relationships among whole numbers up to 100	among whole numbers up to 50
whole numbers and decimal tenths	expectation partially addressed		*Pathway 2:* Skip Counting to 100 *Pathway 3:* Skip Counting to 20			

Algebra: Variables

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
C2.1 identify and use symbols as variables in expressions and equations	1.7, 1.8, Chapter 9 Curious Math (Sum and Product) expectation partially addressed	19.2	**Equality** *Pathway 1:* Equality Using Numbers to 100 *Pathway 2:* Equality Using Numbers to 20	C2.1 describe how variables are used, and use them in various contexts as appropriate	C2.1 identify when symbols are being used as variables, and describe how they are being used	C2.1 identify quantities that can change and quantities that always remain the same in real-life contexts

Algebra: Equalities and Inequalities

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
C2.2 solve equations that involve whole numbers up to 50 in various contexts, and verify solutions	1.7, 1.8, 6.4, 6.7, Chapter 9 Curious Math (Sum and Product) expectation partially addressed	19.3	**Equality** *Pathway 1:* Equality Using Numbers to 100 *Pathway 2:* Equality Using Numbers to 20	C2.2 determine whether given sets of addition, subtraction, multiplication, and division expressions are equivalent or not	C2.2 determine what needs to be added to or subtracted from addition and subtraction expressions to make them equivalent	C2.2 determine whether given pairs of addition and subtraction expressions are equivalent or not
C2.3 solve inequalities that involve addition and subtraction of whole numbers up to 20, and verify and graph the solutions		19.4		C2.3 identify and use equivalent relationships for whole numbers up to 1000, in various contexts	C2.3 identify and use equivalent relationships for whole numbers up to 100, in various contexts	C2.3 identify and use equivalent relationships for whole numbers up to 50, in various contexts

Algebra: Coding

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that		Coding Toolkit		C3.1 solve problems and create computational representations of mathematical situations by writing	C3.1 solve problems and create computational representations of mathematical situations by writing	C3.1 solve problems and create computational representations of mathematical situations by writing

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Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
involves sequential, concurrent, repeating, and nested events				and executing code, including code that involves sequential, concurrent, and repeating events	and executing code, including code that involves concurrent and sequential events	and executing code, including code that involves sequential events
C3.2 read and alter existing code, including code that involves sequential, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes		Coding Toolkit		C3.2 read and alter existing code, including code that involves sequential, concurrent, and repeating events, and describe how changes to the code affect the outcomes	C3.2 read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes	C3.2 read and alter existing code, including code that involves sequential events, and describe how changes to the code affect the outcomes

Data: Data Collection and Organization

Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
D1.1 describe the difference between qualitative and quantitative data, and describe situations where each would be used		18.1, 18.2		D1.1 sort sets of data about people or things according to two and three attributes, using tables and logic diagrams, including Venn, Carroll, and tree diagrams, as appropriate	D1.1 sort sets of data about people or things according to two attributes, using tables and logic diagrams, including Venn and Carroll diagrams	D1.1 sort sets of data about people or things according to one attribute, and describe rules used for sorting
D1.2 collect data from different primary and secondary sources to answer questions of interest that involve comparing two or more sets of data, and organize the data in frequency tables and stem-and-leaf plots	3.3, Chapter 3 Curious Math (Stem-and-Leaf Plots), 3.7, 3.8	18.1, 18.5, 18.6		D1.2 collect data through observations, experiments, and interviews to answer questions of interest that focus on qualitative and quantitative data, and organize the data using frequency tables	D1.2 collect data through observations, experiments, and interviews to answer questions of interest that focus on two pieces of information, and organize the data in two-way tally tables	D1.2 collect data through observations, experiments, and interviews to answer questions of interest that focus on a single piece of information; record the data using methods of their choice; and organize the data in tally tables

Data: Data Visualization

Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations

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Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
D1.3 select from among a variety of graphs, including multiple-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	Chapter 3 Getting Started, 3.1, 3.2, 3.4, 3.5, 3.8, Chapter 3 Task	18.2, 18.6	**Displaying Data** *Pathway 1:* Data: Many-to-One Correspondence *Pathway 2:* Data: One-to-One Correspondence *Pathway 3:* Concrete and Picture Graphs	D1.3 display sets of data, using many-to-one correspondence, in pictographs and bar graphs with proper sources, titles, and labels, and appropriate scales	D1.3 display sets of data, using one-to-one correspondence, in concrete graphs, pictographs, line plots, and bar graphs with proper sources, titles, and labels	D1.3 display sets of data, using one-to-one correspondence, in concrete graphs and pictographs with proper sources, titles, and labels
D1.4 create an infographic about a data set, representing the data in appropriate ways, including in frequency tables, stem-and-leaf plots, and multiple-bar graphs, and incorporating any other relevant information that helps to tell a story about the data	Chapter 3 Getting Started, 3.1, 3.2, 3.3, Chapter 3 Curious Math (Stem-and-Leaf Plots), 3.4, 3.8, Chapter 3 Task, Chapter 4 Task expectation partially addressed	18.3, 18.6	**Displaying Data** *Pathway 1:* Data: Many-to-One Correspondence *Pathway 2:* Data: One-to-One Correspondence *Pathway 3:* Concrete and Picture Graphs			

Data: Data Analysis

Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
D1.5 determine the mean and the median and identify the mode(s), if any, for various data sets involving whole numbers, and explain what each of these measures indicates about the data	Chapter 10 Curious Math (Finding the Mean) expectation partially addressed	18.4, 18.5, 18.6		D1.4 determine the mean and identify the mode(s), if any, for various data sets involving whole numbers, and explain what each of these measures indicates about the data	D1.4 identify the mode(s), if any, for various data sets presented in concrete graphs, pictographs, line plots, bar graphs, and tables, and explain what this measure indicates about the data	D1.4 order categories of data from greatest to least frequency for various data sets displayed in tally tables, concrete graphs, and pictographs
D1.6 analyse different sets of data presented in various ways, including	Chapter 3 Getting Started, 3.1, 3.2, 3.3, Chapter 3	18.2, 18.4, 18.5, 18.6	**Displaying Data** *Pathway 1:* Data: Many-to-One Correspondence	D1.5 analyse different sets of data presented in various ways,	D1.5 analyse different sets of data presented in various	D1.5 analyse different sets of data presented in various ways,

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in stem-and-leaf plots and multiple-bar graphs, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions	Curious Math (Stem-and-Leaf Plots), 3.4, 3.5, 3.8, Chapter 3 Task, Chapter 4 Task expectation partially addressed		*Pathway 2:* Data: One-to-One Correspondence *Pathway 3:*Concrete and Picture Graphs	including in frequency tables and in graphs with different scales, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions	ways, including in logic diagrams, line plots, and bar graphs, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions	including in tally tables, concrete graphs, and pictographs, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions

Data: Probability

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
D2.1 use mathematical language, including the terms "impossible", unlikely", equally likely", "likely", and "certain", to describe the likelihood of events happening, represent this likelihood on a probability line, and use it to make predictions and informed decisions	Chapter 13 Getting Started, 13.1, 13.2, 13.3, 13.4, 13.5, Chapter 13 Task	17.1		D2.1 use mathematical language including the terms "impossible", "unlikely", "equally likely", "likely", and "certain", to describe the likelihood of events happening, and use that likelihood to make predictions and informed decisions	D2.1 use mathematical language including the terms "impossible", "possible", and "certain" to describe the likelihood of complementary events happening, and use that likelihood to make predictions and informed decisions	D2.1 use mathematical language including the terms "impossible", "possible", and "certain", to describe the likelihood of events happening, and use that likelihood to make predictions and informed decisions
D2.2 make and test predictions about the likelihood that the mean, median, and mode(s) of a data set will be the same for data collected from different populations		18.4		D2.2 make and test predictions about the likelihood that the mean and the mode(s) of a data set will be the same for data collected from different populations	D2.2 make and test predictions about the likelihood that the mode(s) of a data set from one population will be the same for data collected from a different population	D2.2 make and test predictions about the likelihood that the categories in a data set from one population will have the same frequencies in data collected from a different population of the same size

Spatial Sense: Geometric Reasoning

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations

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Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
E1.1 identify geometric properties of rectangles, including the number of right angles, parallel and perpendicular sides, and lines of symmetry	Chapter 3 Mental Imagery (Dot-Paper Diagrams expectation partially addressed	16.1	**2-D Shapes** *Pathway 1:* Describing 2-D Shapes	E1.1 sort, construct, and identify cubes, prisms, pyramids, cylinders, and cones by comparing their faces, edges, vertices, and angles E1.2 compose and decompose various structures, and identify the two-dimensional shapes and three-dimensional objects that these structures contain E1.3 identify congruent lengths, angles, and faces of three-dimensional objects by mentally and physically matching them, and determine if the objects are congruent	E1.1 sort and identify two-dimensional shapes by comparing number of sides, side lengths, angles, and number of lines of symmetry E1.2 compose and decompose two-dimensional shapes, and show that the area of a shape remains constant regardless of how its parts are E1.3 identify congruent lengths and angles in two-dimensional shapes by mentally and physically matching them, and determine if the shapes are congruent	E1.1 sort three-dimensional objects and two-dimensional shapes according to one attribute at a time, and identify the sorting rule being used E1.2 construct three-dimensional objects, and identify two-dimensional shapes contained within structures and objects E1.3 construct and describe two-dimensional shapes and three-dimensional objects that have matching halves

Spatial Sense: Location and Movement						
Grade 4 Ontario expectations	**Nelson Mathematics 4**	**Math Path 4**	**Leaps and Bounds 3/4 Topics**	**Grade 3 Ontario expectations**	**Grade 2 Ontario expectations**	**Grade 1 Ontario expectations**
E1.2 plot and read coordinates in the first quadrant of a Cartesian plane, and describe the translations that move a point from one coordinate to another	14.1, Chapter 14 Math Game (Grid Hide and Seek) expectation partially addressed	16.5	**Movement and Location** *Pathway 1:* Moving on a Grid		E1.4 create and interpret simple maps of familiar places	E1.4 describe the relative locations of objects or people, using positional language
E1.3 describe and perform translations and reflections on a grid, and predict the results of these transformations	14.2, 14.4	16.2, 16.4	**Movement and Location** *Pathway 1:* Moving on a Grid	E1.4 give and follow multistep instructions involving movement from one location to another, including	E1.5 describe the relative positions of several objects and the movements needed to get from	E1.5 give and follow directions for moving from one location to another

Spatial Sense: Mass and Capacity				Spatial Sense: Length, Mass, and Capacity	Spatial Sense: Length	Spatial Sense: Attributes
Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	**Leaps and Bounds 3/4 Topics**	**Grade 3 Ontario expectations**	**Grade 2 Ontario expectations**	**Grade 1 Ontario expectations**
					distances and half- and quarter-turns	one object to another
				E2.1 use appropriate units of length to estimate, measure, and compare the perimeters of polygons and curved shapes, and construct polygons with a given perimeter E2.2 explain the relationships between millimetres, centimetres, metres, and kilometres as metric units of length, and use benchmarks for these units to estimate lengths	E2.1 choose and use non-standard units appropriately to measure lengths, and describe the inverse relationship between the size of a unit and the number of units needed E2.2 explain the relationship between centimetres and metres as units of length, and use benchmarks for these units to E2.3 measure and draw lengths in centimetres and metres, using a measuring tool, and recognize the impact of starting at points other than zero estimate lengths	E2.1 identify measurable attributes of two-dimensional shapes and three-dimensional objects, including length, area, mass, capacity, and angle
E2.1 explain the relationships between grams and kilograms as metric units of mass, and between litres and millilitres as metric units of capacity, and use benchmarks for these	11.6, 11.7, 11.8	9.2, 9.3	**Mass** *Pathway 1:* Mass: Using Grams *Pathway 2:* Mass: Using Kilograms *Pathway 3:* Mass: Using Non-Standard Units	E2.3 use non-standard units appropriately to estimate, measure, and compare capacity, and explain the effect that overfilling or underfilling, and gaps		E2.2 compare several everyday objects and order them according to length, area, mass, and capacity

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| units to estimate mass and capacity | | | **Capacity**
Pathway 1: Capacity: Using Litres
Pathway 2: Capacity: Non-Standard Units | between units, have on accuracy

E2.4 compare, estimate, and measure the mass of various objects, using a pan balance and non-standard units

E2.5 use various units of different sizes to measure the same attribute of a given item, and demonstrate that even though using different-sized units produces a different count, the size of the attribute remains the same | | |

Spatial Sense: The Metric System

Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
E2.2 use metric prefixes to describe the relative size of different metric units, and choose appropriate units and tools to measure length, mass, and capacity	5.1, 5.2, 5.3, 5.4, Chapter 5 Curious Math (Cutting and Measuring), Chapter 5 Mental Imagery (Estimating Length), Chapter 5 Task, 11.6, 11.7, 11.8, 12.8 expectation partially addressed	9.1, 9.2, 9.3	**Length** *Pathway 1:* Length: Standard Units *Pathway 2:* Length: Non-Standard Units **Mass** *Pathway 1:* Mass: Using Grams *Pathway 2:* Mass: Using Kilograms *Pathway 3:* Mass: Using Non-Standard Units **Capacity** *Pathway 1:* Capacity: Using Litres			

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			Pathway 2: Capacity: Non-Standard Units			
Spatial Sense: Time						
Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	**Leaps and Bounds 3/4 Topics**	**Grade 3 Ontario expectations**	**Grade 2 Ontario expectations**	**Grade 1 Ontario expectations**
E2.3 solve problems involving elapsed time by applying the relationships between different units of time	5.6, 5.7	11.2, 11.3, 11.4, 11.5	**Time** *Pathway 1:* Reading a Clock *Pathway 2:* Time: Using Standard Units *Pathway 3:* Time: Using Non-Standard Units	E2.6 use analog and digital clocks and timers to tell time in hours, minutes, and seconds	E2.4 use units of time, including seconds, minutes, hours, and non-standard units, to describe the duration of various events	E2.3 read the date on a calendar, and use a calendar to identify days, weeks, months, holidays, and seasons
Spatial Sense: Angles						
Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	**Leaps and Bounds 3/4 Topics**	**Grade 3 Ontario expectations**	**Grade 2 Ontario expectations**	**Grade 1 Ontario expectations**
E2.4 identify angles and classify them as right, straight, acute, or obtuse		15.1				
Spatial Sense: Area						
Grade 4 Ontario expectations	*Nelson Mathematics 4*	*Math Path 4*	**Leaps and Bounds 3/4 Topics**	**Grade 3 Ontario expectations**	**Grade 2 Ontario expectations**	**Grade 1 Ontario expectations**
E2.5 use the row and column structure of an array to measure the areas of rectangles and to show that the area of any rectangle can be found by multiplying its side lengths	Chapter 8 Math Game (Area Logic), 8.4, 8.6, Chapter 8 Task	14.1	**Area** *Pathway 1:* Area: Using Strategies *Pathway 2:* Area: Using Whole Units	E2.7 compare the areas of two-dimensional shapes by matching, covering, or decomposing and recomposing the shapes, and demonstrate that different shapes can have the same area E2.8 use appropriate non-standard units to measure area, and explain the effect that gaps and overlaps have on accuracy E2.9 use square centimetres (cm2) and		E2.2 compare several everyday objects and order them according to length, area, mass, and capacity

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Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
				square metres (m2) to estimate, measure, and compare the areas of various two-dimensional shapes, including those with curved sides		
E2.6 apply the formula for the area of a rectangle to find the unknown measurement when given two of the three		14.1				

Financial Literacy: Money Concepts

Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
F1.1 identify various methods of payment that can be used to purchase goods and services				F1.1 estimate and calculate the change required for various simple cash transactions involving whole-dollar amounts and amounts of less than one dollar	F1.1 identify different ways of representing the same amount of money up to Canadian 200¢ using various combinations of coins, and up to $200 using various combinations of $1 and $2 coins and $5, $10, $20, $50, and $100 bills	F1.1 identify the various Canadian coins up to 50¢ and coins and bills up to $50, and compare their values
F1.2 estimate and calculate the cost of transactions involving multiple items priced in whole-dollar amounts, not including sales tax, and the amount of change needed when payment is made in cash, using mental math		10.1, 10.2				

Financial Literacy: Financial Management

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Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
F1.3 explain the concepts of spending, saving, earning, investing, and donating, and identify key factors to consider when making basic decisions related to each						
F1.4 explain the relationship between spending and saving, and describe how spending and saving behaviours may differ from one person to another						
Financial Literacy: Consumer and Civic Awareness						
Grade 4 Ontario expectations	Nelson Mathematics 4	Math Path 4	Leaps and Bounds 3/4 Topics	Grade 3 Ontario expectations	Grade 2 Ontario expectations	Grade 1 Ontario expectations
F1.5 describe some ways of determining whether something is reasonably priced and therefore a good purchase						

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