Correlation of Mathematics Readers Grade 4 to the Ontario Mathematics Curriculum

Number Sense and Numeration

OVERALL EXPECTATION
A.3.
Students will solve problems involving the addition, subtraction, multiplication, and division of single- and multi-digit whole numbers, and involving the addition and subtraction of decimal numbers to tenths and money amounts, using a variety of strategies.

Correlated Lessons:
All About Sharks Reader Objective 57: Multiplies and divides whole numbers

The Bread Book Reader; The Bake Sale Reader Objective 25: Adds, subtracts, multiplies, and divides whole numbers/integers

The Bread Book; The Bake Sale Page 36, 41 Objective 01: Students will multiply and divide whole numbers and fractions.

SPECIFIC EXPECTATION
A.3.10.
Use estimation when solving problems involving the addition, subtraction, and multiplication of whole numbers, to help judge the reasonableness of a solution

Correlated Lessons:
Natural Disasters Reader; People Who Predict Reader Objective 31: Uses specific strategies (e.g., rounding) to estimate computations and to check the reasonableness of computational results

SPECIFIC EXPECTATION
A.4.1.
Describe relationships that involve simple whole-number multiplication

Correlated Lessons:
All About Sharks Reader Objective 57: Multiplies and divides whole numbers

The Bread Book Reader; The Bake Sale Reader Objective 25: Adds, subtracts, multiplies, and divides whole numbers/integers

The Bread Book; The Bake Sale Page 36, 41 Objective 01: Students will multiply and divide whole numbers and fractions.

Measurement

OVERALL EXPECTATION
B.1.
Students will estimate, measure, and record length, perimeter, area, mass, capacity, volume, and elapsed time, using a variety of strategies

Correlated Lessons:
Life in the Ocean Layers Reader; All About Sharks Reader Objective 54: Understands and applies the basic measures of length, weight, and volume

Olympic Technology Reader; Hosting the Olympic Summer Games Reader Objective 51: Solves real-world problems involving number operations--addition and subtraction (e.g., determines elapsed time and timed races)

SPECIFIC EXPECTATION
B.1.4.
Estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in five-minute intervals, hours, days, weeks, months, or years

Correlated Lessons:
Olympic Technology Reader; Hosting the Olympic Summer Games Reader Objective 51: Solves real-world problems involving number operations--addition and subtraction (e.g., determines elapsed time and timed races)

SPECIFIC EXPECTATION
B.1.8.
Estimate, measure using concrete materials, and record volume, and relate volume to the space taken up by an object

Correlated Lessons:
Life in the Ocean Layers Reader; All About Sharks Reader Objective 54: Understands and applies the basic measures of length, weight, and volume

SPECIFIC EXPECTATION
B.2.1.
Describe, through investigation, the relationship between various units of length (i.e., millimetre, centimetre, decimetre, metre, kilometre);

Correlated Lessons:
Life in the Ocean Layers Reader Objective 56: Selects and uses appropriate units of measurement, according to type and size of unit

Life in the Ocean Layers; All About Sharks Page 180, 185 Objective 19: Students will select and use appropriate units of measurement, according to the type and size of the unit. (length, height, weight)

B.2.8.
Select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram) and the most appropriate standard unit to measure the capacity of a container (i.e., millilitre, litre)

Correlated Lessons:
Life in the Ocean Layers Reader Objective 56: Selects and uses appropriate units of measurement, according to type and size of unit

Life in the Ocean Layers; All About Sharks Page 180, 185 Objective 19: Students will select and use appropriate units of measurement, according to the type and size of the unit. (length, height, weight)

Geometry and Spatial Sense

OVERALL EXPECTATION
C.1.
Students will identify quadrilaterals and three-dimensional figures and classify them by their geometric properties, and compare various angles to benchmarks

Correlated Lessons:
Shapes in Our World Reader; Building Houses Reader Objective 42: Understands basic properties/characteristics of figures/shapes (e.g., three-dimensionality, lines of symmetry, number of faces or vertices, dimensions)

Shapes in Our World Reader; Building Houses Reader; Looking at Maps Reader; Journeys: Land, Air, Sea Reader Objective 41: Knows basic geometric language/properties for describing, classifying, and naming shapes/figures (e.g., sphere, cone, cube)

Shapes in Our World; Building Houses Page 108, 113 Objective 10: Students will understand, describe, and classify basic properties/characteristics of three-dimensional figures/shapes (3-D, 3-dimensional)

OVERALL EXPECTATION
C.3.
Students will identify and describe the location of an object, using a grid map, and reflect two-dimensional shapes

Correlated Lessons:
Looking at Maps; Journeys: Land, Air, Sea Page 132, 137 Objective 13: Students will understand how coordinate planes and maps aid in direction and finding particular locations and place coordinates on the plane accurately

Patterns Around Us Reader Objective 37: Uses motion geometry (transformations) (e.g., turns, flips, slides, rotations, reflections, translations) to understand geometric relationships

SPECIFIC EXPECTATION
C.1.5.
Identify and describe prisms and pyramids, and classify them by their geometric properties (i.e., shape of faces, number of edges, number of vertices), using concrete materials

Correlated Lessons:

Shapes in Our World Reader; Building Houses Reader Objective 42: Understands basic properties/characteristics of figures/shapes (e.g., three-dimensionality, lines of symmetry, number of faces or vertices, dimensions)

Shapes in Our World Reader; Building Houses Reader; Looking at Maps Reader; Journeys: Land, Air, Sea Reader Objective 41: Knows basic geometric language/properties for describing, classifying, and naming shapes/figures (e.g., sphere, cone, cube)

Shapes in Our World; Building Houses Page 108, 113 Objective 10: Students will understand, describe, and classify basic properties/characteristics of three-dimensional figures/shapes (3-D, 3-dimensional)

SPECIFIC EXPECTATION
C.3.1.
Identify and describe the general location of an object using a grid system

Correlated Lessons:

Looking at Maps; Journeys: Land, Air, Sea Page 132, 137 Objective 13: Students will understand how coordinate planes and maps aid in direction and finding particular locations and place coordinates on the plane accurately

SPECIFIC EXPECTATION
C.3.2.
Identify, perform, and describe reflections using a variety of tools

Correlated Lessons:

Patterns Around Us Reader Objective 37: Uses motion geometry (transformations) (e.g., turns, flips, slides, rotations, reflections, translations) to understand geometric relationships

SPECIFIC EXPECTATION
C.3.3.
Create and analyse symmetrical designs by reflecting a shape, or shapes, using a variety of tools, and identify the congruent shapes in the designs

Correlated Lessons:

Patterns Around Us Reader Objective 37: Uses motion geometry (transformations) (e.g., turns, flips, slides, rotations, reflections, translations) to understand geometric relationships

Patterning and Algebra

OVERALL EXPECTATION
D.1.
Students will describe, extend, and create a variety of numeric and geometric patterns, make predictions related to the patterns, and investigate repeating patterns involving reflections

Correlated Lessons:
Patterns Around Us Reader; Patterns in Nature Reader Objective 35: Recognizes a variety of number patterns (e.g., basic linear patterns such as [2,4,6,8&]; simple repeating, growing patterns) and the rules that explain them

Patterns Around Us; Patterns in Nature Page 84, 89 Objective 07: Students will recognize, analyze, and extend a wide variety of numerical and shape patterns and verbalize the rules that explain them.

Patterns In Nature Reader Objective 39: Under that a simple numerical or shape pattern can be represented in different ways (ie, geometrically or numerically; the pattern of numbers [7,14,21,28&] is equivalent to the mathematical relationship 7 X 9)

SPECIFIC EXPECTATION
D.1.1.
Extend, describe, and create repeating, growing, and shrinking number patterns

Correlated Lessons:
Patterns Around Us Reader; Patterns in Nature Reader Objective 35: Recognizes a variety of number patterns (e.g., basic linear patterns such as [2,4,6,8&]; simple repeating, growing patterns) and the rules that explain them

Patterns Around Us; Patterns in Nature Page 84, 89 Objective 07: Students will recognize, analyze, and extend a wide variety of numerical and shape patterns and verbalize the rules that explain them.

Patterns In Nature Reader Objective 39: Under that a simple numerical or shape pattern can be represented in different ways (ie, geometrically or numerically; the pattern of numbers [7,14,21,28&] is equivalent to the mathematical relationship 7 X 9)

SPECIFIC EXPECTATION
D.1.2.
Connect each term in a growing or shrinking pattern with its term number, and record the patterns in a table of values that shows the term number and the term

Correlated Lessons:
Patterns Around Us Reader; Patterns in Nature Reader Objective 35: Recognizes a variety of number patterns (e.g., basic linear patterns such as [2,4,6,8&]; simple repeating, growing patterns) and the rules that explain them

Patterns Around Us; Patterns in Nature Page 84, 89 Objective 07: Students will recognize, analyze, and extend a wide variety of numerical and shape patterns and verbalize the rules that explain them.

Patterns In Nature Reader Objective 39: Under that a simple numerical or shape pattern can be represented in different ways (ie, geometrically or numerically; the pattern of numbers [7,14,21,28&] is equivalent to the mathematical relationship 7 X 9)

SPECIFIC EXPECTATION
D.1.3.
Create a number pattern involving addition, subtraction, or multiplication, given a pattern rule expressed in words

Correlated Lessons:
Patterns Around Us Reader; Patterns in Nature Reader Objective 35: Recognizes a variety of number patterns (e.g., basic linear patterns such as [2,4,6,8&]; simple repeating, growing patterns) and the rules that explain them

Patterns Around Us; Patterns in Nature Page 84, 89 Objective 07: Students will recognize, analyze, and extend a wide variety of numerical and shape patterns and verbalize the rules that explain them.

Patterns In Nature Reader Objective 39: Under that a simple numerical or shape pattern can be represented in different ways (ie, geometrically or numerically; the pattern of numbers [7,14,21,28&] is equivalent to the mathematical relationship 7 X 9)

SPECIFIC EXPECTATION
D.1.4.
Make predictions related to repeating geometric and numeric patterns

Correlated Lessons:
Patterns Around Us Reader; Patterns in Nature Reader Objective 35: Recognizes a variety of number patterns (e.g., basic linear patterns such as [2,4,6,8&]; simple repeating, growing patterns) and the rules that explain them

Patterns Around Us; Patterns in Nature Page 84, 89 Objective 07: Students will recognize, analyze, and extend a wide variety of numerical and shape patterns and verbalize the rules that explain them.

Patterns In Nature Reader Objective 39: Under that a simple numerical or shape pattern can be represented in different ways (ie, geometrically or numerically; the pattern of numbers [7,14,21,28&] is equivalent to the mathematical relationship 7 X 9)

SPECIFIC EXPECTATION
D.1.5.
Extend and create repeating patterns that result from reflections, through investigation using a variety of tools

Correlated Lessons:
Patterns Around Us Reader Objective 37: Uses motion geometry (transformations) (e.g., turns, flips, slides, rotations, reflections, translations) to understand geometric relationships

D.2.1.

Determine, through investigation, the inverse relationship between multiplication and division

Correlated Lessons:
The Bread Book Reader Objective 29: Understands the properties of and the relationships among multiplication and division

SPECIFIC EXPECTATION
D.2.3.

Identify, through investigation, and use the commutative property of multiplication to facilitate computation with whole numbers

Correlated Lessons:
The Bread Book Reader Objective 29: Understands the properties of and the relationships among multiplication and division

SPECIFIC EXPECTATION
D.2.4.

Identify, through investigation, and use the distributive property of multiplication over addition to facilitate computation with whole numbers

Correlated Lessons:
The Bread Book Reader Objective 29: Understands the properties of and the relationships among multiplication and division

Data Management and Probability

OVERALL EXPECTATION
E.1.

Students will collect and organize discrete primary data and display the data using charts and graphs, including stem-and-leaf plots and double bar graphs

Correlated Lessons:
Animal Investigations Reader Objective 60: Understands that data comes in many different forms and that collecting, organizing, and displaying data can be done in several ways

Eco-Predictions Reader; Animal Investigations Reader Objective 59: Organizes, analyzes, and displays data in simple bar graphs and frequency tables

Eco-Predictions; Animal Investigations Page 204, 209 Objective 22: Students will understand that data comes in many different forms and that collecting, organizing, analyzing, and displaying data can be done in many ways.

OVERALL EXPECTATION
E.2.
Students will read, describe, and interpret primary data and secondary data presented in charts and graphs, including stem-and-leaf plots and double bar graphs

Correlated Lessons:
Eco-Predictions Reader; Animal Investigations Reader Objective 59: Organizes, analyzes, and displays data in simple bar graphs and frequency tables

Natural Disasters Reader; People Who Predict Reader; Patterns Around Us Reader; Eco-Predictions Reader; Animal Investigations Objective 33: Reads, analyzes, and interprets simple bar graphs and frequency tables

Patterns In Nature Reader; Shapes in Our World Reader Objective 38: Organizes, analyzes, and displays data in a frequency table

SPECIFIC EXPECTATION
E.1.2.
Collect and organize discrete primary data and display the data in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools

Correlated Lessons:
Animal Investigations Reader Objective 60: Understands that data comes in many different forms and that collecting, organizing, and displaying data can be done in several ways

Eco-Predictions Reader; Animal Investigations Reader Objective 59: Organizes, analyzes, and displays data in simple bar graphs and frequency tables

Eco-Predictions; Animal Investigations Page 204, 209 Objective 22: Students will understand that data comes in many different forms and that collecting, organizing, analyzing, and displaying data can be done in many ways.

SPECIFIC EXPECTATION
E.2.1.
Read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including stem-and-leaf plots and double bar graphs)

Correlated Lessons:
Eco-Predictions Reader; Animal Investigations Reader Objective 59: Organizes, analyzes, and displays data in simple bar graphs and frequency tables

Natural Disasters Reader; People Who Predict Reader; Patterns Around Us Reader; Eco-Predictions Reader; Animal Investigations Objective 33: Reads, analyzes, and interprets simple bar graphs and frequency tables

Patterns In Nature Reader; Shapes in Our World Reader Objective 38: Organizes, analyzes, and displays data in a frequency table

E.2.4.

Compare similarities and differences between two related sets of data, using a variety of strategies

Correlated Lessons:
Eco-Predictions Reader Objective 61: Uses models (e.g., tables, charts, and graphs) to identify, order, and compare numbers/data