

Correlation of Mathematics Readers Level 4 to

Québec Education Program Progression of Learning

**Arithmetic: Understanding and writing numbers**

**Natural numbers less than 100,000**

**Essential Knowledge**

Describes number patterns, using his/her own words and appropriate mathematical vocabulary (e.g. even numbers, odd numbers, square numbers, triangular numbers, prime numbers, composite numbers)

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)

**Arithmetic: Meaning of operations involving numbers**

**Natural numbers less than 100,000**

**Essential Knowledge**

Rectangular arrays, repeated addition, Cartesian product, area, volume, repeated subtraction, sharing, number of times x goes into y, and comparisons (using objects, diagrams or equations)

Correlated Lessons:
The Bread Book Reader; The Bake Sale Reader Objective 26: Knows the language of basic operations (e.g., multiplication, division, addition, remainder, fraction)

**Essential Knowledge**

Determines numerical equivalencies using relationships between operations (the four operations), the commutative property of addition and multiplication and the associative property

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

**Decimals up to hundredths**

**Essential Knowledge**

Determines numerical equivalencies using the relationship between operations (addition and subtraction), the commutative property of addition and the associative property

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

**Arithmetic: Operations involving numbers**

**Natural numbers (based on the benchmarks for each cycle)**

**Essential Knowledge**

Approximates the result of: An addition or subtraction involving natural numbers

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

**Essential Knowledge**

Approximates the result of: Any of the four operations involving natural numbers

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

Natural Disasters; People Who Predict Page 60, 65 Objective 04: Students will estimate to compute answers/numbers or make predictions.

**Develops processes for mental computation**

**Essential Knowledge**

Uses his/her own processes to determine the sum or difference of two natural numbers

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

**Essential Knowledge**

Uses his/her own processes to determine the product or quotient of two natural numbers

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.

**Essential Knowledge**

Using his/her own words and mathematical language that is at an appropriate level for the cycle, describes: Non-numerical patterns (e.g. series of colours, shapes, sounds, gestures)

Correlated Lessons:
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)

**Essential Knowledge**

Using his/her own words and mathematical language that is at an appropriate level for the cycle, describes: Numerical patterns (e.g. number rhymes, tables and charts)

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)

**Essential Knowledge**

Using his/her own words and mathematical language that is at an appropriate level for the cycle, describes: Series of numbers and family of operations

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)

**Essential Knowledge**

Adds new terms to a series when the first three terms or more are given

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.

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**Geometry**

**Space**

**Essential Knowledge**

Locates objects in a plane

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

**Essential Knowledge**

Locates points in a Cartesian plane: In the first quadrant

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

**Solids**

**Essential Knowledge**

Identifies the main solids (e.g. spheres, cones, cubes, cylinders, prisms, pyramids)

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)

**Plane figures**

**Essential Knowledge**

Identifies plane figures (square, rectangle, triangle, rhombus and circle)

Correlated Lessons:
Objective 46: Knows basic geometric language/properties for describing, classifying, and naming shapes (e.g., pentagon, square, circle, triangle, diamond)

**Essential Knowledge**

Describes plane figures (square, rectangle, triangle and rhombus)

Correlated Lessons:
Objective 46: Knows basic geometric language/properties for describing, classifying, and naming shapes (e.g., pentagon, square, circle, triangle, diamond)

**Essential Knowledge**

Describes convex and non-convex polygons

Correlated Lessons:
Objective 46: Knows basic geometric language/properties for describing, classifying, and naming shapes (e.g., pentagon, square, circle, triangle, diamond)

**Frieze patterns and tessellations**

**Essential Knowledge**

Observes and produces patterns using geometric figures

Correlated Lessons:
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)

**Statistics**

**Essential Knowledge**

Collects, describes and organizes data (classifies or categorizes) using tables

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.

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

**Interprets data using**

**Essential Knowledge**

A table, a bar graph, a pictograph and a broken-line graph

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

**Displays data using**

**Essential Knowledge**

A table, a bar graph, a pictograph and a broken-line graph

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

**Probability**

**Essential Knowledge**

When applicable, recognizes variability in possible outcomes (uncertainty)

Correlated Lessons:
Natural Disasters Reader; People Who Predict Reader Objective 34: Understands that the word chance refers to the likelihood of an event (simple probability)

**Essential Knowledge**

Certain, possible or impossible outcome

Correlated Lessons:
Natural Disasters Reader; People Who Predict Reader Objective 34: Understands that the word chance refers to the likelihood of an event (simple probability)

**Essential Knowledge**

More likely, just as likely, less likely event

Correlated Lessons:
Natural Disasters Reader; People Who Predict Reader Objective 34: Understands that the word chance refers to the likelihood of an event (simple probability)

**Essential Knowledge**

Distinguishes between prediction and outcome

Correlated Lessons:
Natural Disasters Reader; People Who Predict Reader Objective 34: Understands that the word chance refers to the likelihood of an event (simple probability)