

## École Boundary Elementary School – Math Scope and Sequence

### Big Ideas

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
Numbers represent quantities that can be decomposed into smaller parts	Numbers to 20 represent quantities that can be decomposed into 10s and 1s	Numbers to 100 represent quantities that can be decomposed into 10s and 1s	Fractions are a type of number that can represent quantities	Fractions and decimals are types of numbers that can represent quantities	Numbers describe quantities that can be represented by equivalent fractions	Mixed numbers and decimal numbers represent quantities that can be decomposed into parts and wholes	Decimals, fractions, and percents are used to represent and describe parts and wholes of numbers
One-to-one correspondence and a sense of 5 and 10 are essential for fluency with numbers	Addition and subtraction with numbers to 10 can be modelled concretely, pictorially, and symbolically to develop computational fluency	Development of computational fluency in addition and subtraction with numbers to 100 requires an understanding of place value	Development of computational fluency in addition, subtraction, multiplication, and division of whole numbers requires flexible decomposing and composing	Development of computational fluency and multiplicative thinking requires analysis of patterns and relations in multiplication and division	Computational fluency and flexibility with numbers extend to operations with larger (multi-digit) numbers	Computational fluency and flexibility with numbers extend to operations with whole numbers and decimals	Computational fluency and flexibility with numbers extend to operations with integers and decimals
Repeating elements in patterns can be identified	Repeating elements in patterns can be identified	The regular change in increasing patterns can be identified and used to make generalizations	Regular increases and decreases in patterns can be identified and used to make generalizations	Regular changes in patterns can be identified and represented using tools and tables	Identified regularities in number patterns can be expressed in tables	Linear relations can be identified and represented using expressions with variables and line graphs and can be used to form generalizations	Linear relations can be represented in many connected ways to identify regularities and make generalizations
Objects have attributes that can be described, measured, and compared	Objects and shapes have attributes that can be described, measured, and compared	Objects and shapes have attributes that can be described, measured, and compared	Standard units are used to describe, measure, and compare attributes of objects' shapes	Polygons are closed shapes with similar attributes that can be described, measured, and compared	Closed shapes have area and perimeter that can be described, measured, and compared	Properties of objects and shapes can be described, measured, and compared using volume, area, perimeter, and angles	The constant ratio between the circumference and diameter of circles can be used to describe, measure, and compare spatial relationships
Familiar events can be described as likely or unlikely	Concrete graphs help us to compare and interpret data and show one-to-one correspondence	Concrete items can be represented, compared, and interpreted pictorially in graphs	The likelihood of possible outcomes can be examined, compared, and interpreted	Analyzing and interpreting experiments in data probability develops an understanding of chance	Data represented in graphs can be used to show many-to-one correspondence	Data from the results of an experiment can be used to predict the theoretical probability of an event and to compare and interpret	Data from circle graphs can be used to illustrate proportion and to compare and interpret

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**Curricular Competencies**

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	
Reasoning and Analyzing	Use reasoning to explore and make connections	Use reasoning to explore and make connections	Use reasoning to explore and make connections	Use reasoning to explore and make connections	Use reasoning to explore and make connections	Use reasoning to explore and make connections	Use reasoning and logic to explore, analyze, and apply mathematical ideas	Use reasoning and logic to explore, analyze, and apply mathematical ideas	
							Use logic and patterns to solve puzzles and play games	Use logic and patterns to solve puzzles and play games	
	Estimate reasonably	Estimate reasonably	Estimate reasonably	Estimate reasonably	Estimate reasonably	Estimate reasonably	Estimate reasonably	Estimate reasonably	
	Develop mental math strategies and abilities to make sense of quantities	Develop mental math strategies and abilities to make sense of quantities	Develop mental math strategies and abilities to make sense of quantities	Develop mental math strategies and abilities to make sense of quantities	Develop mental math strategies and abilities to make sense of quantities	Develop mental math strategies and abilities to make sense of quantities	Develop mental math strategies and abilities to make sense of quantities	Demonstrate and apply mental math strategies	Demonstrate and apply mental math strategies
	Use technology to explore mathematics	Use technology to explore mathematics	Use technology to explore mathematics	Use technology to explore mathematics	Use technology to explore mathematics	Use technology to explore mathematics	Use technology to explore mathematics	Use tools or technology to explore and create patterns and relationships, and test conjectures	Use tools or technology to explore and create patterns and relationships, and test conjectures
	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	Model mathematics in contextualized experiences	
Understanding and Solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Apply multiple strategies to solve problems in both abstract and contextualized situations	Apply multiple strategies to solve problems in both abstract and contextualized situations	

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	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts	Visualize to explore mathematical concepts
	Develop and use multiple strategies to engage in problem solving	Develop and use multiple strategies to engage in problem solving	Develop and use multiple strategies to engage in problem solving	Develop and use multiple strategies to engage in problem solving	Develop and use multiple strategies to engage in problem solving	Develop and use multiple strategies to engage in problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving	Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving
	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures	Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures
Communicating and Representing	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways	Communicate mathematical thinking in many ways
	Use mathematical	Use mathematical	Use mathematical	Use mathematical	Use mathematical	Use mathematical	Use mathematical	Use mathematical

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	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions	vocabulary and language to contribute to mathematical discussions
	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions	Explain and justify mathematical ideas and decisions
	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms	Represent mathematical ideas in concrete, pictorial, and symbolic forms
Connecting and Reflecting	Reflect on mathematical thinking	Reflect on mathematical thinking	Reflect on mathematical thinking	Reflect on mathematical thinking	Reflect on mathematical thinking	Reflect on mathematical thinking	Reflect on mathematical thinking	Reflect on mathematical thinking
	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests	Connect mathematical concepts to each other and to other areas and personal interests
							Use mathematical arguments to support personal choices	Use mathematical arguments to support personal choices
	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts

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**Content**

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
Number concepts to 10	Number concepts to 20	Number concepts to 100	Number concepts to 1000	Number concepts to 10 000	Number concepts to 1 000 000	Small to large numbers (thousandths to billions)	
Ways to make 5	Ways to make 10	Benchmarks of 25, 50, and 100 and personal referents	Fraction Concepts	Ordering and comparing fractions  Decimals to hundredths  Addition and subtraction of decimals to hundredths	Equivalent fractions  Decimals to thousandths  Whole-number, fraction, and decimal benchmarks  Addition and subtraction of decimals to thousandths	Improper fractions and mixed numbers  Introduction to ratios  Whole-number percents and percentage discounts  Multiplication and division of decimals	Relationships between decimals, fractions, ratios, and percents  Operations with decimals (addition, subtraction, multiplication, division, and order of operations)
Decomposition of numbers to 10	Addition and subtraction to 20 (understanding of operation and process)	Addition and subtraction facts to 20 (introduction of computational strategies)	Addition and subtraction facts to 20 (emerging computational fluency)	Addition and subtraction facts to 20 (developing computational fluency)  Multiplication and division facts to 100 (introductory computational strategies)	Addition and subtraction facts to 20 (extending computational fluency)  Multiplication and division facts to 100 (emerging computational fluency)	Multiplication and division facts to 100 (developing computational fluency)	Multiplication and division facts to 100 (extending computational fluency)
Repeating patterns with two or three elements	Repeating patterns with multiple elements and attributes	Addition and subtraction to 100	Addition and subtraction to 1000	Addition and subtraction to 10 000  Multiplication of two- or three- digit	Addition and subtraction of whole numbers to 1 000 000  Multiplication and division to three digits,	Order of operations with whole numbers  Factors and multiples – greatest common	Operations with <b>integers</b> (addition, subtraction, multiplication,

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			Multiplication and division concepts	numbers by one-digit numbers	including division with remainders	factor and least common multiple	division, and order of operations)
Change in quantity to 10, using concrete materials	Change in quantity to 20, concretely and verbally	Repeating and increasing patterns	Increasing and decreasing patterns  Pattern rules using words and numbers, based on concrete experiences	Increasing and decreasing patterns, using tables and charts	Rules for increasing and decreasing patterns with words, numbers, symbols, and variables	Increasing and decreasing patterns, using expressions, tables, and graphs as functional relationships	Discrete linear relations, using expressions, tables, and graphs
Equality as a balance and inequality as an imbalance	Meaning of equality and inequality	Change in quantity using pictorial and symbolic representation  Symbolic representation of equality and inequality	One-step addition and subtraction equations with an unknown number	Algebraic relationships among quantities  One-step equations with an unknown number, using all operations	One-step equations with variables	One-step equations with whole-number coefficients and solutions	Two-step equations with whole-number coefficients, constants, and solutions
Direct comparative measurement (eg. Linear, mass, capacity)	Direct measurement with non-standard units (non-uniform and uniform)	Direct linear measurement, introducing standard metric units	Measurement, using standard units (linear, mass, and capacity)  Time concepts	How to tell time with analog and digital clocks, using 12- and 24- hour clocks	Duration, using measurement of time		
Single attributes of 2D and 3D objects	Comparison of 2D shapes and 3D objects	Multiple attributes of 2D shapes and 3D objects	Construction of 3D objects	Regular and irregular polygons  Perimeter of regular and irregular shapes  Line symmetry	Area measurement of squares and rectangles  Relationship between area and perimeter  Classification of prisms and pyramids	Perimeter of complex shapes  Area of triangles, parallelograms, and trapezoids  Angle measurement and classification  Volume and capacity Triangles	Volume of rectangular prisms and cylinders  Circumference and area of circles

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Concrete or pictorial graphs as a visual tool for the class	Concrete graphs using one-to-one correspondence	Pictorial representation of concrete graphs using one-to-one correspondence	One-to-one correspondence with bar graphs, pictographs, charts, and tables	One-to-one correspondence and many-to-one correspondence, using bar graphs and pictographs	One-to-one correspondence and many-to-one correspondence, using double bar graphs  Single transformations	Line graphs  Combinations of transformations	Cartesian coordinates and graphing  Circle graphs  Combinations of transformations
Likelihood of familiar life events	Likelihood of familiar life events using comparative language	Likelihood of familiar life events, using comparative language	Likelihood of simulated events, using comparative language	Probability experiments	Probability experiments, single events or outcomes	Single-outcome probability, both theoretical and experimental	Experimental probability with two independent events
Financial literacy – attributes of coins and financial role-play	Financial literacy – values of coins and monetary exchanges	Financial literacy – coin combinations to 100 cents, and spending and saving	Financial literacy – fluency with coins and bills to 100 dollars, and earning and payment	Financial literacy – monetary calculations, including making change with amounts to 100 dollars and making simple financial decisions	Financial literacy – monetary calculations, including making change with amounts to 1000 dollars and developing simple financial plans	Financial literacy – simple budgeting and consumer math	Financial literacy – financial percentage