Linking ON Math Curriculum to Binogi: GRADE 7 Examples

A. SEL Skills	B. Number	C. Algebra	D. Data	E. Spatial Sense	F. Financial Literacy

Strand	Overall Expectations Category	Overall Expectation	Specific Expectation Category	Specific Expectation	Binogi Video
Social-Emotional Learning (SEL) Skills in Mathematics and the Mathematical Processes	A1. SEL Skills and the Mathematical Processes	apply, to the best of their ability, a variety of social-emotional learning skills to support their use of the mathematical processes and their learning in connection with the expectations in the other five strands of the mathematics curriculum	Mathematical Processes	- problem solving - reasoning and proving - reflecting - connecting - communication - representing - selecting tools and strategies	Problem Solving in Mathematics Is the Answer Reasonable?
Number	B1. Number Sense	demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life	B1.2	identify and represent perfect squares, and determine their square roots, in various contexts	Introduction to Exponents Square Roots
			B1.4	use equivalent fractions to simplify fractions, when appropriate, in various contexts	Expanding ans Reducing Fractions - Introduction Expanding and Simplifying Fractions - More Examples es
			B1.7	convert between fractions, decimal numbers, and percents, in various contexts	Fractions, Decimal Numbers and Percent

	B2. Operations	use knowledge of numbers and operations to solve mathematical problems encountered in everyday life	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	The Four Arthmetical Operations Order of Operations
			B2.2	understand and recall commonly used percents, fractions, and decimal equivalents	Whole, Half, Quarter, Fifth and Tenth
			B2.4	use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of integers	Addition and Subtraction with Negative Numbers
			B2.7	evaluate and express repeated multiplication of whole numbers using exponential notation, in various contexts	Introduction to Exponents
			B2.8	multiply and divide fractions by fractions, using tools in various contexts	Multiplication with Fractions Division with Fractions
			B2.9	multiply and divide decimal numbers by decimal numbers, in various contexts	Stacking Multiplications 6 - decimals Division with Decimal Numbers

			B2.10	identify proportional and non-proportional situations and apply proportional reasoning to solve problems	Proportionality
Algebra	C1. Patterns and Relationships	identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts	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	Patterns Number Sequencess Proportionality Slope of a Line Linear Equation with a Constant Term
			C1.2	create and translate repeating, growing, and shrinking patterns involving whole numbers and decimal numbers using various representations, including algebraic expressions and equations for linear growing patterns	The Coordinates of a Point Linear Equations Algebraic Expressions
			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	Linear Equations
	C2. Equations and Inequalities	demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts	C2.1	add and subtract monomials with a degree of 1 that involve whole numbers, using tools	Working with Algebraic Expressions - Introductions
			C2.3	solve equations that involve multiple terms, whole numbers, and decimal numbers in various contexts, and verify solutions	Introduction to Equations s Solving Equations using the Index Finger Method Solving Equations using the Balancing Method

| | | C3. Coding | solve problems and create computational representations of mathematical situations using coding concepts and skills | C3.1 | solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that involves conditional statements and other control structures | Variables: Introduction
Variables: more examples [OBJ]

Variables: Introduction (Python programming)

Variables: More Examples (Python programming)[OBJ]

Variables: Introduction (JavaScript programming)[OBJ]

Variables: More Examples (JavaScript programming)

If (programming)

If Else (programming)[OBJ]

Nested If Else (programming) [OBJ]

While Loop (programming) [OBJ]

For Loop (programming) |
| | | | | 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 | Variabless: More examples (Python Debugging)

 Variables: More Examples (Javascript Debugging) |

	C4. Mathematical Modelling	apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations			
Data	D1. Data Literacy	manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life	D1.1	explain why percentages are used to present the distribution of a variable for a population or sample in large sets of data, and provide examples	Statistics: Frequency and Graphs
			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	Circle 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	Bar and Column Graphs Histogram Line Graphs Circle Graphs
			D1.5	determine the impact of adding or removing data from a data set on a measure of central tendency, and describe how these changes alter the shape and distribution of the data	Statistics : Mode and Median Statistics : Mean Range (Statistics)
			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	INterpreting Statistics - Introduction Interpreting Statistics - Misleading Presentation of Data
	D2. Probability	describe the likelihood that events will happen, and use that information to make predictions	D2.1	describe the difference between independent and dependent events, and explain how their probabilities differ, providing examples	Randomness and Probability
			D2.2	determine and compare the theoretical and experimental probabilities of two independent events happening and of two dependent events happening	Conditional Probability
Spatial Sense	E1. Geometric and Spatial Reasoning	describe and represent shape, location, and movement by applying geometric properties	E1.2	draw top, front, and side views, as well as perspective views, of objects and physical spaces, using appropriate scales	Building Polyhedrons Scale

		and spatial relationships in order to navigate the world around them	E1.3	perform dilations and describe the similarity between the image and the original shape	Uniformity
	E2. Measurement	compare, estimate, and determine measurements in various contexts	E2.2	solve problems involving perimeter, area, and volume that require converting from one metric unit of measurement to another	Measurement : Units and Conversion
			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	The CIrcumference of a Circle
			E2.5	show the relationships between the radius, diameter, and area of a circle, and use these relationships to develop the formula for measuring the area of a circle and to solve related problems	The Area of a Circle
			E2.6	represent cylinders as nets and determine their surface area by adding the areas of their parts	Cylinders
			E2.7	show that the volume of a prism or cylinder can be 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	Cylinders Prisms
Financial Literacy	F1. Money and Finances	demonstrate the knowledge and skills needed to make informed financial decisions	F1.5	explain how interest rates can impact savings, investments, and the cost of borrowing to pay for goods and services over time	Simple Interest Compound Interest Pay Now or Later

			F1.6	compare interest rates and fees for different accounts and loans offered by various financial institutions, and determine the best option for different scenarios	Pay Now or Later *

Curriculum Expectation were adapted from The Ontario curriculum, grades 1-8: Mathematics. Toronto: Ministry of Education and Training (2020) https://www.dcp.edu.gov.on.ca/en/curriculum/elementary-mathematics/grades/g6-math/strands