GRADE 3/4 - MATH CURRICULUM CHECKLIST

STRAND A - SEL & MATHEMATICAL PROCESSES

A1 Overall: 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	P	T1	T2	Notes and Assessments
problem solving: develop, select, and apply problem-solving strategies				
reasoning and proving: develop and apply reasoning skills (e.g., classification, recognition of relationships, use of counter-examples) to justify thinking, make and investigate conjectures, and construct and defend arguments				
reflecting: demonstrate that as they solve problems, they are pausing, looking back, and monitoring their thinking to help clarify their understanding (e.g., by comparing and adjusting strategies used, by explaining why they think their results are reasonable, by recording their thinking in a math journal)				
connecting: make connections among mathematical concepts, procedures, and representations, and relate mathematical ideas to other contexts (e.g., other curriculum areas, daily life, sports)				
communicating: express and understand mathematical thinking, and engage in mathematical arguments using everyday language, language resources as necessary, appropriate mathematical terminology, a variety of representations, and mathematical conventions				
representing: select from and create a variety of representations of mathematical ideas (e.g., representations involving physical models, pictures, numbers, variables, graphs), and apply them to solve problems				
selecting tools and strategies: select and use a variety of concrete, visual, and electronic learning tools and appropriate strategies to investigate mathematical ideas and to solve problems				

GRADE 3/4 - STRAND A - SEL & MATHEMATICAL PROCESSES

CRITERIA	P	T1	T2	Notes and Assessments
1. express and manage their feelings, and show understanding of the feelings of others, as they engage positively in mathematics activities				
2. work through challenging math problems, understanding that their resourcefulness in using various strategies to respond to stress is helping them build personal resilience				
3. recognize that testing out different approaches to problems and learning from mistakes is an important part of the learning process, and is aided by a sense of optimism and hope				
4. work collaboratively on math problems – expressing their thinking, listening to the thinking of others, and practising inclusivity – and in that way fostering healthy relationships				
5. see themselves as capable math learners, and strengthen their sense of ownership of their learning, as part of their emerging sense of identity and belonging				
6. make connections between math and everyday contexts to help them make informed judgements and decisions				

GRADE 3/4 - STRAND B - NUMBER

B1. Number Sense - demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Whole Numbers **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	**Whole Numbers** **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				
B1.2 compare and order whole numbers up to and including 1000, in various contexts	**B1.2** compare and order whole numbers up to and including 10 000, in various contexts				
B1.3 round whole numbers to the nearest ten or hundred, in various contexts	**B1.3** round whole numbers to the nearest ten, hundred, or thousand, in various contexts				
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					
Fractions **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	**B1.5** use drawings and models to represent, 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				
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	**Fractions and Decimals** **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				

	B1.6 count to 10 by halves, thirds, fourths, fifths, sixths, eighths, and tenths, with and without the use of tools				
	B1.7 read, represent, compare, and order decimal tenths, in various contexts				
	B1.8 round decimal numbers to the nearest whole number, in various contexts				
	B1.9 describe relationships and show equivalences among fractions and decimal tenths, in various contexts				

GRADE 3/4 - STRAND B - NUMBER

B2. Operations - use knowledge of numbers and operations to solve mathematical problems encountered in everyday life

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes & Assessments
Properties and Relationships **B2.1** use the properties of operations, and the relationships between multiplication and division, to solve problems and check calculations	**Properties and Relationships** **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 operation, and check calculations				
Math Facts **B2.2** recall and demonstrate multiplication facts of 2, 5, and 10, and related division facts	**Math Facts** **B2.2** recall and demonstrate multiplication facts for 1 × 1 to 10 × 10, and related division facts				
Mental Math **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	**Mental Math** **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				
Addition and Subtraction **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	**Addition and Subtraction** **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				
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					
Multiplication and Division **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	**Multiplication and Division** **B2.5** represent and solve problems involving the multiplication of two- or three-digit whole numbers by one-digit whole numbers and by 10, 100, and 1000, using appropriate tools, including arrays				
	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				
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 drawings, and standard fractional notation	**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				
B2.9 use the ratios of 1 to 2, 1 to 5, and 1 to 10 to scale up numbers and to solve problems	**B2.8** show simple multiplicative relationships involving whole-number rates, using various tools and drawings				

GRADE 3/4 - STRAND C - ALGEBRA

C1. Patterns and Relationships - identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Patterns **C1.1** identify and describe repeating elements and operations in a variety of patterns, including patterns found in real-life contexts	**Patterns** **C1.1** identify and describe repeating and growing patterns, including patterns found in real-life contexts				
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 repeating and growing patterns using various representations, including tables of values and graphs				
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 repeating and growing patterns				
C1.4 create and describe patterns to illustrate relationships among whole numbers up to 1000	**C1.4** create and describe patterns to illustrate relationships among whole numbers and decimal tenths				

C2. Equations and Inequalities - demonstrate an understanding of variables, expressions, equations, and inequalities, and apply this understanding in various contexts

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Variables **C2.1** describe how variables are used, and use them in various contexts as appropriate	**Variables** **C2.1** identify and use symbols as variables in expressions and equations				
Equalities and Inequalities **C2.2** determine whether given sets of addition, subtraction, multiplication, and division expressions are equivalent or not	**Equalities and Inequalities** **C2.2** solve equations that involve whole numbers up to 50 in various contexts, and verify solutions				
C2.3 identify and use equivalent relationships for whole numbers up to 1000, in various contexts	**C2.3** solve inequalities that involve addition and subtraction of whole numbers up to 20, and verify and graph the solutions				

GRADE 3/4 - STRAND C - ALGEBRA

C3. Coding - solve problems and create computational representations of mathematical situations using coding concepts and skills

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Coding Skills **C3.1** solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential, concurrent, and repeating events	**Coding Skills** **C3.1** solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential, concurrent, repeating, and nested events				
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, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes				

C4. Mathematical Modelling - apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations

This overall expectation has no specific expectations. Mathematical modelling is an iterative and interconnected process that is applied to various contexts, allowing students to bring in learning from other strands. Students' demonstration of the process of mathematical modelling, as they apply concepts and skills learned in other strands, is assessed and evaluated.

OVERALL EXPECTATION	P	T1	T2	Notes and Assessments
apply the process of mathematical modelling to represent, analyse, make predictions, and provide insight into real-life situations				

GRADE 3/4 - STRAND D - DATA

D1. Data Literacy - manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Data Collection and Organization **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	**Data Collection and Organization** **D1.1** describe the difference between qualitative and quantitative data, and describe situations where each would be used				
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 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				
Data Visualization **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	**Data Visualization** **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				
	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				
Data Analysis **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	**Data Analysis** **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				
D1.5 analyse different data sets presented in various ways, 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	**D1.6** analyse different sets of data presented in various ways, including 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				

GRADE 3/4 - STRAND D - DATA

D2. Probability - describe the likelihood that events will happen, and use that information to make predictions

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Probability **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	**Probability** **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				
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 mean, median, and mode(s) of a data set will be the same for data collected from different populations				

GRADE 3/4 - STRAND E - SPATIAL SENSE

E1. Geometric and Spatial Reasoning - describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
Geometric Reasoning **E1.1** sort, construct, and identify cubes, prisms, pyramids, cylinders, and cones by comparing their faces, edges, vertices, and angles	**Geometric Reasoning** **E1.1** identify geometric properties of rectangles, including the number of right angles, parallel and perpendicular sides, and lines of symmetry				
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					
Location and Movement **E1.4** give and follow multi-step instructions involving movement from one location to another, including distances and half- and quarter-turns	**Location and Movement** **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				
	E1.3 describe and perform translations and reflections on a grid, and predict the results of these transformations				

GRADE 3/4 - STRAND E - SPATIAL SENSE

E2. Measurement - compare, estimate, and determine measurements in various contexts

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes
Length, Mass, Capacity **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	**The Metric System** **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 units to estimate mass and capacity				
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	**E2.2** use metric prefixes to describe the relative size of different metric units, and choose appropriate units and tools to measure length, mass, and capacity				
E2.3 use non-standard units appropriately to estimate, measure, and compare capacity, and explain the effect that overfilling or underfilling, and gaps 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					
Time **E2.6** use analog and digital clocks and timers to tell time in hours, minutes, and seconds	**Time** **E2.3** solve problems involving elapsed time by applying the relationships between different units of time				
	Angles **E2.4** identify angles and classify them as right, straight, acute, or obtuse				
Area **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	**Area** **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				
E2.8 use appropriate non-standard units to measure area, and explain the effect that gaps and overlaps have on accuracy	**E2.6** apply the formula for the area of a rectangle to find the unknown measurement when given two of the three				
E2.9 use square centimetres (cm^2) and square metres (m^2) to estimate, measure, and compare the areas of various two-dimensional shapes, including those with curved sides					

GRADE 3/4 - STRAND F - FINANCIAL LITERACY

Grade 3

F1. Money and Finances - demonstrate an understanding of the value and use of Canadian currency

Grade 4

F1. Money and Finances - demonstrate the knowledge and skills needed to make informed financial decisions

SPECIFIC EXPECTATION GRADE 3	SPECIFIC EXPECTATION GRADE 4	P	T1	T2	Notes and Assessments
	Money Concepts **F1.1** identify various methods of payment that can be used to purchase goods and services				
Money Concepts **F1.1** estimate and calculate the change required for various simple cash transactions involving whole-dollar amounts and amounts of less than one dollar	**F1.2** 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				
	Financial Management **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				
	Consumer and Civic Awareness **F1.5** describe some ways of determining whether something is reasonably priced and therefore a good purchase				