Mathematics Outcomes Progression P-3

Supplementary Resource

NOVA SCOTIA
NOUVELLE-ÉCOSSE

2020–2021

MATHEMATICS PROGRESSION: Primary to Grade 3

In September 2020, teachers will be working hard to create a space that is safe and welcoming for all learners no matter the location of their "classroom". The first weeks will still be a time to establish a sense of community, engage learners in rich interactive experiences to promote critical thinking and create opportunities for collaboration and discussion. This is an opportune time to develop a culture and a climate for mathematics learning, conducive to collaboration, risk taking and inquiry.

The **Foundational Outcomes** identified in this document represent outcomes determined to be relevant for future learning in mathematics. Decisions about foundational outcomes were made in consultation with teachers, provincial mathematics team, Board and Regional Centre staff. The foundational outcomes are meant to guide teachers in making decisions about creating learning experiences that will prepare and engage their learners in a responsive way. However, a teacher's professional judgment remains the most important guide to effectively responding to the needs of their learners.

Colour coding has been used to identify outcomes and indicators as foundational (green), optional (orange) or non-foundational (red) for the 2020-2021 school year.

NUMBER PROGRESSION: WHOLE NUMBERS			
TOPIC	**MATHEMATICS PRIMARY**	**MATHEMATICS 1**	**MATHEMATICS 2**	**MATHEMATICS 3**
SAYING NUMBER SEQUENCES AND SKIP COUNTING	N01: Students will be expected to say the number sequence by • 1s, from 1 to 20 • by 1s, starting anywhere from 1 to 10 and • from 10 to 1 N01.01 recite the number sequence from 1 to 20 and from 10 to 1 N01.02 name the number that comes after a given number, 1 to 9 N01.03 name the number that comes before a given number, 2 to 10	N01: Students will be expected to say the number sequence • by 1s, forward and backward between any two given numbers, 0 to 100 • 2s to 20, forward starting at 0 • 5s to 100, forward starting at 0, using a hundred chart or a number line • 10s to 100, forward starting at 0, using a hundred chart or a number line N01.01 recite forward by 1s the number sequence between two given numbers, 0 to 100. N01.02 recite backward by 1s the number sequence between two given numbers, 0 to 100 N01.03 record a given numeral, 0 to 100, presented orally N01.04 read a given presented numeral, 0 to 100 N01.05 skip count by 2s to 20 starting at 0 N01.06 skip count by 5s to 100 starting at 0, using a hundred chart or a number line N01.07 skip count forward by 10s to 100 starting at 0, using a hundred chart or a number line N01.08 identify and correct errors and omissions in a given number sequence	N01: Students will be expected to say the number sequence by • 1s, forward and backward, starting from any point to 200 • 2s, forward and backward, starting from any point to 100 • 5s and 10s, forward and backward, using starting points that are multiples of 5 and 10 respectively to 100 • 10s, starting from any point, to 100 N01.01 extend counting sequence (by 1s), forward and backward N01.02 extend a given skip-counting sequence (by 2s, 5s, or 10s) forward and backward N01.03 skip count by 10s, given any number as a starting point N01.04 identify and correct errors and omissions in a given skip-counting sequence N01.05 count a given sum of money with pennies, nickels, or dimes (to 100¢) N01.06 count quantity using groups of 2s, 5s, or 10s and counting on	N01: Students will be expected to say the number sequence forward and backward by • 1s through transitions to 1000 • 2s, 5s, 10s, or 100s, using any starting point to 1000 • 3s, using starting points that are multiples of 3 up to 100 • 4s, using starting points that are multiples of 4 up to 100 • 25s, using starting points that are multiples of 25 up to 200 N01.01 extend the number sequence by 1s, particularly through transition from decade to decade and century to century N01.02 extend a given skip counting sequence by 2s, 5s, 10s, or 100s, forward and backward, using a given starting point N01.03 extend a given skip counting sequence by 3s, forward and backward, starting at a given multiple of 3 up to 100 N01.04 extend a given skip counting sequence by 4s, forward and backward, starting at a given multiple of 4 up to 100 N01.05 extend a given skip counting sequence by 25s, forward and backward, starting at a given multiple of 25 up to 200) N01.06 identify and correct errors and omissions in a given skip counting sequence N01.07 determine the value of a given set of coins (nickels, dimes, quarters, and loonies) by using skip counting N01.08 identify and explain the skip counting pattern for a given number sequence

MEANINGFUL COUNTING	N06: Students will be expected to demonstrate an understanding of counting to 10. N06.01 answer the question, How many are in the set? using the last number counted in a set N06.02 in a fixed arrangement, starting in different locations, show that the count of the number of objects in a set does not change N06.03 count the number of objects in a given set, rearrange the objects, predict the new count, and recount to verify the prediction	N03: Students will be expected to demonstrate an understanding of counting to 20 by indicating that the last number said identifies "how many" showing that any set has only one count using the counting-on strategy N03.01 answer the question, How many are in the set? using the last number counted in a given set N03.02 identify and correct counting errors in a given counting sequence N03.03 show that the count of the number of objects in a given set does not change regardless of the order in which the objects are counted N03.04 record the number of objects in a set using the numeral symbol N03.05 determine the total number of objects in a given set, starting from a known quantity and counting on N07: Students will be expected to demonstrate an understanding of conservation of number for up to 20 objects. N07.01 explain why for a given number of counters, no matter how they are arranged, the total number of counters does not change. N07.02 group a set of given counters in more than one way N07.03 explain why for a given number of counters, no matter how they are grouped, the total number of counters does not change	N04: Students will be expected to represent and partition numbers to 100. N04.01 represent a given number using concrete materials, such as ten-frames and base-ten materials N04.02 represent a given number using coins (pennies, nickels, dimes, and quarters) N04.03 represent a given number using tallies N04.04 represent a given number pictorially (both print and digital) N04.05 find examples of a given number in the environment N04.06 represent a given number using expressions (e.g., 24 + 6, 15 + 15, 40 − 10) N04.07 read a number (0–100) given in symbolic or word form N04.08 record in words a given number (0–20) N04.09 record, symbolically, any number (0–100).	N01: Students will be expected to say the number sequence forward and backward by ● 1s through transitions to 1000 ● 2s, 5s, 10s, or 100s, using any starting point to 1000 ● 3s, using starting points that are multiples of 3 up to 100 ● 4s, using starting points that are multiples of 4 up to 100 ● 25s, using starting points that are multiples of 25 up to 200
ESTIMATE QUANTITY	n/a	N06: Students will be expected to estimate quantities to 20 by using referents. N06.01 estimate a given quantity by comparing it to a given referent (known quantity) N06.02 select an estimate for a given quantity by choosing between at least two possible choices and explain the choice	N06: Students will be expected to estimate quantities to 100 by using referents. N06.01 estimate a given quantity by comparing it to a referent (known quantity) N06.02 estimate the number of groups of ten in a given quantity using 10 as a referent N06.03 select between two possible estimates for a given quantity and explain the choice	N04: Students will be expected to estimate quantities less than 1000 using referents. N04.01 estimate the number of groups of ten in a given quantity using 10 as a referent (known quantity) N04.02 estimate the number of groups of a hundred in a given quantity using 100 as a referent N04.03 estimate a given quantity by comparing it to a referent N04.04 select an estimate for a given quantity by choosing among three possible choices N04.05select and justify a referent for determining an estimate for a given quantity
ORDINALS	n/a	n/a	N03: Students will be expected to describe order or relative position using ordinal numbers (up to tenth).	PR01: Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, comparing,

			N03.01 indicate a position of a specific object in a sequence by using ordinal numbers up to tenth. N03.02 compare the ordinal position of a specific object in two different given sequences	and creating numerical (numbers to 1000) patterns and non-numerical patterns using manipulatives, diagrams, sounds, and actions. PR01.01 identify and describe increasing patterns PR01.02 describe a given increasing pattern by stating a pattern rule that includes the starting point and a description of how the pattern continues PR01.03 extend a pattern, using the pattern rule, for the next three terms PR01.04 compare numeric patterns PR01.05 identify and explain errors in a given increasing pattern PR01.06 create a concrete, pictorial (both print and digital), or symbolic representation of an increasing pattern for a given pattern rule PR01.07 create a concrete, pictorial (both print and digital), or symbolic increasing pattern and describe the pattern rule PR01.08 solve a given problem using increasing patterns PR01.09 identify and describe the strategy used to determine a missing term in a given increasing pattern PR01.10 use ordinal numbers (to 100th) to refer to or to predict terms within an increasing pattern
SUBITIZING	N02: Students will be expected to recognize, at a glance, and name the quantity represented by familiar arrangements of one to five objects or dots. N02.01 look briefly at a given familiar arrangement of one to five objects or dots and identify the number represented without counting N02.02 identify the number represented by a given dot arrangement on a five-frame	N02: Students will be expected to recognize, at a glance, and name the quantity represented by familiar arrangements of 1 to 10 objects or dots. N02.01 look briefly at a given familiar arrangement of objects or dots, and identify the number represented without counting N02.02 identify the number represented by a given arrangement of counters or dots on a ten-frame	n/a	n/a
REPRESENTING AND PARTITIONING WHOLE NUMBERS	N04: Students will be expected to represent and describe numbers 2 to 10 in two parts, concretely and pictorially. N04.01 show a given number as two parts (using fingers, counters, or other objects) and name the number of objects in each part N04.02 show a given number as two parts, using pictures, and name the number of objects in each part N03: Students will be expected to relate a numeral, 1 to 10, to its respective quantity. N03.01 name the number for a given set of objects N03.02 match numerals with their given pictorial (both print and digital) representations N03.03 hold up the appropriate number of fingers for a given numeral N03.04 construct a set of objects corresponding to a given numeral	N04: Students will be expected to represent and partition numbers to 20. N04.01 represent a given number up to 20 using a variety of manipulatives, including ten-frames and created materials N04.02 model a given number up to 20 using a variety of pictorial representations (both print and digital) N04.03 find examples of a given number in the environment N04.04 place given numerals on a number line with benchmarks 0, 5, 10, 15, and 20 N04.05 partition any given quantity up to 20 into two parts and identify the number of objects in each part N04.06 model a given number using two different objects N07: Students will be expected to demonstrate an understanding of conservation of number for up to 20 objects.	N04: Students will be expected to represent and partition numbers to 100. N02: Students will be expected to demonstrate if a number (up to 100) is even or odd. N02.01 use concrete materials or pictorial representations (both print and digital) to determine if a given number is even or odd N02.02 identify even and odd numbers in a given sequence, such as on a hundred chart N02.03 sort a given set of numbers as even numbers and odd numbers	N02: Students will be expected to represent and partition numbers to 1000. N02.01 read a given three-digit numeral without using the word "and" N02.02 read a given number word (0 to 1000) N02.03 represent a given number as an expression N02.04 represent a given number concretely and pictorially (both print and digital) in a variety of ways N02.05 write number words for given multiples of ten to 90 N02.06 write number words for given multiples of a hundred to 900 N02.07 record numerals for numbers expressed orally, concretely, or pictorially (both print and digital)

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
	N03.05 record the numeral that represents the quantity of a given set of objects			
COMPARING AND ORDERING WHOLE NUMBERS	N05: Students will be expected to compare quantities, 1 to 10, using one-to-one correspondence. N05.01 construct a set to show more than, fewer than, or as many as a given set N05.02 compare two given sets through direct comparison and describe the sets using words such as "more," "fewer," "as many as," or "the same number as"	N05: Students will be expected to compare sets containing up to 20 objects to solve problems using referents and one-to-one correspondence N05.01 build a set that has more, fewer, or as many objects as a given set, up to 20 objects N05.02 build several sets of different objects that have the same given number of objects in the set N05.03 compare two given sets using one-to-one correspondence and describe them using comparative words, such as more, fewer, or as many N05.04 compare a set to a given referent using comparative language N05.05 solve, using pictures and words, given story problems that involve the comparison of two quantities N08: Students will be expected to identify the number, up to 20, that is one more, two more, one less, and two less than a given number. N08.01 name the number that is one more, two more, one less, or two less than a given number, up to 20 N08.02 represent a number on ten-frames that is one more, two more, one less, or two less than a given number	N05: Students will be expected to compare and order numbers up to 100. N05.01 compare and order a given set of numbers in ascending or descending order and verify the result using a hundred chart, number line, ten-frames, or by making references to place value N05.02 identify errors in a given ordered sequence N05.03 identify missing numbers in a given hundred chart N05.04 identify errors in a given hundred chart	N03: Students will be expected to compare and order numbers up to 1000. N03.01 place a given set of numbers in ascending or descending order and verify the result using a number chart or other models N03.02 create as many different three-digit numerals as possible, given three different digits. place the numbers in ascending or descending order N03.03 identify errors in a given ordered sequence N03.04 identify missing numbers in parts of a given number chart and on a number line N03.05 identify errors in a given number chart and on a number line N03.06 place numbers on a number line containing benchmark numbers for the purpose of comparison N03.07 compare numbers based on a variety of methods, and record the comparison using words and symbols (=, >, and <)
PLACE VALUE: WHOLE NUMBERS	n/a	n/a	N07: Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 100. N07.01 explain and show with counters the meaning of each digit for a given two-digit numeral with both digits the same N07.02 count the number of objects in a given set using groups of 10s and 1s, and record the result as a two-digit numeral under the headings of 10s and 1s N07.03 describe a given two-digit numeral in at least two ways N07.04 illustrate using ten-frames and diagrams that a given numeral consists of a certain number of groups of ten and a certain number of ones N07.05 illustrate using proportional base-ten materials that a given numeral consists of a certain number of tens and a certain number of ones N07.06 explain why the value of a digit depends on its placement within a numeral N07.07 represent one unit if shown a pre-grouped model representing ten	N05: Students will be expected to illustrate, concretely and pictorially, the meaning of place value for numerals to 1000. N05.01 record, in more than one way, the number represented by given proportional and non-proportional concrete materials in traditional and non-conventional formats N05.02 represent a given number in different ways using proportional and non-proportional concrete materials and explain how they are equivalent (e.g., 351 can be represented as three 100s, five 10s, and one 1s; or two 100s, fifteen 10s, and one 1s; or three 100s, four 10s, and eleven 1s) N05.03 record a given number in additive expanded form N05.04 record a number represented by base-ten blocks arranged in a non-conventional format
	NUMBER PROGRESSION: FRACTIONS			
TOPIC	**MATHEMATICS PRIMARY**	**MATHEMATICS 1**	**MATHEMATICS 2**	**MATHEMATICS 3**

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
REPRESENTING FRACTIONS	n/a	n/a	n/a	N13: Students will be expected to demonstrate an understanding of fractions by -explaining that a fraction represents a part of a whole -describing situations in which fractions are used -comparing fractions of the same whole with like denominators N13.01 describe everyday situations where fractions are used N13.02 represent a given fraction concretely or pictorially N13.03 identify, model, and explain the meaning of numerator and denominator N13.04 sort a given set of diagrams of regions into those that represent equal parts and those that do not and explain the sorting N13.05 name and record the fraction represented by the shaded and non-shaded parts of a given region N13.06 compare given fractions with the same denominator using models
COMPARING AND ORDERING FRACTIONS	n/a	n/a	n/a	N13: Students will be expected to demonstrate an understanding of fractions by -explaining that a fraction represents a part of a whole -describing situations in which fractions are used -comparing fractions of the same whole with like denominators

NUMBER PROGRESSION: OPERATIONS
ADDING AND SUBTRACTING

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
ADDITION AND SUBTRACTION: BASIC FACTS	n/a	n/a	N10: Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts. N10.01 explain the mental mathematics strategy that could be used to determine basic addition facts. -Doubles Facts -Plus One Facts -One-Apart (Near Doubles) Facts -Plus Two Facts -Plus Zero Facts -Make-10 Facts -Two-Apart Facts -Plus Three Facts N10.02 use and describe a personal strategy for determining a sum to 18 N10.03 quickly recall basic addition facts to 18 in a variety of contexts N10.04 explain the think-addition strategy used to determine a basic subtraction fact N10.05 use and describe a personal strategy for determining the subtraction facts	N10: Students will be expected to apply mental mathematics strategies and number properties to develop quick recall of basic addition facts to 18 and related basic subtraction facts. N10.01 describe a mental mathematics strategy that could be used to determine a given basic addition fact up to 9 + 9 N10.02 explain how the commutative (order-doesn't-matter) property and the identity (no-change-with-zero) property can assist in addition fact learning N10.03 describe a mental mathematics strategy that could be used to determine a given basic subtraction fact with minuends up to 18 and subtrahends up to 9 N10.04 recognize which facts could be determined by a given strategy N10.05 quickly recall basic addition facts to 18 and related subtraction facts in a variety of contexts

			N08: Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number. N08.01 add zero to a given number and explain why the sum is the same as the addend N08.02 subtract zero from a given number and explain why the difference is the same as the given number.	
ADDITION AND SUBTRACTION: MENTAL MATHEMATICS AND ESTIMATION	n/a	N08: Students will be expected to identify the number, up to 20, that is one more, two more, one less, and two less than a given number. N10: Students will be expected to use and describe strategies to determine sums and differences using manipulatives and visual aids. Strategies include ● counting on or counting back ● one more or one less ● making ten ● doubles ● near doubles N10.01 USe and describe your personal strategy to determine the sum . N10.02 use and describe a personal strategy to determine a difference N10.03 use and describe how two different strategies can be used to determine a sum or difference	N08: Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number. N10: Students will be expected to apply mental mathematics strategies to quickly recall basic addition facts to 18 and determine related subtraction facts.	N06: Students will be expected to describe and apply mental mathematics strategies for adding two two-digit numerals. N06.01 explain mental mathematics strategies that could be used to determine a sum. -Ten and some more -Tens and some more -Quick addition -Addition facts to 10 applied to multiples of 10 -Addition on the hundred chart -Adding on -Make ten -Compensation -Compatible numbers N06.02 use and describe a personal strategy for determining a sum N06.03 determine a sum of two two-digit numerals efficiently, using mental mathematics strategies N07: Students will be expected to describe and apply mental mathematics strategies for subtracting two two-digit numerals. N07.01 explain mental mathematics strategies that could be used to determine a difference. -Facts with minuends of 10 or less applied to multiples of 10 -Quick subtraction -Subtraction on the hundred chart -Compensation -Back through ten N07.02 use and describe a personal strategy for determining a difference N07.03 determine a difference of two two-digit numerals efficiently, using mental mathematics strategies N08: Students will be expected to apply estimation strategies to predict sums and differences of one-, two-, and three-digit numerals in a problem-solving context. N08.01 explain estimation strategies that could be used to determine an approximate sum or difference

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
				N08.02 use and describe a strategy for determining an estimate N08.03 estimate the solution for a given story problem involving the sum or difference of up to two three-digit numerals N10: Students will be expected to apply mental mathematics strategies and number properties to develop quick recall of basic addition facts to 18 and related basic subtraction facts.
ADDITION AND SUBTRACTION: CALCULATIONS	n/a	N09: Students will be expected to demonstrate an understanding of the addition of two single-digit numbers and the corresponding subtraction, concretely, pictorially, and symbolically, in join, separate, equalize/compare, and part-part-whole situations. N09.01 act out story problems that are presented orally or through shared reading N09.02 model story problems with manipulatives or pictures, find and share solutions using counting strategies, and record number sentences that represent how they thought about the problems N09.03 create story problems that connect to student experiences N09.04 create story problems for given number sentences N10: Students will be expected to use and describe strategies to determine sums and differences using manipulatives and visual aids. Strategies include ● counting on or counting back ● one more or one less ● making ten ● Doubles ● near doubles	N08: Students will be expected to demonstrate and explain the effect of adding zero to or subtracting zero from any number. **Outcome N09:** Students will be expected to demonstrate an understanding of addition (limited to one- and two-digit numerals) with answers to 100 and the corresponding subtraction by -using personal strategies for adding and subtracting with and without the support of manipulates -creating and solving problems that involve addition and subtraction -explaining and demonstrating that the order in which numbers are added does not affect the sum -explaining and demonstrating that the order in which numbers are subtracted matters when finding a difference N09.01 solve a given story problem of any type by modelling it with materials or a diagram (both print and digital), and write a number sentence that represents the thinking in the solution N09.02 solve a given story problem of any type by writing a number expression and combining the numbers to complete the number sentences N09.03 match a number sentence to a given story problem N09.04 create an addition or a subtraction number sentence and a story problem for a given solution N09.05 model addition and subtraction using concrete materials or visual representations, and record the process symbolically N09.06 add a given set of numbers in two different ways and explain why the sum is the same N09.07 recognize and create equivalent addition and subtraction number sentences	N09: Students will be expected to demonstrate an understanding of addition and subtraction of numbers (limited to one-, two-, and three-digit numerals) with answers to 1000 by -using personal strategies for adding and subtracting with and without the support of manipulatives -creating and solving problems in context that involve addition and subtraction of numbers concretely, pictorially, and symbolically N09.01 model the addition of two or more given numbers using concrete or visual representations and record the process symbolically N09.02 model the subtraction of two given numbers using concrete or visual representations and record the process symbolically N09.03 create an addition or subtraction story problem for a given solution N09.04 determine the sum of two given numbers using a personal strategy (e.g., for 326 + 48, record 300 + 60 + 14) N09.05 determine the difference of two given numbers using a personal strategy (e.g., for 127 − 38, record 127 − 20 − 10 − 8) N09.06 solve a given problem involving the sum or difference of two given numbers.

NUMBER PROGRESSION: OPERATIONS
MULTIPLICATION AND DIVISION

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
MULTIPLICATION AND DIVISION	n/a	n/a	n/a	N11: Students will be expected to demonstrate an understanding of multiplication to 5 × 5 by

| | | | -representing and explaining multiplication using equal grouping and arrays
-creating and solving problems in context that involves multiplication modelling
-multiplication using concrete and visual representations and recording the process symbolically
-relating multiplication to repeated addition
-relating multiplication to division
N11.01 identify events from experience that can be described as multiplication
N11.02 represent a given story problem (orally, shared reading, written) using manipulatives or diagrams and record in a number sentence
N11.03 represent a given multiplication expression as repeated addition
N11.04 represent a given repeated addition as multiplication
N11.05 create and illustrate a story problem for a given number sentence and/or expression
N11.06 represent, concretely or pictorially (both print and digital), equal groups for a given number sentence
N11.07 represent a given multiplication expression using an array
N11.08 create an array to model the commutative property of multiplication
N11.09 relate multiplication to division by using arrays and writing related number sentences
N11.10 solve a given problem in context involving multiplication

N12: Students will be expected to demonstrate an understanding of division by
-representing and explaining division using equal sharing and equal grouping
-creating and solving problems in context that involve equal sharing and equal grouping
-modelling equal sharing and equal grouping using concrete and visual representations, and recording the process symbolically
-relating division to repeated subtraction
-relating division to multiplication
(Limited to division related to multiplication facts up to 5 × 5.)

N12.01 identify events from experience that can be described as equal sharing.
N12.02 identify events from experience that can be described as equal grouping
N12.03 illustrate, with counters or a diagram (both print and digital), a given story problem involving equal sharing, presented orally or through shared reading, and solve the problem
N12.04 illustrate, with counters or a diagram (both print and digital), a given story problem involving equal grouping, presented orally or through shared reading, and solve the problem
N12.05 listen to a story problem, represent the numbers using manipulatives or a |

| | | | diagram (both print and digital) and record the problem with a number sentence and/or expression
N12.06 create and illustrate with counters, a story problem for a given number sentence and/or expression
N12.07 represent a given division sentence and/or expression as repeated subtraction
N12.08 represent a given repeated subtraction as a division sentence
N12.09 relate division to multiplication by using arrays and writing related number sentences.
N12.10 solve a given problem involving division. |

PATTERNS AND RELATIONS PROGRESSION

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
REPEATING PATTERNS	PR01: Students will be expected to demonstrate an understanding of repeating patterns (two or three elements) by identifying, reproducing, extending, and creating patterns using manipulatives, sounds, and actions. PR01.01 distinguish between repeating patterns and non-repeating sequences in a given set by identifying the part that repeats PR01.02 copy a given repeating pattern and describe the pattern PR01.03 extend a variety of given repeating patterns to two more repetitions PR01.04 create a repeating pattern using manipulatives, musical instruments, or actions, and describe the pattern PR01.05 identify and describe a repeating pattern in the classroom, the school, and outdoors	PR01: Students will be expected to demonstrate an understanding of repeating patterns (two to four elements) by describing, reproducing, extending, and creating patterns using manipulatives, diagrams, sounds, and actions. PR01.01 describe a given repeating pattern containing two to four elements in its core PR01.02 identify errors in a given repeating pattern PR01.03 identify the missing element(s) in a given repeating pattern PR01.04 create and describe a repeating pattern using a variety of manipulatives, musical instruments, and actions PR01.05 reproduce and extend a given repeating pattern using manipulatives, diagrams (both print and digital), sounds, and actions PR01.06 identify and describe a repeating pattern in the environment (e.g., classroom, outdoors) using everyday language PR01.07 identify repeating events (e.g., days of the week, birthdays, seasons) Outcome PR02: Students will be expected to translate repeating patterns from one representation to another. PR02.01 represent a given repeating pattern using another mode (e.g., actions to sound; colour to shape; ABC, ABC, ABC to blue, yellow, green, blue, yellow, green, blue, yellow, green, …) PR02.02 describe a given repeating pattern using a letter code (e.g., ABC, ABC, ABC, …)	PR01: Students will be expected to demonstrate an understanding of repeating patterns (three to five elements) by describing, extending, comparing, and creating patterns using manipulatives, diagrams, sounds, and actions. PR01.01 identify the core of a given repeating pattern PR01.02 describe and extend a given double attribute pattern PR01.03 create (both print and digital) a repeating non-numerical pattern and explain the rule PR01.04 predict an element of a given repeating pattern using a variety of strategies and extend the pattern up to the tenth element to verify the prediction PR01.05 translate a repeating pattern from one mode to another PR01.06 compare two given repeating patterns and describe how they are alike/different	n/a
INCREASING PATTERNS	n/a	n/a	**PR02:** Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, and creating numerical patterns (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds, and actions. PR02.01 identify and describe increasing pattern	PR01: Students will be expected to demonstrate an understanding of increasing patterns by describing, extending, comparing, and creating numerical (numbers to 1000) patterns and non-numerical patterns using manipulatives, diagrams, sounds, and actions.

				PR02.05 create an increasing pattern (both print and digital) and explain the pattern rule PR02.06 represent a given increasing pattern using another mode PR02.07 solve a given problem using increasing patterns PR02.08 identify and describe increasing patterns in the environment PR02.09 determine missing terms in a given concrete, pictorial, or symbolic increasing pattern and explain the reasoning	
DECREASING PATTERNS	n/a	n/a	n/a	PR02: Students will be expected to demonstrate an understanding of decreasing patterns by describing, extending, comparing, and creating numerical (numbers to 1000) patterns and non-numerical patterns using manipulatives, diagrams, sounds, and actions. PR02.01 identify and describe decreasing patterns. PR02.02 describe a given decreasing pattern by stating a pattern rule that includes the starting point and a description of how the pattern continues PR02.03 extend a pattern using the pattern rule for the next three terms PR02.04 compare numeric patterns PR02.05 identify and explain errors in a given decreasing pattern PR02.06 create a concrete, pictorial, or symbolic representation of a decreasing pattern for a given pattern rule PR02.07 create a concrete, pictorial (both print and digital), or symbolic decreasing pattern and describe the pattern rule PR02.08 solve a given problem using decreasing patterns PR02.09 identify and describe the strategy used to determine a missing term in a given decreasing pattern PR02.10 use ordinal numbers (to 100th) to refer to or to predict terms within a decreasing pattern
EQUALITY	N05: Students will be expected to compare quantities, 1 to 10, using one-to-one correspondence.	PR03: Students will be expected to describe equality as a balance and inequality as an imbalance, concretely and pictorially (0 to 20). PR03.01 construct two equal sets using the same objects (same shape and mass) and demonstrate their equality of number using a balance scale PR03.02 construct two unequal sets using the same objects (same shape and mass) and demonstrate their inequality of number using a balance scale PR03.03 determine if two given concrete sets are equal or unequal and explain the process used PR04: Students will be expected to record equalities using the equal symbol. PR04.01 represent a given pictorial (both print and digital) or concrete equality in symbolic form	PR03: Students will be expected to demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100). PR03.01 determine whether two given quantities of the same object (same shape and mass) are equal by using a balance scale PR03.02 construct and draw two unequal sets using the same object (same shape and mass) and explain the reasoning PR03.03 demonstrate how to change two given sets, equal in number, to create inequality PR03.04 choose from three or more given sets the one that does not have a quantity equal to the others and explain why PR04: Students will be expected to record equalities and inequalities symbolically, using the equal symbol or not equal symbol. PR04.01 determine whether two sides of a given number sentence are equal (=) or not	PR03: Students will be expected to solve one-step addition and subtraction equations involving symbols representing an unknown number. PR03.01 explain the purpose of the symbol in a given addition and in a given subtraction equation with one unknown PR03.02 create an addition or subtraction equation with one unknown to represent a given combination or separate action PR03.03 provide an alternative symbol for the unknown in a given addition or subtraction equation PR03.04 solve a given addition or subtraction equation that represents combining or separating actions with one unknown using manipulatives PR03.05 solve a given addition or subtraction equation with one unknown using a variety of strategies including guess and check

		PR04.02 represent a given equality using manipulatives or pictures (both print and digital) PR04.03 provide examples of equalities where the given sum or difference is on either the left or right side of the equal symbol (=) PR04.04 record different representations of the same quantity (0 to 20) as equalities N05: Students will be expected to compare sets containing up to 20 objects to solve problems using referents and one-to-one correspondence.	equal (≠). write the appropriate symbol and justify the answer PR04.02 model equalities using a variety of concrete representations and record the equality PR04.03 model inequalities using a variety of concrete representations and record the inequality	PR03.06 explain why the unknown in a given addition or subtraction equation has only one value
VARIABLES	n/a	n/a	n/a	PR03: Students will be expected to solve one-step addition and subtraction equations involving symbols representing an unknown number.

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MEASUREMENT PROGRESSION

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TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
LENGTH	M01: Students will be expected to use direct comparison to compare two objects based on a single attribute, such as length, mass, volume, and capacity. M01.01 compare the length of two given objects and explain the comparison using words such as "shorter," "longer," "taller," or "almost the same" M01.02 compare the mass of two given objects and explain the comparison using words such as "lighter," "heavier," or "almost the same" M01.03 compare the capacity of two given objects and explain the comparison using words such as "holds less," "holds more," or "holds almost the same" M01.04 compare the volume of two given objects and explain the comparison using words such as "bigger," "smaller," or "almost the same"	M01: Students will be expected to demonstrate an understanding of measurement as a process of comparing by -identifying attributes that can be compared -ordering objects -making statements of comparison -filling, covering, or matching M01.01 identify common attributes, such as length, mass, volume, capacity, and area that could be used to compare a given set of two objects M01.02 compare and order two given objects and identify the attributes used to compare M01.03 predict which object in a set is longest/shortest, determine by matching and explain the reasoning M01.04 predict which object in a set is heaviest/lightest, determine by comparing and explain the reasoning M01.05 predict which object in a set is largest/smallest, determine by comparing and explain the reasoning M01.06 predict which object in a set holds the most/least, determine by filling and explain the reasoning M01.07 predict which figure in a set has the greatest/least area, determine by covering and explain the reasoning	M02: Students will be expected to relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass. M02.01 explain why one of two given non-standard units may be a better choice for measuring the length of an object M02.02 explain why one of two given non-standard units may be a better choice for measuring the mass of an object M02.03 select a non-standard unit for measuring the length or mass of an object and explain why it was chosen M02.04 estimate the number of non-standard units needed for a given measurement task M02.05 explain why the number of units of a measurement will vary depending upon the unit of measure used M03: Students will be expected to compare and order objects by length, height, distance around, and mass using non-standard units and make statements of comparison. Indicators: M03.01 estimate, measure, and record the length, height, distance around, or mass of a given object using non-standard units M03.02 compare and order the measure of two or more objects in ascending or descending order and explain the method of ordering M04: Students will be expected to measure length to the nearest non-standard unit by using multiple copies of a unit and using a single copy of a unit (iteration process). M04.01 explain why overlapping or leaving gaps does not result in accurate measures M04.02 count the number of non-standard units required to measure the length of a given object using a single copy or multiple copies of a unit	M03: Students will be expected to demonstrate an understanding of measuring length (cm, m) by -selecting and justifying referents for the units centimetre or metre (cm, m) -modelling and describing the relationship between the units centimetre or metre (cm, m) -estimating length using referents -measuring and recording length, width, and height M03.01 provide a personal referent for one centimetre and explain the choice M03.02 provide a personal referent for one metre and explain the choice M03.03 match a given standard unit to a given referent M03.04 show that 100 centimetres is equivalent to 1 metre by using concrete materials M03.05 estimate the length of an object using personal referents M03.06 Déterminer et noter la longueur et la largeur d'une figure à deux dimensions. M03.07 Déterminer et noter la longueur, la largeur ou la hauteur d'un objet à trois dimensions. M03.08 Tracer un segment de droite d'une longueur donnée à l'aide d'une règle. M03.09 sketch a line segment of a given length without using a ruler M05: Students will be expected to demonstrate an understanding of perimeter of regular, irregular, and composite shapes by -estimating perimeter using referents for centimetre or metre (cm, m) -measuring and recording perimeter (cm, m) -create different shapes for a given perimeter (cm, m) to demonstrate that many shapes are possible for a perimeter

			M04.03 estimate and measure a given object using multiple copies of a non-standard unit and using a single copy of the same unit many times, and explain the results M04.04 estimate and measure, using non-standard units, a given length that is not a straight line. Outcome M05: Students will be expected to demonstrate that changing the position of an object does not alter the measurements of its attributes. M05.01 measure a given object, change the position, remeasure, and explain the results	M05.01 measure and record the perimeter of a given regular shape and explain the strategy used M05.02 measure and record the perimeter of a given irregular or composite shape, and explain the strategy used M05.03 construct a shape for a given perimeter (cm, m) M05.04 construct or draw more than one shape for the same given perimeter M05.05 estimate the perimeter of a given shape (cm, m) using personal referents
MASS	M01: Students will be expected to use direct comparison to compare two objects based on a single attribute, such as length, mass, volume, and capacity.	M01: Students will be expected to demonstrate an understanding of measurement as a process of comparing by -identifying attributes that can be compared -ordering objects -making statements of comparison -filling, covering, or matching	M02: Students will be expected to relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass. M03: Students will be expected to compare and order objects by length, height, distance around, and mass using non-standard units and make statements of comparison. M05: Students will be expected to demonstrate that changing the position of an object does not alter the measurements of its attributes.	M04: Students will be expected to demonstrate an understanding of measuring mass (g, kg) by -selecting and justifying referents for the units gram and kilogram (g, kg) -modelling and describing the relationship between the units gram and kilogram (g, kg) -estimating mass using referents -measuring and recording mass M04.01 provide a personal referent for one gram, and explain the choice M04.02 provide a personal referent for one kilogram, and explain the choice M04.03 match a given standard unit to a given referent M04.04 explain the relationship between 1000 grams and 1 kilogram using a model M04.05 estimate the mass of a given object using personal referents M04.06 measure, using a balance scale, and record the mass of given everyday objects using the units gram (g) and kilogram (kg) M04.07 provide examples of 3-D objects that have a mass of approximately 1 g, 100 g, and 1 kg M04.08 determine the mass of two given similar objects with different masses and explain the results M04.09 determine the mass of an object, change its shape, re-measure its mass, and explain the results
VOLUME	M01: Students will be expected to use direct comparison to compare two objects based on a single attribute, such as length, mass, volume, and capacity.	M01: Students will be expected to demonstrate an understanding of measurement as a process of comparing by -identifying attributes that can be compared -ordering objects -making statements of comparison -filling, covering, or matching	n/a	n/a
CAPACITY	M01: Students will be expected to use direct comparison to compare two objects based on a single attribute, such as length, mass, volume, and capacity.	M01: Students will be expected to demonstrate an understanding of measurement as a process of comparing by -identifying attributes that can be compared -ordering objects	n/a	n/a

		-making statements of comparison -filling, covering, or matching		
PERIMETER	n/a	n/a	M03: Students will be expected to compare and order objects by length, height, distance around, and mass using non-standard units and make statements of comparison.	M05: Students will be expected to demonstrate an understanding of perimeter of regular, irregular, and composite shapes by -estimating perimeter using referents for centimetre or metre (cm, m) -measuring and recording perimeter (cm, m) -create different shapes for a given perimeter (cm, m) to demonstrate that many shapes are possible for a perimeter
AREA	n/a	**M01:** Students will be expected to demonstrate an understanding of measurement as a process of comparing by -identifying attributes that can be compared -ordering objects -making statements of comparison -filling, covering, or matching	n/a	n/a
TIME	n/a	n/a	M01: Students will be expected to demonstrate an understanding of the calendar and the relationships among days, weeks, months, and years. M01.01 read a calendar M01.02 name and order the days of the week and months of the year M01.03 communicate the number of days in a week and the number of months in a year M01.04 solve a given problem involving time that is limited to the number of days in a week and the number of months in a year	M01: Students will be expected to relate the passage of time to common activities using non-standard and standard units (minutes, hours, days, weeks, months, years). M01.01 select and use a non-standard unit of measure, such as television shows or pendulum swings, to measure the passage of time, and explain the choice M01.02 identify activities that can or cannot be accomplished in minutes, hours, days, weeks, months, and years M01.03 provide personal referents for minutes and hours M01.04 select and use a standard unit of measure, such as minutes, hours, days, weeks, and months, to measure the passage of time, and explain the choice M02: Students will be expected to relate the number of seconds to a minute, the numbers of minutes to an hour, the numbers of hours to a day, and the number of days to a month in a problem-solving context. M02.01 determine the number of days in any given month using a calendar M02.02 solve a given problem involving the number of seconds in a minute, the number of minutes in an hour, the number of hours in a day, or the number of days in a given month M02.03 create a calendar that includes days of the week, dates, and personal events

GEOMETRY PROGRESSION

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
3-D OBJECTS	G01: Students will be expected to sort 3-D objects using a single attribute. G01.01 sort a given set of familiar 3-D objects using a single attribute, such as size or shape, and explain the sorting rule	G01: Students will be expected to sort 3-D objects and 2-D shapes using one attribute, and explain the sorting rule.	G01: Students will be expected to sort 2-D shapes and 3-D objects using two attributes and explain the sorting rule.	G01: Students will be expected to describe 3-D objects according to the shape of the faces and the number of edges and vertices. G01.01 identify the faces, edges, and vertices of given 3-D objects, including spheres,

	G01.02 explain the sorting rule used to sort a pre-sorted set Outcome G02: Students will be expected to build and describe 3-D objects. G02.01 create a representation of a given 3-D object using building blocks, and compare the representation to the original 3-D object G02.01 describe a given 3-D object using words such as big, little, round, like a box, or like a can	G01.01 sort a given set of familiar 3-D objects or 2-D shapes using a given sorting rule **G01.02 sort a given set of familiar 3-D objects using a single attribute determined by the student, and explain the sorting rule** **G01.03 sort a given set of 2-D shapes using a single attribute determined by the student, and explain the sorting rule** G01.04 determine the difference between two given pre-sorted sets of familiar 3-D objects or 2-D shapes, and explain a possible sorting rule used to sort them G02: Students will be expected to replicate composite 2-D shapes and 3-D objects. G02.01 select 2-D shapes from a given set of 2-D shapes to reproduce a given composite 2-D shape G02.02 select 3-D objects from a given set of 3-D objects to reproduce a given composite 3-D object G02.03 predict and select the 2-D shapes used to produce a composite 2-D shape, and verify by deconstructing the composite shape G02.04 predict and select the 3-D objects used to produce a composite 3-D object, and verify by deconstructing the composite object G03: Students will be expected to identify 2-D shapes in 3-D objects. G03.01 identify the shape of the faces of a 3-D object G03.02 identify 3-D objects in the environment that have faces that are a given 2-D shape	G01.01 determine the differences between two given presorted sets and explain the sorting rule. G01.02 identify and name two common attributes of items within a given sorted group G01.03 sort a given set of 2-D shapes (regular and irregular) according to two attributes and explain the sorting rule G01.04 sort a given set of 3-D objects according to two attributes and explain the sorting rule G02: Students will be expected to recognize, name, describe, compare, and build 3-D objects, including cubes and other prisms, spheres, cones, cylinders, and pyramids. **G02.01 sort a given set of 3-D objects and explain the sorting rule** G02.02 identify common attributes of cubes and other prisms, spheres, cones, cylinders, and pyramids from given sets of the same 3-D objects G02.03 identify and describe given 3-D objects with different dimensions G02.04 identify and describe given 3-D objects with different positions G02.05 create and describe a representation of a given 3-D object using materials such as modelling clay G02.06 identify and name examples of cubes and other prisms, spheres, cones, cylinders, and pyramids found in the environment **G04: Students will be expected to identify 2-D shapes as part of 3-D objects in the environment.** **G04.01 compare and match a given 2-D shape, such as a triangle, square, rectangle, or circle, to the faces of 3-D objects in the environment** **G04.02 name the 2-D faces of a given 3-D object**	cones, cylinders, pyramids, and cubes and other prisms G01.02 identify the shape of the faces of a given 3-D object **G01.03 determine the number of faces, edges, and vertices of a given 3-D object** G01.04 sort a given set of 3-D objects **according to the number of faces, edges, or vertices**
2-D SHAPES	n/a	G03: Students will be expected to identify 2-D shapes in 3-D objects. G02: Students will be expected to replicate composite 2-D shapes and 3-D objects.	G03: Students will be expected to recognize, name, describe, compare and build 2-D shapes, including triangles, squares, rectangles, and circles. **G03.01 sort a given set of 2-D shapes and explain the sorting rule** G03.02 identify common attributes of triangles, squares, rectangles, and circles from given sets of the same type of 2-D shapes G03.03 identify given 2-D shapes with different dimensions G03.04 identify given 2-D shapes with different positions G03.05 identify and name examples of triangles, squares, rectangles, and circles found in the environment G03.06 create a model to represent a given 2-D shape	G02: Students will be expected to name, describe, compare, create, and sort regular and irregular polygons, including triangles, quadrilaterals, pentagons, hexagons, and octagons according to the number of sides. G02.01 classify a given set of regular and irregular polygons according to the number of sides G02.02 identify given regular and irregular polygons having different dimensions G02.03 identify given regular and irregular polygons having different positions G01: Students will be expected to describe 3-D objects according to the shape of the faces **and the number** of edges and vertices.

| | | | G03.07 create a pictorial representation of a given 2-D shape

G04: Students will be expected to identify 2-D shapes as part of 3-D objects in the environment. | |

STATISTICS AND PROBABILITY PROGRESSION

TOPIC	MATHEMATICS PRIMARY	MATHEMATICS 1	MATHEMATICS 2	MATHEMATICS 3
DATA MANAGEMENT	n/a	n/a	SP01: Students will be expected to gather and record data about self and others to answer questions. SP01.01 formulate a question that can be answered by gathering information about self and others SP01.02 organize data as it is collected using concrete objects, tallies, check marks, charts, or lists SP01.03 answer questions using collected data SP02: Students will be expected to construct and interpret concrete graphs and pictographs to solve problems. SP02.01 determine the common attributes of concrete graphs by comparing a given set of concrete graphs SP02.02 determine the common attributes of pictographs by comparing a given set of pictographs SP02.03 answer questions pertaining to a given concrete graph or pictograph SP02.04 create a concrete graph to display a given set of data and draw conclusions SP02.05 create a pictograph to represent a given set of data using one-to-one correspondence SP02.06 solve a given problem by constructing and interpreting a concrete graph or pictograph	SP01: Students will be expected to collect first-hand data and organize it using tally marks, line plots, charts, and lists to answer questions. SP01.01 record the number of objects in a given set using tally marks SP01.02 determine the common attributes of line plots by comparing line plots in a given set SP01.03 organize a given set of data using tally marks, line plots, charts, or lists SP01.04 collect and organize data using tally marks, line plots, charts, and lists SP01.05 answer questions arising from a given line plot, chart, or list SP01.06 answer questions using collected data SP02: Students will be expected to construct, label, and interpret bar graphs to solve problems. SP02.01 determine the common attributes, title, and axes of bar graphs by comparing bar graphs in a given set SP02.02 create bar graphs (both print and digital) from a given set of data including labelling the title and axes SP02.03 draw conclusions from a given bar graph to solve problems SP02.04 solve problems by constructing and interpreting a bar graph