

# Scope & Sequence: Long Range Planning Support (2019-2020)

This Scope & Sequence guides educators in the timing and duration of units for the Teaching Through Problem Solving component of the Balanced Math Block.

However, some topics should be focused on all year:

- **Building Computational Fluency:** *Computational fluency* (building confidence, knowledge, and skill in working with numbers and operations to improve flexibility, accuracy, efficiency) should be worked on all year.
- **Revisiting and Reaching Forward:** Intentionally revisiting concepts throughout the year is important (e.g. shape names and properties, symmetry, place value, fractions, reading & interpreting graphs, money, time, etc). Additionally, *developing reasoning* (spatial, proportional, algebraic, etc.), *math processes*, and *logical and strategic thinking* supports learning in all strands. Time should also be spent on developing these reasoning and logic skills through appropriate games, puzzles, and other activities.
- Within each unit in **Teaching Through Problem Solving**, educators should consider, and ensure that students are developing, the *Fundamental Concepts and Skills* that underpin the topic. Spatial, Proportional, and Algebraic Reasoning are also overarching ideas that permeate mathematics learning across all strands. Focus on developing these ideas and using them to support learning of various topics.

Timelines	Strand	Grade 1	Grade 2	Grade 3	Connected Math Concepts	Strand	Grade 4	Grade 5	Grade 6	Connected Math Concepts	Strand	Grade 7	Grade 8	Connected Math Concepts
September	P&A 5 weeks	Building A Mathematics Learning Community Through Patterning and Geometry				NS - Counting & Operational Sense G&SS- Properties, Location & Movement	Building A Mathematics Learning Community Through Patterning and Geometry				NS - Operational Sense G&SS- Properties, Location, & Movement	Building A Mathematics Learning Community Through Patterning & Geometry		
		Patterns and Relationships (PA1) Identify, describe, extend and create repeating patterns <i>(Ministry – Patterning to Algebra K-3)</i>	Patterns and Relationships (PA1) Identify, describe, extend and create repeating patterns, growing and shrinking patterns <i>(Ministry – Patterning to Algebra K-3)</i>	Patterns and Relationships (PA1) Describe, extend and create numeric and geometric patterns <i>(Ministry – Patterning to Algebra K-3)</i>	Patterns and Relationships (PA1) Describe, extend and create numeric and geometric patterns; make predictions; investigate repeating patterns with reflections  (From Patterns to Algebra)		Patterns and Relationships (PA1) Investigate relationships in growing and shrinking patterns (using a table of values); investigate repeating patterns with translations  (From Patterns to Algebra)	Patterns and Relationships (PA1) Describe and represent relationships in growing and shrinking patterns; investigate repeating patterns involving rotations  (From Patterns to Algebra)	Patterns and Relationships (PA1) & Variables, Expressions & Equality (PA2) Represent growing linear patterns (table of values, graphs, concrete materials/drawings, algebraic expressions)  (From Patterns to Algebra)	Patterns and Relationships (PA1) & Variables, Expressions & Equality (PA2) Represent growing linear patterns (table of values, graphs, concrete materials/ drawings, algebraic expressions and equations)  (From Patterns to Algebra)		NS - Operational Sense & Proportional Relationships G&SS - Location & Movement		
October	G&SS 4 weeks	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Identify, sort, classify, compose and decompose 3-D figures and 2-D shapes	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Identify, sort, classify, compose and decompose 3-D figures and 2-D shapes	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Compare and sort 3-D figures/2-D shapes; describe relationships between 3-D figures/2-D shapes	MEA - Linear G&SS - Location & Movement NS - Quantity Relationships  Fundamental Concepts & Skills	G&SS 4 weeks	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Identify and classify quadrilaterals and 3-D figures; compare angles to benchmarks; construct 3-D figures from 2-D shapes	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Identify and classify 2-D shapes; compare and sort 3-D figures; identify and construct nets of prisms and pyramids	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Classify and construct polygons and angles; sketch and construct 3-D figures	MEA - Linear, Perimeter, & Area G&SS - Location & Movement NS - Quantity Relationships	G&SS 4 weeks	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Classify triangles, quadrilaterals and prisms; similarity and congruency; construct related lines	Geometric Properties (GSS1) & Geometric Relationships (GSS2) Classify quadrilaterals and circles by geometric properties; investigate geometric relationships between lines, triangles and polyhedra	G&SS - Location & Movement MEA - Linear, Area NS - Quantity Relationships
		Building Number and Equality through Contexts of Measurement					Building Number and Equality through Contexts of Measurement					Building Number and Algebra through Contexts of Measurement		
November	MEA 3 weeks	MEA (M1 & M2) - Linear & Area Estimate, measure and describe length and area using non-standard units; compare, describe and order objects	MEA (M1 & M2) - Linear, Perimeter & Temperature Estimate, measure and record length, perimeter and temperature, using non-standard and standard units; compare, describe and order objects	MEA (M1 & M2) - Linear, Perimeter & Temperature Estimate, measure and record length, perimeter and temperature, using standard units; compare, describe and order objects	G&SS - Properties & Relationships NS - Quantity Relationships, Counting & Operational Sense	MEA 4 weeks	MEA (M1 & M2) - Linear, Perimeter, Mass, Capacity & Elapsed Time Estimate, measure, and record length, perimeter and elapsed time; determine relationships among units and measurable attributes (linear and proportional)	MEA (M1 & M2) - Perimeter, Area, Temperature Change, Elapsed Time & Mass Estimate, measure and record perimeter, temperature change and elapsed time; determine relationships among units and measurable attributes (proportional)	MEA (M1 & M2) - Metric System & Area Estimate, measure and record quantities using metric system (proportional); determine relationships among units and measurable attributes, including area of a triangle	G&SS - Properties & Relationships NS - Quantity Relationships, Operational Sense, Proportional Relationships & Counting	MEA 4 weeks	MEA (M1 & M2) – Real-life applications, Metric Conversions, Area & Surface Area Real-life applications; determine relationships among measurable attributes (metric conversions), including area of a trapezoid, and surface area of right prisms	Measurement Relationships (M2) - Metric Conversions, Area & Surface Area Determine relationships among measurable attributes (metric conversions), including area of a circle and surface area of a cylinder	NS - Quantity Relationships, Operational Sense, Proportional Relationships P&A - Variables, Expressions, & Equality G&SS - Properties & Relationships
		Building Number and Equality through Contexts of Measurement					Building Number and Equality through Contexts of Measurement					Building Number and Algebra through Contexts of Measurement		
December	NSN/ P&A 4 weeks	Quantity Relationships (NS1) & Counting (NS2), Operational Sense (+, -) (NS3) & Expressions & Equality (PA2) Read, represent, compare, and order whole numbers to 50; demonstrate an understanding of magnitude by counting forward to 100 and backwards from 20; solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of strategies; demonstrate an understanding of the concept of equality (Consider appropriate models)	Quantity Relationships (NS1), Counting (NS2), Operational Sense (+, -) (NS3) & Expressions & Equality (PA2) Read, represent, compare, and order whole numbers to 100; demonstrate an understanding of magnitude by counting forward to 200 and backwards from 50, using multiples of various numbers as starting points; solve problems involving the addition and subtraction of one- and two- digit whole numbers, using a variety of strategies; demonstrate an understanding of the concept of equality between pairs of expressions (Consider appropriate models)	Quantity Relationships (NS1) & Counting (NS2), Operational Sense (+, -) (NS3) & Expressions & Equality (PA2) Read, represent, compare, and order whole numbers to 1000; demonstrate an understanding of magnitude by counting forward and backwards by various numbers and from various starting points; solve problems involving the addition and subtraction of single- and multi-digit whole numbers, using a variety of strategies; demonstrate an understanding of the concept of equality between pairs of expressions (Consider appropriate models)	MEA - Linear, Perimeter, & Temperature G&SS - Properties & Relationships DM&P - Data	NS&N 3-4 weeks	Quantity Relationships (NS1), Counting (NS2) & Operational Sense (NS3) Read, represent, compare, and order whole numbers to 10 000; decimal numbers to tenths and simple fractions (tenths); demonstrate an understanding of magnitude by counting forward and backwards by 0.1; solve problems involving the addition and subtraction of single- and multi-digit whole numbers, and involving the addition and subtraction of decimal numbers to tenths and money amount, using a variety of strategies (Consider appropriate models)	Quantity Relationships (NS1), Counting (NS2) & Operational Sense (NS3) Read, represent, compare, and order whole numbers to 100 000; decimal numbers to hundredths; demonstrate an understanding of magnitude by counting forward and backwards by 0.01; solve problems involving the addition and subtraction of decimal numbers to hundredths, using a variety of strategies (Consider appropriate models)	Quantity Relationships (NS1) & Operational Sense (NS2) Read, represent, compare, and order whole numbers to 1 000 000; decimal numbers to thousandths; solve problems involving the multiplication and division of whole numbers and the addition and subtraction of decimal numbers to thousandths, using a variety of strategies (Consider appropriate models)	MEA - Linear, Perimeter, Temperature, Elapsed Time, Area & Volume P&A - Variables, Expressions & Equality DM&P - Data	NS&N 3 weeks	Quantity Relationships (NS1) & Operational Sense (NS2) Represent, compare and order numbers; apply a variety of computational strategies to solve problems involving whole numbers and decimal numbers, (Consider appropriate models)	Quantity Relationships (NS1) & Operational Sense (NS2) Represent, compare and order equivalent representations of numbers, including those involving positive exponents; solve problems involving whole numbers and decimal numbers, using a variety of strategies (Consider appropriate models)	MEA - Metric Conversions, Area & Volume P&A - Variables, Expressions & Equality DM&P - Data
		Building Number and Equality through Contexts of Measurement					Building Number and Equality through Contexts of Measurement					Building Number and Algebra through Contexts of Measurement		

Timelines	Strand	Grade 1	Grade 2	Grade 3	Connected Math Concepts	Strand	Grade 4	Grade 5	Grade 6	Connected Math Concepts	Strand	Grade 7	Grade 8	Connected Math Concepts
January	DM&P 1-2 weeks	Building Number through Contexts of Data Management & Probability				DM&P 2 weeks	Building Proportional Reasoning through Contexts of Probability & Data Management				DM&P 2 weeks	Building Proportional Reasoning through Contexts of Probability/Data Management		
		Probability (DMP3) Describe likelihood of everyday events	Probability (DMP3) Describe likelihood of everyday situations and simple games	Probability (DMP3) Predict and investigate the frequency of a specific outcome in simple probability experiments	NS - Quantity Relationships MEA - Linear, Area, DM&P - Data		Probability (DMP3) Predict the result of a simple probability experiment, then conduct the experiment and compare	Probability (DMP3) Represent probability as a fraction; using systematic lists and area models	Probability (DMP3) Determine theoretical probability and use it to predict frequency of the outcome	NS - Quantity Relationships (Fractions) MEA - Linear, Area		Probability (DMP3) Compare experimental and theoretical probability involving two independent events	Probability (DMP3) Use probability models to make predictions	NS - Quantity Relationships (Fractions) MEA - Linear, Area
February	NSN&N P&A 4 weeks	Quantity Relationships (NS1), Operational Sense (+, -) (NS3) & Expressions & Equality (PA2) Read, represent, compare, and order whole numbers to 50; solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of strategies; demonstrate an understanding of the concept of equality (Consider appropriate models)	Quantity Relationships (NS1), Operational Sense (+, -) (NS3) & Expressions & Equality (PA2) Read, represent, compare, and order whole numbers to 100; solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of strategies; demonstrate an understanding of the concept of equality (Consider appropriate models)	Quantity Relationships (NS1) – Fractions & Operational Sense (x, ÷) (NS3) Use concrete materials to represent fractions; demonstrate an understanding of multiplication and division (Consider appropriate models)	MEA - Linear, Area, Time DM&P - Data & Probability	NSN&N 4 weeks	Quantity Relationships (NS1) – Fractions, Counting (NS2) & Proportional Relationships (NS4) Fractions: Read, represent, compare, order and proper and improper fractions	Quantity Relationships (NS1) - Fractions & Proportional Relationships (NS4) Fractions: Read, represent, compare and order proper and improper fractions and mixed numbers	Proportional Relationships (NS3) & Quantity Relationships (NS1) - Fractions Fractions: Read, represent, compare and order proper and improper fractions and mixed numbers	MEA - Linear, Area, Time G&SS - Properties & Relationships DM & P - Data & Probability	NSN&N 4 weeks	Quantity Relationships (NS1) – Fractions, Operational Sense (NS2) – Fractions & Proportional Relationships (NS3) Fractions: Addition and subtraction of fractions	Quantity Relationships (NS1) – Fractions, Operational Sense (NS2) – Fractions & Proportional Relationships (NS3) Fractions: Solve problems involving fractions	MEA - Linear, Area, Volume G&SS - Properties & Relationships DM & P - Data & Probability
		Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize categorical primary data; read and describe data (concrete graphs and pictographs)	Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize categorical or discrete primary data; read and describe data (tally charts, concrete graphs, line plots, simple bar graphs)				Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize categorical or discrete primary data; read, describe and interpret data (charts and graphs, vertical and horizontal bar graphs); investigate mode	NS - Quantity Relationships, Operational Sense	Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize discrete primary data; read, describe and interpret data (stem-and- leaf plots, double bar graphs); investigate median	Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize discrete or continuous primary data; read, describe and interpret data (broken-line graphs); investigate mean		Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize discrete or continuous primary data; read, describe and interpret data (continuous line graphs); explain relationships between sets of data	NS - Quantity Relationships, Operational Sense & Proportional Relationships	Collection and Organization of Data (DMP1) & Data Relationships (DMP2) Collect and organize categorical, discrete or continuous primary data; read, describe and interpret data (relative frequency tables, circle graphs); make and evaluate convincing arguments
March	DM&P 4 weeks	Location & Movement (GSS3) Describe the relative location of objects using positional language (and maps & symmetrical designs)	Location & Movement (GSS3) Describe and represent the relative locations of objects, and represent objects on a map (and symmetrical designs)	Location & Movement (GSS3) Identify and describe the locations and movements of shapes and objects (and transformations and symmetrical designs)	G&SS - Properties & Relationships	G&SS 2 weeks	Location & Movement (GSS3) Identify and describe the location of an object, using a grid map, and reflect 2-D shapes	Location & Movement (GSS3) Identify and describe the location of an object, using the cardinal directions, and translate 2-D shapes	Location & Movement (GSS3) Describe location in the first quadrant of a coordinate system, and rotate 2-D shapes	G&SS - Properties & Relationships	G&SS 2 weeks	Location & Movement (GSS3) Describe location in the four quadrants of a coordinate system, dilate two-dimensional shapes, and apply transformations to create and analyse designs	Location & Movement (GSS3) Represent transformations using the Cartesian coordinate plane, and make connections between transformations and the real world	G&SS - Properties & Relationships
April	ME 3-4 weeks	Building Number & Equality through Contexts of Measurement				ME 3-4 weeks	Building Number & Algebra through Contexts of Measurement				NSN&N P&A 5 weeks	Building Number & Algebra through Contexts of Measurement		
		MEA (M1 & M2) – Linear, Area, Mass, Capacity & Time Estimate, measure, and describe length, area, mass, capacity and time, using non-standard units of the same size; compare, describe, and order objects, using attributes measured in non-standard units	MEA (M1 & M2) – Linear, Area, Mass, Capacity & Time Estimate, measure, and record length, perimeter, area, mass, capacity and time, using non-standard and standard units; compare, describe, and order objects, using attributes measured in non-standard and standard units	Location & Movement (GSS3) Identify and describe the locations and movements of objects	NS - Quantity Relationships & Operational Sense G&SS - Properties & Relationships		MEA (M1 & M2) - Perimeter, Area & Volume Estimate, measure and record perimeter, area and volume using a variety of strategies; determine the relationships among units and measurable attributes, including the area and perimeter of rectangles	MEA (M1 & M2) – Area, Volume & Capacity Estimate, measure and record perimeter and area, using a variety of strategies; determine the relationships among units and measurable attributes, including the area of a rectangle and the volume of a rectangular prism	MEA(M1 & M2) – Area, Surface Area & Volume Determine the relationships among units and measurable attributes, including the area of a triangle, and the volume (as well as surface area) of a triangular prism	NS - Quantity Relationships, Operational Sense G&SS - Properties & Relationships P&A - Variables, Expressions & Equality		Quantity Relationships (Integers) (NS1) & Operational Sense (Integers) (NS2) Represent, compare and order integers; demonstrate an understanding of addition and subtraction of integers	Quantity Relationships (Integers) (NS1) & Operational Sense (Integers) (NS2) Represent, compare and order integers; solve problems involving integers, using a variety of computational strategies	MEA - Linear & Area P&A - Variables, Expressions, & Equality G&SS - Locati
May	NSN&N P&A 3-4 weeks	Quantity Relationships (NS1) – Fractions Use concrete materials to investigate fractions	Use concrete materials to represent fractions; investigate multiplication and division	Quantity Relationships (NS1), Operational Sense (+, -) (NS3) & Expressions & Equality (PA2) Read represent compare and order numbers to 1000; solve problems involving the addition and subtraction of single- and multi-digit whole numbers; demonstrate an understanding of equality between pairs of expressions, using addition and subtraction of one- and two- digit numbers (Consider appropriate models)	MEA - Linear & Area G&SS - Properties & Relationships	NSN&N P&A 3-4 weeks	Operational Sense (x, ÷) (NS3) & Variables, Expressions & Equality (PA2) Solve problems involving the multiplication and division of single- and multi-digit whole numbers, using a variety of strategies	Variables, Expressions & Equality (PA2) Demonstrate, through investigation, an understanding of the use of variables in equations	Variables, Expressions & Equality (PA2) Use variables in simple algebraic expressions and equations to describe relationships	NS - Quantity Relationships MEA - Area, Volume G&SS - Properties & Relationships	ME 2 weeks	Measurement Relationships (M2) – Area, Volume, Mass & Capacity Determine the relationships among units and measurable attributes, including the volume of a right prism (Consider appropriate models)	Attributes, Units, and Measurement Sense (M1) & Measurement Relationships (M2) – Area, Volume & Capacity Determine the relationships among units and measurable attributes, including the volume of a cylinder (Consider appropriate models)	NS - Operations P&A - Variables, Expressions, & Equality G&SS - Properties & Relationships
		P & A (PA2) – Expressions & Equality Demonstrate an understanding of the concept of equality, using concrete materials and addition and subtraction to 10 (Consider appropriate models)	P & A (PA2) – Expressions & Equality Demonstrate an understanding of the concept of equality between pairs of expressions, using concrete materials, symbols, and addition and subtraction to 18 (Consider appropriate models)	NS - Quantity Relationships & Operational Sense	Operational Sense (x, ÷) (NS3) & Variables, Expressions & Equality (PA2) Solve problems involving the multiplication and division of multi-digit whole numbers, using a variety of strategies; determine missing numbers in Equations (Consider appropriate models)		Operational Sense (x, ÷) (NS2) Solve problems involving the multiplication and division of whole numbers, using a variety of strategies (Consider appropriate models)	Measurement Relationships (M2) – Area, Volume, Mass & Capacity Determine the relationships among units and measurable attributes, including the volume of a right prism (Consider appropriate models)	Attributes, Units, and Measurement Sense (M1) & Measurement Relationships (M2) – Area, Volume & Capacity Determine the relationships among units and measurable attributes, including the volume of a cylinder (Consider appropriate models)	NS - Operations P&A - Variables, Expressions, & Equality G&SS - Properties & Relationships				
Review & Revisit														