Ontario

LONG-RANGE PLAN

Primary Division: Grades 1-3, Mathematics

Organized by Questions

What is a long-range plan and why is it important?

A long-range plan outlines a year-long plan for learning mathematics. It is a living document that is revised as educators become increasingly aware of the abilities, strengths, needs and interests of their students. A thoughtfully developed long-range plan:

- ensures that instruction is sequenced in a manner that aligns with research about learning mathematics;
- allocates the appropriate time for concepts and skills so that students have multiple opportunities to focus on the overall expectations within the grade;
- ensures that all specific expectations are addressed at least once within the school year; and
- recognizes that some expectations need to be revisited several times throughout the year.

Note: These sample long-range plans outline possible sequences of instruction for the school year. There are many ways to structure an effective plan for learning.

How are these long-range plans structured?

Deep learning occurs when specific expectations are connected, are continuously expanded upon, and are revisited in a variety of contexts throughout the year.

Each grade in this long-range plan is organized around ten unifying questions. Each question typically involves several strands and draws on big mathematical themes such as quantity, change, equivalence, dimension, pattern, and uncertainty. Often the same question spans several grades.

These ten questions can be sequenced throughout the year as ten blocks of time, as presented here in this long-range plan. Alternatively, the questions could be split into smaller, shorter blocks, with the embedded strands and topics serving as different contexts that would spiral the ten questions throughout the year.

While the long-range plan is presented as month-long blocks, this timing should be held loosely, and adjusted according to the learning readiness of students. The following are other considerations when using this long-range plan.

Considerations

- Sample long-range plans for each grade level include all overall and specific expectations from strands B through F.
- The overall expectation from Strand A (Social-Emotional Learning Skills and the Mathematical Processes) is integrated and taught in connection with the other strands throughout the school year.
- In developing long-range and daily plans, consider opportunities to teach and reinforce social-emotional learning skills and mathematical processes, as well as transferable skills, in order to help students develop confidence, cope with challenges, think critically and creatively, and develop a positive identity as a math learner.
- Mathematical modelling (Algebra, C4) provides opportunities for students to authentically engage in learning with everyday situations that involve mathematics. Tasks that require the process of mathematical modelling can be strategically situated throughout the year to support students in making connections among mathematical concepts, strands, and disciplines, and to provide opportunities for assessing the integration and application of learning.
- Coding (Algebra, C3) can be used to solve problems and help deepen students' understanding of mathematical concepts; it should be strategically addressed and assessed throughout the year, as appropriate.
- Some concepts and skills require ongoing attention so that students can develop proficiency and deep, lasting learning. Number Talks, Number Strings, and other math talk prompts can be used at the beginning of math classes to reinforce and strengthen number relationships, spatial relationships, math facts, mental math strategies, and problem-solving skills.

Reflective questions when planning

- What key concepts, models, and strategies do students need more time to develop?
- Does the long-range plan revisit expectations later? If not, how might I adjust the plan so it does? What prior learning is assumed in order for other expectations to be addressed?
- How can I create opportunities for students to continue to practise and consolidate learning when they are engaged in new learning?

Long-Range Plan: Primary Division (Grades 1-3)

Each month is organized around a unifying question. Strands connected to each question are listed below. The Social-Emotional Learning (SEL) Skills and the Mathematical Processes are to be integrated throughout each of the topics below as appropriate.

	Grade 1	Grade 2	Grade 3
Sep	**Who are we?** Number, Data, Spatial Sense	**Who are we?** Number, Data, Spatial Sense	**Who are we?** Number, Data, Spatial Sense
Oct	**How are numbers used in our world?** Number, Algebra, Data, Spatial Sense	**How much is that?** Number, Algebra, Data, Spatial Sense	**How much is 1000?** Number, Algebra, Data, Spatial Sense
Nov	**What comes first? What comes next?** Number, Algebra, Data, Spatial Sense	**What comes first? What comes next?** Number, Algebra, Data, Spatial Sense	**What comes first? What comes next?** Number, Algebra, Data, Spatial Sense
Dec	**Joining and separating: What do we have now?** Number, Algebra. Spatial Sense	**Joining and separating: What do we have now?** Number, Algebra. Spatial Sense	**When is addition and subtraction useful?** Number, Algebra, Spatial Sense, Financial Literacy
Jan	**What shapes are in our world?** Number, Algebra, Data, Spatial Sense	**How can we describe 2D shapes?** Number, Algebra, Data, Spatial Sense	**How can we describe 3D objects and space?** Data, Spatial Sense
Feb	**What is a pattern?** Number, Algebra, Spatial Sense	**Are they the same?** Number, Algebra, Spatial Sense	**Are they the same?** Number, Algebra, Spatial Sense
Mar	**How much is 50?** Number, Algebra, Data, Financial Literacy	**How much more?** Number, Algebra, Data, Spatial Sense, Financial Literacy	**How can we describe things that repeat?** Number, Algebra, Spatial Sense, Financial Literacy
Apr	**What's the difference?** Number, Algebra, Data, Spatial Sense, Financial Literacy	**What are different ways to get there?** Number, Algebra, Data, Spatial Sense, Financial Literacy	**What are different ways to get there?** Number, Algebra, Data, Spatial Sense, Financial Literacy
May	**How can we share things equally?** Number, Algebra, Spatial Sense	**How can we share things equally?** Number, Algebra	**How can we share things equally?** Number, Algebra, Data
Jun	**How much is that?** Number, Algebra, Data, Financial Literacy	**Equal groups: How much is that?** Number, Algebra, Financial Literacy	**Equal groups: How much is that?** Number, Algebra

Grade 1 Long-Range Plan

	Topics and Expectations	Connecting the Learning
Sep	**Who are we?** D: Data collection & organization D: Data visualization D: Data analysis B: Count to 20 E: Relative location E: Directions for movement Number: B1.1; B1.2; B1.3; B1.5 Data: D1.1; D1.2; D1.3; D1.4; 1.5 Spatial Sense: E1.4, E1.5	Students learn about their class and classmates. They ask questions, collect information about people and things (their classmates, their hobbies, and things they might collect), and put that information into concrete graphs and pictographs. They work with numbers to approximately 20 as they count the number of people or objects and match the count of tallies to the amounts in the graph. They describe where their desks are in the classroom (and other objects) and use positional language to create instructions for their peers.
Oct	**How are numbers used in our world?** B: Estimate & count quantities to 50 D: Data collection & analysis B: Math facts (+/–) C: Coding E: Location Number: B1.1; B1.2; B1.3; B1.4; B1.5; B2.2 Algebra: C3.1; C3.2 Data: D1.4; D1.5 Spatial Sense: E1.5	Students name and notice how numbers are used in everyday life. They connect amounts with the count. They subitize amounts; they estimate amounts; they count amounts. They notice patterns in the counting sequence. They count amounts by 2, 5, and 10 and recognize that the count remains the same regardless of the strategy. They use numbers as they write code to program a bot, and they give distances to places around the room by counting the number of steps.
Nov	**What comes first? What comes next?** C: Extend patterns E: Order by attribute B: Counting sequences to 50 C: Number patterns to 50 B: Ordering by number D: Data analysis (frequency) C: Coding sequences E: Calendars D: Likelihood Number: B1.3; B1.4; B1.5 Algebra: C1.1; C1.3; C1.4; C3.1; C3.2 Data: D1.3; D1.4; D:1.5; D2.1; D2.2 Spatial Sense: E2.1; E2.2; E2.3	Students describe how things are ordered. They notice regularities in patterns and use these to predict what comes next. They translate the patterns into other forms and notice the same pattern applies. They see patterns in the counting sequence to 50 and use this to order numbers and amounts. They compare and order objects by attribute (length, mass, capacity, area, angle) and recognize that comparing different attributes produces a different order. They analyze and order data by frequency. They put code in the right order so to reach a desired destination. They use calendars to describe what comes next, and describe the likelihood that an event will happen.
Dec	**Joining and separating: What do we have now?** B: Change situations (+/–) B: Part-whole situations (+/–) B: Mental math to 20 C: Equivalent expressions E: Compose-decompose shapes & objects Number: B1.1; B1.2; B1.3; B1.4; B2.1; B2.2; B2.3; B2.4 Algebra: C2.2; C2.3 Spatial Sense: E1.2; E1.3	Students join, separate, and combine amounts (compose and decompose) and represent the amounts with addition and subtraction. They use counting and direct modelling to find an unknown result, starting point, or change. They create part-whole models to represent the actions. They describe their mental math strategies, and notice that the same situation can be represented with an addition and subtraction number sentence. As they come to trust the count, they recognize that math facts exist and begin to develop automaticity. They also join, separate and combine shapes and describe the results. They notice what smaller shapes it takes to create a larger shape (composing) and the shapes that are within shapes (decomposing).

C4: Integrated Modelling Task		
Jan	**What shapes are in our world?** E: Sort, build, describe 2D shapes & 3D objects E, B: Matching halves D: Sort sets of data C: Patterns with shapes Number: B1.6; B1.7 Algebra: C1.2 Data: D1.1 Spatial Sense: E1.1; E1.2; E1.3	Students sort and describe shapes and objects using attributes. They identify common shapes. They compose and decompose them. They identify matching halves by physically and visually manipulating the shapes to show they are the same. They create patterns using an attribute.
Feb	**What is a pattern?** C: Pattern types & rules C: Translate/represent patterns C: Quantities that change C: Patterns with numbers (to 50) C: Coding patterns E: Spatial patterns (sorting) B: Number sequences Number: B1.3; B1.5; Algebra: C1.1; C1.2; C1.3; C1.4; C2.1; C2.2; C3.1; C3.2 Spatial Sense: E1.1	Students recognize and describe a variety of patterns. They identify regularities in patterns and use that to extend the pattern and predict what comes next. They work with number patterns, spatial patterns, and patterns in code. They identify what changes and what stays the same.
Mar	**How much is 50?** B: Estimate & count B: Number relationships to 50 B: Addition & subtraction B: Mental math to 20 F: Coins & bills to 50 D: Data analysis (frequency) C: Number patterns C: Equivalent expressions C: Coding Number: B1.1; B1.2; B1.3; B1.4; B1.5; B2.1; B2.2; B2.3; B2.4; Algebra: C1.4; C2.2; C2.3; C3.1; C3.2 Data: D1.3: D1.4; D1.5; Financial Literacy: F1.1	Students describe amounts that make 50, as well as amounts leading up to 50 (e.g., amounts to 10, 20, 30, and 40). They work with anchors of five and ten. They estimate. They count data. They connect a count to addition and subtraction. They use coins and bills, and describe "how much more" is needed to make an amount. They create code that moves a bot 50 units as a sequence of smaller units. They notice patterns in the counting sequence to 50 and write equivalent expressions that total 50 (or other amounts).
Apr	**What's the difference?** B: Change situations (+/−) B: Compare situations (+/−) B: Math facts B: Mental math to 20 E: Sort shapes & objects F: Coins & bills to 50 C: Equivalent expressions D: Sort (compare) data Number: B1.1; B1.2; B2.1; B2.2; B2.3; B2.4 Algebra: C2.2; C2.3 Data: D1.1 Spatial Sense: E1.1 Financial Literacy: F1.1	Students solve comparison situations where the difference, the larger amount, or the smaller amount is unknown. They represent the situations, including situations involving money, concretely or with drawings. They represent their thinking with addition and subtraction. They use counting and draw on math facts to determine differences. They also compare shapes and objects and describe how one is different from the other. They use these to sort and describe shapes.
C4: Integrated Modelling Task		

May	**How can we share things equally?** E: Matching halves E: Compare attributes B: Equal sharing (fractions) B: Equal groupings (× ÷) B: Halves, fourths C: Equivalent expressions Number: B1.6; B1.7; B1.8; B2.5 Algebra: C2.3 Spatial Sense: E1.3; E1.1	Students identify matching halves by comparing lengths and areas. They identify attributes that are equal. They split amounts (areas) equally among 2 or 4 and describe each amount as one-half or one-fourth of the whole. They notice that 4 groups of one-fourth make a whole. They also share collections equally among 2 or 4, and split any remainders into halves or fourths.
Jun	**How much is that?** B: Estimate & count B: Change situations (+/−) B: Compare situations (+/−) B: Math facts B: Mental math to 20 F: Coins & bills to 50 C: Equivalent expressions D: Compare data Number: B1.1; B1.2; B1.4; B1.5; B2.1; B2.2; B2.3; B2.4 Algebra: C2.3 Data: D1.1 Financial Literacy: F1.1	Students continue to work with amounts to 50 in various contexts. They determine total amounts, as well as the amounts that make up a total, and write equivalent number sentences. They count, estimate, draw on math facts, and use mental math strategies. They connect data to graphs and determine money amounts. They also consider the parallel question, “how much more is that?”

Grade 2 Long-Range Plan

	Topics and Expectations	Connecting the Learning
Sep	**Who are we?** D: Data collection & organization D: Data visualization D: Data analysis (mode) D: Likelihood B: Amounts to 100 E: Maps & movement Number: B1.1; B1.2; B1.4 Data: D1.1; D1.2; D1.3; D1.4; 1.5; D2.1; D2.2 Spatial Sense: E 1.4, E1.5	Students learn about their class and their classmates. They ask questions that focus on two pieces of information and sort, organize, represent, and analyze the data in ways appropriate for grade 2. They work with numbers to approximately 100 as they count the number of people or objects and match the count of tallies to the amounts in the graph. They identify the mode and use the language of likelihood to make predictions about another class. They test their predictions by surveying another class. They also create simple maps of their classroom and other places that are familiar to them. They describe the relative position of several objects in the class and explain how to get from one object to the next.
Oct	**How much is that?** B: Compose & decompose amounts to 100 C: Number relationships D: Data visualization & analysis E: Non-standard units (length) B: Math facts (+/–) C: Coding E: Maps & movement Number: B1.1; B1.2; B1.3; B1.4; B1.5; B2.2; B2.3; B2.4 Algebra: C1.4; C3.1; C3.2 Data: D1.3; D1.4; D1.5 Spatial Sense: E1.4; E1.5; E2.1	Students consider how numbers are used to describe "how much". They continue to strengthen their subitizing abilities and use number relationships to build their mental addition and subtraction strategies and math facts. They compose and decompose amounts to 100 and record their findings as number sentences. They analyze sets of data and graphs and draw conclusions based on quantities represented by the graphs. They use numbers and non-standard units to describe how much length an object has, and move from answering comparison questions (Which is longer?) to measurement questions (How long? How much longer?). Lastly, they write code that programs a bot to travel a certain distance, in a certain direction.
Nov	**What comes first? What comes next?** C: Spatial patterns & rules C: Code concurrent & sequential events E: Order by length (distance) E: Order by duration (time) B: Number sequences to 200 C: Number relationships D: Data analysis D: Likelihood Number: B1.2; 1.3; B1.4 Algebra: C1.1; C1.2; C1.3; C1.4; C3.1; C3.2 Data: D1.3; D1.4; D:1.5; D2.1; D2.2 Spatial Sense: E2.1; E2.4	Students explain how things are ordered and sequenced. They describe patterns in geometric designs and explain "what comes next" based on pattern rules. They look at number sequences to 200, and use place value and other patterns to order numbers. They put code in the right order so as to reach a desired destination or result. They compare objects by their measuring lengths, and order events by duration, as they engage in simple tasks and contests that can be timed (e.g., the amount of time it takes for an object to roll a given distance along a ramp at different heights). They present the data in tables and graphs. Based on results of these tasks and contests, they predict the likely order of future events.

Dec	**Joining and separating: What do we have now?** B: Change situations (+/–) B: Part-whole situations (+/–) B: Mental math to 50 B: Math facts to 20 C: Symbols as variables C: Equivalence (+/–) E: Compose-decompose area Number: B1.1; B2.1; B2.2; B2.3; B2.4 Algebra: C2.1; C2.2; C2.3 Spatial Sense: E1.2	Students describe what happens when things are joined, separated, and combined. They represent these problem types with part-whole models, and use direct modeling, counting strategies, their math facts and mental math strategies to solve for unknown quantities. They represent their thinking with number sentences and use symbols to show variables. They also join, separate and combine 2D areas (compose and decompose) and demonstrate that the area of a shape remains constant regardless of how the parts are arranged.
C4: Integrated Modelling Task		
Jan	**How can we describe 2D shapes?** E: Compare, describe, & identify 2D shapes E: Measure & draw lengths D: Venn & Carroll diagrams B: Fractions of shapes (part-whole) C: Patterns with shapes C: Coding to make shapes Number: B1.6; B1.7 Algebra: C1.1; C1.2; C1.3 Data: D1.1 Spatial Sense: E1.1; E1.2; E1.3; E2.1; E2.2; E2.3	Students compare, describe, identify and measure 2D shapes. They use Venn and Carrol diagrams to show relationships between shapes and their attributes. They are introduced to centimetres and metres as standard units for measuring length. They understand that measuring tools, such as rulers, represent the repetition and count of units. They use rulers, as well as other strategies and tools, to measure and draw various lengths, distances, and shapes. Students also construct 2D shapes using code, and create spatial patterns based on the attributes of shapes. They compose and decompose the areas of 2D shapes and recognize, for example, that there are many ways to show a half of a rectangle. They continue to split 2D shapes into smaller equal parts and use fractions to describe the resulting shapes.
Feb	**Are they the same?** C: Pattern types & rules C: Translate & represent patterns E: Congruency E: Different units of length, including centimetres & metres E: Conservation of area C: Equivalent relationships C: Coding events B: Fractions as equal parts & equal shares B: Equivalent fractions Number: B1.1; B1.3; B1.6; B1.7 Algebra: C1.1; C1.2; C1.3; C1.4; C2.1; C2.2; C2.3; C3.1; C3.2 Spatial Sense: E1.2; E1.3; E2.1; E2.2; E2.3	Students determine if quantities, shapes, patterns, and movements are the same. They decide if patterns, translated into different forms, represent the same pattern rule. They measure lengths and match angles to identify congruent elements in 2D shapes and determine if the shapes themselves are congruent. They compare lengths measured in centimetres, metres, or familiar non-standard units, and decide if the lengths are the same even though the number of units may differ. They examine silhouettes of shapes that have been rearranged to form other shapes, and determine if the areas are the same. They look at both sides of an equal sign to determine if they represent the same amount. They examine two sets of code and predict whether they both lead to the same destination or result. And they look at different ways of representing fractions, both as equal parts of a whole and as equal shares, and notice that the same fraction can represent different situations. In doing so, they also notice that the same quantity can be described by different but equivalent fractions.

Mar	**How much more?** B: Compare situations (+/–) C: Equalize expressions E: Measure length (cm, m) E: Measure duration (time) B: Mental math to 50 F: Coins & bills to 200 D: Data analysis (frequency) D: Likelihood (complement) Number: B1.1; B1.2; B1.3; B1.4; B2.1; B2.2; B2.3; B2.4; Algebra: C1.4; C2.1; C2.2; C2.3; C3.1; C3.2 Data: D1.3: D1.4; D1.5; (D2.1) Spatial Sense: E2.2; E2.3; E2.4 Financial Literacy: F1.1	Students answer the question "How much more?" as they consider comparison situations where the difference, the larger amount, or the smaller amount is unknown, including situations that involve money. They determine what amount is needed to equalize and balance expressions. They measure and compare times and length measurements and use the count of units to describe how much more. They look at graphs and tally charts and determine how much more frequently one response occurs than another. As they compare two amounts, they recognize that one amount and its complement create a whole. In all these contexts, they explain how addition and subtraction can be used to describe, represent and answer the question how much more.
Apr	**What are different ways to get there?** E: Maps & movement E: Compare distances E: Compare times B: Estimation & counting strategies B: Compose & decompose numbers to 200 B: Mental Math to 50 F: Money amounts to 200 C: Coding routes D: Logic diagrams (flowchart) Number: B1.1; B1.3; B1.4; B2.1; B2.2; B2.3; B2.4 Algebra: C2.1; C2.2; C2.3; C3.1; C3.2 Data: D1.1 Spatial Sense: E1.4; E1.5; E2.3; E2.4 Financial Literacy: F1.1	Students use and describe different strategies and paths to arrive at a common destination, whether that be spatial or numerical. They create maps of different areas and describe, measure, and compare routes to arrive at a common destination. They do similar things as they create concurrent code and determine which is the most efficient path. They measure and compare the time it takes to do a task using different approaches, and use logic diagrams and flowcharts to describe sequences. They also compare different ways to get to a numerical calculation, or ways that an amount might be composed or decomposed. They model number relationships with number lines, describe and compare mental math strategies, and apply their math facts.
C4: Integrated Modelling Task		
May	**How can we share things equally?** B: Fractions B: Partitive division B: Relationships among the operations C: Equivalent expressions Number: B1.6; B1.7; B2.1; B2.6 Algebra: C2.2	Students engage in situations where they must share amounts equally. They share amounts where the portions are whole number amounts, where the portions are fractional amounts, and where the portions are amounts greater than 1. They share their drawings and strategies, and use a combination of words and numbers to describe the fractional size of the portion. They compare two different equal sharing situations, and recognize that if the amount to be shared is the same, the number of sharers determines who gets more, and if the number of sharers is the same, the amount to be shared is the deciding factor. They represent their strategies with drawings and addition and subtraction number sentences. They come to see that the operation of division can also be used to describe the sharing of an amount equally.

Jun	**Equal groups: How much is that?** B: Skip count B: Even & odd numbers B: Multiplication B: Quotative division F: Coins & bills to 50 C: Equivalent expressions Number: B1.1; B1.4; B1.5; B2.1; B2.5 Algebra: C2.2 Financial Literacy: F1.1	Students work with equal groups and use skip counting to determine the total. They come to see that numbers that can be split into equal whole number groups are called even and ones that cannot are called odd. They represent and solve problems involving repeated groups, including those with fractional amounts, and learn that multiplication can be used to represent the total product. Likewise, they represent and solve problems where they must split amounts into equal groups, and find out how many are in each group. They come to see that division can also represent grouping situations as well as sharing situations. They show how the same equal group situation can be modeled using addition, subtraction, multiplication, and division.

Grade 3 Long-Range Plan

	Topics and Expectations	Connecting the Learning
Sep	**Who are we?** D: Data collection & organization D: Data visualization (many-to-one) D: Data analysis (mode only) D: Likelihood B: Amounts to 1000 B: Skip counting & ratios E: Maps, location & movement Number: B1.1; B1.2; B1.4; B2.9 Data: D1.1; D1.2; D1.3; D1.4; 1.5; D2.1; D2.2 Spatial Sense: E 1.4	Students ask questions and gather information about their school community. They research its history, sporting records, and trends, and build an online survey to gather current information, both qualitative and quantitative, from students and teachers. They organize and represent data in a variety of ways, and use different scales (e.g., 1:2, 1:5, and 1:10) to represent larger sets of data. They look at maps of the school and write instructions on how to get from one point to another. They collect their findings and graphs and present them as an orientation guide to the school.
Oct	**How much is 1000?** B: Compose, decompose & count amounts to 1000 B: Compare & round amounts B: Place value C: Number relationships E: Metric units (km, m, mm) D: Analyzing data Number: B1.1; B1.2; B1.3; B1.4; B1.5; B2.3 Algebra: C1.4; C2.3 Data: D1.3; D1.5 Spatial Sense: E2.1	Students consider ways to represent 1000. They visualize 1000 and use that benchmark to estimate other amounts. They create a class "thousands chart" and use that to count to 1000 in different ways. They reaffirm the counting patterns through each of the hundreds, and round numbers to nearby intervals. They compose and decompose amounts to 1000 and use addition and subtraction to make comparisons. They identify place value relationships, including the "times 10" relationships between the columns. They look at bar graphs involving populations up to 1000, and cut out and reassemble the bars to show how the population is composed and decomposed. They use measurement units (km, m, mm) to visualize and compare what 1000 looks like with different units. They recognize that the actual size of 1000 depends on the unit being counted.
Nov	**What comes first? What comes next?** C: Patterns & rules C: Code events B: Number sequences to 1000 E: Measure mass E: Measure capacity E: Compare areas of shapes D: Data analysis D: Order by likelihood Number: B1.2; 1.3; B1.4; B1.5 Algebra: C1.1; C1.2; C1.3; C1.4; C3.1; C3.2 Data: D1.3; D1.4; D:1.5; D2.1 Spatial Sense: E2.1; E2.2; E2.3; E2.4; E2.5; E2.7	Students describe how things are ordered. They identify pattern rules to predict what comes next. They see patterns in the counting sequence to 1000 and use this to order numbers and amounts. They compare and order different objects by their mass and capacity after measuring them with different non-standard units. They notice that, although different units may produce different counts, the order remains constant. They compare and order the areas of shapes by matching or rearranging the areas, and show that the same area can come in different shapes. They put code in the right order so as to reach a desired destination. They analyze different graphs and frequency tables and use them to predict the likelihood that an event would happen.

Dec	**When is addition & subtraction useful?** B: Change, combine, & compare situations E: Measure perimeter E: Compare measurements B: Mental math & algorithms C: Symbols as variables C: Equivalence F: Make change Number: B1.1; B1.5; B2.1; B2.3; B2.4; B2.5 Algebra: C2.1; C2.2; C2.3 Spatial Sense: E2.1; E2.3; E2.4; E2.8; E2.9 Financial Literacy: F1.1	Students come to see that addition and subtraction is useful when needing to join and separate amounts, combine amounts, or compare amounts. These include situations where they must make change. They represent these problem types with part-whole models and number sentences. They use variables to represent unknown amounts, and recognize that what is unknown can appear anywhere in an equation. They also use addition and subtraction to solve perimeter problems, and see them as the joining or separating of lengths. They add and subtract to compare measurements involving length, mass, and capacity. They use mental math strategies and basic facts to solve for unknown quantities. They also learn to use standard addition and subtraction algorithms when quantities are too large to manipulate mentally.
C4: Integrated Modelling Task		
Jan	**How can we describe 3D objects and space?** E: Compare, describe, & identify 3D objects E: Measure 3D objects (lengths, mass, capacity) E: Measure areas E: Compare cm2 & m2 D: Venn, Carroll, & tree diagrams Data: D1.1 Spatial Sense: E1.1; E1.2; E1.3; E2.1; E2.2; E2.3; E2.4; E2.5; E2.8; E2.9	Students compare, describe, identify and measure 3D objects and space. They use Venn, Carrol, and tree diagrams to show relationships among prisms, pyramids, cylinders, and cones and their attributes. They measure the mass and capacity of 3D objects as well as their different lengths. They measure the areas of different spaces and shapes, including those with curved sides. They use non-standard and standard units of area (cm^2 and m^2) and decompose and recompose units to avoid gaps and overlaps. They compare the area of a square centimetre to a square metre, and create different shapes with those same areas. They use these benchmark shapes to estimate the areas of shapes and spaces.
Feb	**Are they the same?** C: Translate/represent patterns C: Equivalent expressions B: Compose-decompose B: Compare & equalize situations B: Skip counting, repeated addition, & multiplication B: Equivalent fractions & ratios C: Coding events E: Congruent 3D objects D: Mean as equalizing amounts D: Mean, mode & likelihood Number: B1.1; B1.4; B1.5; B1.6; B1.7; B2.2 Algebra: C1.1; C1.2; C1.3; C1.4; C2.1; C2.2; C2.3; C3.1; C3.2 Spatial Sense: E1.3	Students determine if quantities, patterns, shapes, expressions, and movements are equal, and if not, how they might be equalized. They decide if repeating elements in patterns, translated into different forms, are equivalent. They compare different expressions, represented with different operations and amounts, and determine if they are equal. If they are not, they adjust the expressions to make them the same. They show how skip counting, repeated addition, and multiplication are the same, and do the same with division. They compare two different equal share situations involving fractions and equalize them so that all people in both situations receive the same amount. From this they identify equivalent fractions and ratios. They compare code and use repeating events to produce the same result. They identify congruent elements 3D objects and determine if the objects themselves are congruent. They look at bar graphs, rearrange the bars to level and equalize them, and use this to explain the mean. They compare the mean and the mode and discuss how each might be used to describe likelihood.

Mar	**How can we describe things that repeat?** C: Repeating elements & operations C: Code repeating events B: Skip count B: Multiplication & division facts B: Repeated unit fractions B: Multiplication & division; ratio C: Equivalent expressions E: Clocks, scales & units Number: B1.4; B2.1; B2.2; B2.6; B2.7; B2.8; B2.9 Algebra: C1.1; C1.2; C1.3; C2.1; C2.2; C2.3; C3.1; C3.2 Spatial Sense: E2.2 Financial Literacy: F1.1	Students describe and represent repeating elements, movements, and operations, including through the use of code. They connect skip counting and repeated addition to multiplication and division as they learn their 2, 5, and 10 multiplication and division facts. They also represent the multiplication and division of numbers up to 10 × 10. Students see how the repeated addition of a unit fraction can be represented with a numerator. They extend the idea of repeated groups to visualize situations involving ratios where they must scale quantities up. And they use the idea of scale to understand and read the scales on an analogue clock to tell time, one hand at a time. They compare analogue clocks with digital clocks and practise telling time throughout the year.
Apr	**What are different ways to get there?** B: Mental math C: Equivalent expressions C: Coding events D: Logic & tree diagrams Number: B2.3; B2.4; B2.5 Algebra: C2.1; C2.2; C2.3; C3.1; C3.2 Data: D1.1 Spatial Sense: E1.4 Financial Literacy: F1.1	Students use and describe different strategies and be spatial or numerical. They describe different paths to move from one location to another, using distances and turns in their instructions. They create concurrent code, with repeating and non-repeating events, and determine the most efficient path (and code). They use logic diagrams and flowcharts to describe sequences and choices. They also compare different ways to get to a numerical calculation, or ways that an amount might be composed or decomposed. They model equivalent expressions using tools such as number lines. They compare mental math strategies and various standard algorithms as different approaches to the same end.
C4: Integrated Modelling Task		
May	**How can we share things equally?** B: Fractions B: Partitive division B: Relationship between division & multiplication C: Equivalent expressions D: Many-to-one scales Number: B1.6; B1.7; B2.1; B2.6; B2.7 Algebra: C2.2 Data: D1.3; D1.5	Students connect equal sharing to fractions, (partitive) division, and multiplication. They solve equal share problems involving fractions and use this to identify equivalent fractions. They solve equal share problems involving whole numbers and represent situations with drawings, concrete materials, as well as with multiplication and division expressions. They see how the same situation can be described with multiplication and division. They use these types of situations to continue practising 2, 5, and 10 multiplication and division facts and to extend these to include multiplication facts to 10 and related division facts. They apply this understanding as they choose a scale to represent a set of data along an axis.
Jun	**Equal groups: How much is that?** B: Skip count B: Multiplication B: Quotative division, including with fractions B: Relationship between multiplication & division C: Equivalent expressions C: Repeating operations Number: B2.1; B2.2; B2.6; B2.7; B2.8 Algebra: C1.1; C2.2	Students work with ratios and equal groups as they extend their understanding of multiplication and division. They solve problems with equal groups and make connections between multiplication and skip counting as they learn that multiplication determines the total product when the number of groups and size of the groups are known. Students also solve problems where a total must be split into equal groups, and learn that division can be used to solve both equal group and sharing situations. They describe the relationship between multiplication and division and work with quantities involving whole numbers, fractions, and fractions greater than 1.