Number = N **Algebra = A** **Geometry = G** **Coordinate Geometry = CG**
Measurement = M **Patterns = P** **Statistics = ST** **Financial Literacy = F**

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: How can the infinite nature of place value enhance insight into number?

LEARNING OUTCOME
5N1 Students analyze patterns in place value.

5N1.1 UNDERSTANDING

1. Place value symmetry extends infinitely to the left and right of the one's place.

KNOWLEDGE

1. A number expressed with more decimal places is more precise.
2. A zero in the rightmost place of a decimal number does not change the value of the number.
3. There are infinitely many decimal numbers between any two decimal numbers.

SKILLS & PROCEDURES

1. Relate the names of place values that are the same number of places to the left and right of the ones place.
2. Express numbers within 10 000 000, including decimal numbers to thousandths, using words and numerals.
3. Relate a decimal number to its position on the number line.
4. Determine a decimal number between any two other decimal numbers.
5. Compare and order numbers, including decimal numbers.
6. Express the relationship between two numbers, including decimal numbers, using <, >, or =.
7. Round numbers, including decimal numbers, to various places according to context.

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: In what ways can the processes of addition and subtraction be articulated?

LEARNING OUTCOME

5N2 Students add and subtract within 1 000 000, including decimal numbers to thousandths, using standard algorithms.

5N2.1 UNDERSTANDING

1. Addition and subtraction of numbers with many digits is facilitated by standard algorithms.

KNOWLEDGE	SKILLS & PROCEDURES
1. Standard algorithms are efficient procedures for addition and subtraction.	1. Add and subtract numbers, including decimal numbers, using standard algorithms. 2. Assess the reasonableness of a sum or difference by estimating. 3. Solve problems using addition and subtraction, including problems involving money.

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: In what ways can divisibility characterize natural numbers?

LEARNING OUTCOME

5N3 Students determine divisibility of natural numbers.

5N3.1 UNDERSTANDING

1. A number is divisible by another number if it can be divided with a remainder of 0.

KNOWLEDGE	SKILLS & PROCEDURES
1. A divisibility test can be used to determine factors of a natural number. 2. Division by zero is not possible.	1. Investigate divisibility by natural numbers from 0 to 10. 2. Generalize divisibility tests for 2, 3, and 5. 3. Determine factors of natural numbers using divisibility tests.

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: In what ways can the processes of multiplication and division be articulated?

LEARNING OUTCOME
5N4 Students multiply and divide natural numbers within 100 000, including with standard algorithms.

5N4.1 UNDERSTANDING

1. Standard algorithms are efficient procedures for multiplication and division.

KNOWLEDGE

1. Multiplication and division of numbers with many digits is facilitated by standard algorithms.

SKILLS & PROCEDURES

1. Explain the standard algorithms for multiplication and division of natural numbers.
2. Multiply up to 3-digit by 2-digit natural numbers using standard algorithms.
3. Divide 3-digit by 1-digit natural numbers using standard algorithms.
4. Express a quotient with or without a remainder according to context.
5. Assess the reasonableness of a product or quotient using estimation.
6. Solve problems using multiplication and division of natural numbers.

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: In what ways can fractions communicate numbers greater than one?

LEARNING OUTCOME
5N5 Students interpret improper fractions.

5N5.1 UNDERSTANDING

1. Fractions allow counting and measuring between whole quantities.
2. Improper fractions and mixed numbers that represent the same number are associated with the same point on the number line.

KNOWLEDGE

1. A fraction can represent quantities greater than one.
2. An improper fraction has a numerator that is greater than its denominator.
3. Natural numbers can be expressed as improper fractions with a denominator of 1.
4. A mixed number of the form $A\frac{b}{c}$, composed of a number of wholes, A, and a fractional part, $\frac{b}{c}$, can represent an improper fraction.

SKILLS & PROCEDURES

1. Relate fractions, improper fractions, and mixed numbers to their positions on the number line.
2. Count beyond 1 using fractions with the same denominator.
3. Model fractions, including improper fractions and mixed numbers, using quantities, lengths, and areas.
4. Express improper fractions and mixed numbers symbolically.
5. Express an improper fraction as a mixed number and vice versa.
6. Compare fractions, including improper fractions and mixed numbers, to benchmarks of 0, $\frac{1}{2}$ and 1.

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: How can the composition of fractions facilitate operating with fractions?

LEARNING OUTCOME
5N6 Students add and subtract fractions with common denominators.

5N6.1 UNDERSTANDING

1. Fractions with common denominators are multiples of the same unit fraction.
2. Properties for addition and subtraction of natural numbers apply to fractions.

KNOWLEDGE

1. Fractions with common denominators can be composed or decomposed to model the change in a quantity of unit fractions.
2. Addition and subtraction of fractions with common denominators does not change the unit fraction from which they are composed.
3. Fractions greater than one can be added or subtracted as mixed numbers or improper fractions.

SKILLS & PROCEDURES

1. Investigate the composition and decomposition of a quantity within 1 using unit fractions.
2. Express the composition or decomposition of fractions with common denominators as a sum or difference.
3. Compare strategies for adding or subtracting improper fractions to strategies for adding or subtracting mixed numbers.
4. Add and subtract fractions with common denominators within 100, including improper fractions and mixed numbers.
5. Solve problems requiring addition and subtraction of fractions with common denominators, including improper fractions and mixed numbers.

Number (N)

Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Guiding Question: How can ratios provide new ways to relate numbers?

LEARNING OUTCOME
5N7 Students employ ratios to represent relationships between quantities.

5N7.1 UNDERSTANDING

1. A ratio is a comparison of two quantities in a specific situation.
2. Fractions, decimals, ratios, and percentages can represent the same part-whole relationship.

KNOWLEDGE

1. A ratio can express part-part or part-whole relationships between two countable or measurable quantities.
2. A ratio can be expressed with a fraction or with a colon.
3. A percentage represents a part- whole ratio that compares a quantity to 100.

SKILLS & PROCEDURES

1. Express part-part ratios and part- whole ratios of the same whole to describe various situations.
2. Express, symbolically, the same part-whole relationship as a ratio, fraction, decimal, and percentage.

Algebra (A)

Equations express relationships between quantities.

Guiding Question: How can expressions enhance communication of number?

LEARNING OUTCOME
5A1 Students interpret numerical and algebraic expressions.

5A1.1 UNDERSTANDING

1. Numerical expressions represent a quantity of known value.
2. Parentheses change the order of operations in a numerical expression.

KNOWLEDGE	SKILLS & PROCEDURES
1. Numerical expressions with multiple operations may include parentheses to group numbers and operations. 2. The conventional order of operations includes performing operations in parentheses before other operations.	1. Evaluate numerical expressions involving addition or subtraction in parentheses according to the order of operations.

5A1.2 UNDERSTANDING

1. Algebraic expressions use variables to represent quantities of unknown value.
2. Algebraic expressions may be composed of one algebraic term or the sum of algebraic and constant terms.

KNOWLEDGE	SKILLS & PROCEDURES
1. Expressions that include variables are called algebraic expressions. 2. A variable can be interpreted as a specific unknown value and is represented symbolically with a letter. 3. Products with variables are expressed without the multiplication sign. 4. Quotients with variables are expressed using fraction notation. 5. An algebraic term is the product of a number, called a coefficient, and a variable. 6. A constant term is a number 7. A variable can be replaced by a given number in order to evaluate an expression.	1. Relate repeated addition of a variable to the product of a number and a variable. 2. Express the product of a number and a variable using a coefficient. 3. Express the quotient of a variable and a number as a fraction. 4. Recognize a product with a variable, a quotient with a variable, or a number as a single term. 5. Write an algebraic expression involving one or two terms to describe an unknown value. 6. Evaluate an algebraic expression by substituting a given number for the variable.

5A1.3 UNDERSTANDING

1. Equality is preserved by applying inverse operations to algebraic expressions on each side of an equation.
2. The expressions on each side of an equation will be equal when evaluated using the correct solution.

KNOWLEDGE	SKILLS & PROCEDURES
1. The process of applying inverse operations can be used to solve an equation. 2. The value of the variable obtained by solving an equation is the solution.	1. Write equations involving one or two operations to represent a situation. 2. Investigate order of operations when performing inverse operations on both sides of an equation. 3. Apply inverse operations to solve an equation, limited to equations with one or two operations. 4. Verify the solution to an equation by evaluating expressions on each side of the equation. 5. Solve problems using equations, limited to equations with one or two operations.

Geometry (G)

Shapes are defined and related by geometric attributes.

Guiding Question: In what ways might symmetry characterize shape?

LEARNING OUTCOME

5G1 Students investigate symmetry as a geometric property.

5G1.1 UNDERSTANDING

1. Symmetry is a property of shapes.
2. Symmetry can be created and can occur in nature.

KNOWLEDGE	SKILLS & PROCEDURES
1. A 2-D shape has reflection symmetry if there is a line over which the shape reflects and the two halves exactly match. 2. A 3-D shape has reflection symmetry if there is a plane over which the shape reflects and the two halves exactly match. 3. A 2-D shape has rotation symmetry if it exactly overlaps itself one or more times within a rotation of 360° around its centre point. 4. Order of rotation symmetry describes the number of times a shape coincides with itself within a rotation of 360° around its centre point. 5. Central symmetry is the rotational symmetry by 180°. 6. Symmetry can be found in First Nations, Métis, and Inuit design, including ○ basket weavings ○ wampum belts ○ quilts ○ First Nations beadwork or Métis floral beadwork ○ architecture such as tipis or longhouses	1. Recognize symmetry in nature. 2. Recognize symmetry in First Nations, Métis, and Inuit design. 3. Investigate symmetry in familiar 2-D and 3-D shapes using hands-on materials or digital applications. 4. Show the line of symmetry of a 2-D shape. 5. Describe the order of rotation symmetry of a 2-D shape.

5G1.2 UNDERSTANDING

1. Symmetry is related to other geometric properties.

KNOWLEDGE	SKILLS & PROCEDURES
1. A regular polygon has the same number of sides, reflection symmetries, and rotation symmetries. 2. A circle has infinitely many reflection and rotation symmetries.	1. Compare the number of reflection and rotation symmetries of a 2-D shape to the number of equal sides and angles. 2. Classify 2-D shapes according to the number of reflection or rotation symmetries.

Coordinate Geometry (CG)

Location and movement of objects in space can be communicated using a coordinate grid.

Guiding Question: How can location enhance the ways in which space is defined?

LEARNING OUTCOME
5CG1 Students relate location to position on a grid.

5G1.1 UNDERSTANDING

1. Location can describe the position of shapes in space.
2. Location can be described precisely using a coordinate grid.

KNOWLEDGE

1. Coordinate grids use coordinates to indicate the location of the point where the vertical and horizontal grid lines intersect.
2. Coordinates are ordered pairs of numbers in which the first number indicates the distance from the vertical axis and the second number indicates the distance from the horizontal axis.
3. Positional language includes
   - left
   - right
   - up
   - down

SKILLS & PROCEDURES

1. Locate a point on a coordinate grid given the coordinates of the point.
2. Describe the location of a point on a coordinate grid using coordinates.
3. Describe the location of a point on a coordinate grid in relation to the location of another point using positional language.
4. Model a polygon on a coordinate grid using coordinates to indicate the vertices.
5. Describe the location of the vertices of a polygon on a coordinate grid using coordinates.

Measurement (M)

Attributes such as length, area, volume, and angle are quantified by measurement.

Guiding Question:In what ways can area be communicated?

LEARNING OUTCOME
5M1 Students estimate and calculate area using standard units.

5M1.1 UNDERSTANDING

1. Area can be expressed in various units according to context and desired precision.
2. Rectangles with the same area can have different perimeters.

KNOWLEDGE

1. Area is expressed in the following standard units, derived from standard units of length:
   - square centimetres
   - square metres
   - square kilometres
2. A square centimetre (cm^2) is an area equivalent to the area of a square measuring 1 centimetre by 1 centimetre.
3. A square metre (m^2) is an area equivalent to the area of a square measuring 1 metre by 1 metre.
4. A square kilometre (km^2) is an area equivalent to the area of a square measuring 1 kilometre by 1 kilometre.
5. Among all rectangles with the same area, the square has the least perimeter.

SKILLS & PROCEDURES

1. Relate a centimetre to a square centimetre.
2. Relate a metre to a square metre.
3. Relate a square centimetre to a square metre.
4. Express the relationship between square centimetres, square metres, and square kilometres.
5. Justify the choice of square centimetres, square metres, or square kilometres as appropriate units to express various areas.
6. Estimate an area by comparing to a benchmark of a square centimetre or square metre.
7. Express the area of a rectangle using standard units given the lengths of its sides.
8. Compare the perimeters of various rectangles with the same area.
9. Describe the rectangle with the least perimeter for a given area.
10. Solve problems involving perimeter and area of rectangles.

Patterns (P)

Awareness of patterns supports problem solving in various situations.

Guiding Question: How might representation of a sequence provide insight into change?

LEARNING OUTCOME

5P1 Students relate terms to position within an arithmetic sequence.

5P1.1 UNDERSTANDING

1. Each term of an arithmetic sequence corresponds to a natural number indicating position in the sequence.

KNOWLEDGE	SKILLS & PROCEDURES
1. A table of values representing an arithmetic sequence lists the position in the first column or row and the corresponding term in the second column or row. 2. Points representing an arithmetic sequence on a coordinate grid fit on a straight line. 3. An algebraic expression can describe the relationship between the positions and terms of an arithmetic sequence.	1. Represent one-to-one correspondence between positions and terms of an arithmetic sequence in a table of values and on a coordinate grid. 2. Describe the graph of an arithmetic sequence as a straight line. 3. Describe a rule, limited to one operation, that expresses correspondence between positions and terms of an arithmetic sequence. 4. Write an algebraic expression, limited to one operation, that represents correspondence between positions and terms of an arithmetic sequence. 5. Determine the missing term in an arithmetic sequence that corresponds to a given position. 6. Solve problems involving an arithmetic sequence.

Statistics (ST)

The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

Guiding Question: How might frequency bring meaning to data?

LEARNING OUTCOME
5ST1 Students analyze frequency in categorical data.

5ST1.1 UNDERSTANDING

1. Frequency is a count of categorized data, but it is not the data value itself.

KNOWLEDGE	SKILLS & PROCEDURES
1. Frequency can be compared across categories to answer statistical questions. 2. The mode is the category with the highest frequency.	1. Examine categorized data in tables and graphs. 2. Determine frequency for each category of a set of data by counting individual data points. 3. Identify the mode in various representations of data. 4. Recognize data sets with no mode, one mode, or multiple modes. 5. Justify possible answers to a statistical question using mode.

5ST1.2 UNDERSTANDING

1. Frequency can be a count of categorized responses to a question.
2. Frequency can be used to summarize data.
3. Frequency can be represented in various forms.

KNOWLEDGE	SKILLS & PROCEDURES
1. Data can be collected by asking closed-list and open-ended questions. 2. Closed-list response survey questions provide a list of possible responses. 3. Open-ended response survey questions allow any response. 4. Survey responses can be categorized in various ways. 5. Representations of frequency include ● bar graphs ● dot plots ● stem-and-leaf plots	1. Discuss potential categories for open-ended response survey questions and closed-list response survey questions in relation to the same statistical question. 2. Formulate closed-list response survey questions to collect data to answer a statistical question. 3. Categorize data that was collected by using a closed-list question. 4. Organize counts of categorized data in a frequency table. 5. Create various representations of data, including with technology, to interpret frequency.

Financial Literacy (F)

Informed financial decision making contributes to the well-being of individuals, groups, and communities.

Guiding Question: In what ways can financial goals be supported?

LEARNING OUTCOME

5F1 Students demonstrate how planning can support financial goals.

5F1.1 UNDERSTANDING

1. Budgeting is important to responsible financial decision making and can support achieving short-term and long-term financial goals.

KNOWLEDGE

1. A budget is a plan that supports an individual when making decisions on how to earn, spend, save, invest, and donate over a period.
2. A budget consists of money currently on hand (assets), money expected to be earned (income), and money planned on spending (expenses).
3. A budget can be divided into needs and wants.
4. Budgets can be used for a variety of situations, such as
    - personal
    - household
    - business
    - an event or activity
5. Budgets may need to be adjusted due to unforeseen circumstances.
6. Short-term financial goals can be immediate and can support attainment of long-term goals.
7. Long-term financial goals can take several years to achieve, involve more money, and require commitment.

SKILLS & PROCEDURES

1. Develop a simple budget for an activity or event.
2. Examine the components of a budget.
3. Create a savings plan for short-term and long-term goals.

5F1.2 UNDERSTANDING

1. When purchasing goods and services, individuals have the ability to make choices.

KNOWLEDGE

1. A budget is a plan that supports an individual when a consumer is an individual who purchases goods and services.
2. Factors that can influence consumer choice include
    - marketing
    - advertising
    - media
    - availability
    - trends
    - price

SKILLS & PROCEDURES

1. Examine factors that influence consumer choice.