Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.								
Guiding Question	How can quantity contribute meaning to daily life?			How can quantity be communicated?			How can quantity contribute to a sense of number?		
Learning Outcome	Children investigate quantity to 10.			Students interpret and explain quantity to 100.			Students analyze quantity to 1000.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Quantity can be represented using • objects • pictures • words • numerals	Quantity can be the number of objects in a set.	Recognize a number of familiar objects as a quantity. Represent a quantity in different ways. Relate a numeral to a specific quantity.	A numeral is a symbol or group of symbols used to represent a number. The absence of quantity is represented by 0.	Quantity is expressed in words and numerals based on patterns. Quantity in the world is represented in multiple ways.	Represent quantities using words, numerals, objects, or pictures. Identify a quantity of 0 in familiar situations.	Any number of objects in a set can be represented by a natural number. The values of the places in a four-digit natural number are thousands, hundreds, tens, and ones. Places that have no value within a given number use zero as a placeholder. The number line is a spatial representation of quantity.	There are infinitely many natural numbers. Every digit in a natural number has a value based on its place. Each natural number is associated with exactly one point on the number line.	Represent quantities using words and natural numbers. Identify the digits representing thousands, hundreds, tens, and ones based on place in a natural number. Relate a number, including zero, to its position on the number line.

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	Kindergarten			Grade 1			Grade 2		
	Quantity can be determined by counting.	A quantity is always counted using the same sequence of words (counting principle: stable order). A quantity remains the same no matter the order in which the objects are counted (counting principle: order irrelevance). A quantity can be determined by counting each object in a set once and only once (counting principle: one-to-one correspondence). The last number used to count represents the quantity (counting principle: cardinality). Any quantity of like or unlike objects can be counted as a set (counting principle: abstraction).	Count within 10, forward and backward, starting at any number, according to the counting principles.	Counting can begin at any number. Counting more than one object at a time is called skip counting.	Each number counted includes all previous numbers (counting principle: hierarchical inclusion). A quantity can be determined by counting more than one object in a set at a time.	Count within 100, forward by 1s, starting at any number, according to the counting principles. Count backward from 20 to 0 by 1s. Skip count to 100, forward by 5s and 10s, starting at 0. Skip count to 20, forward by 2s, starting at 0.	A quantity can be skip counted in various ways according to context. Quantities of money can be skip counted in amounts that are represented by coins and bills (denominations).	A quantity can be interpreted as a composition of groups.	Decompose quantities into groups of 100s, 10s, and 1s. Count within 1000, forward and backward by 1s, starting at any number. Skip count by 20s, 25s, or 50s, starting at 0. Skip count by 2s and 10s, starting at any number. Determine the value of a collection of coins or bills of the same denomination by skip counting.
				Sharing involves partitioning a quantity into a certain number of groups. Grouping involves partitioning a quantity into groups of a certain size.	Quantity can be partitioned by sharing or grouping.	Partition a set of objects by sharing and grouping. Demonstrate conservation of number when sharing or grouping.	An even quantity will have no remainder when partitioned into two equal groups or groups of two. An odd quantity will have a remainder of one when partitioned into two equal groups or groups of two.	All natural numbers are either even or odd.	Model even and odd quantities by sharing and grouping. Describe a quantity as even or odd. Partition a set of objects by sharing or grouping, with or without remainders.
	A small quantity can be recognized at a glance (subitized).	Quantity can be determined without counting.	Subitize quantities to 5.	Familiar arrangements of small quantities facilitate subitizing.	A quantity can be perceived as the composition of smaller quantities.	Recognize quantities to 10.	A benchmark is a known quantity to which another quantity can be compared.	A quantity can be estimated when an exact count is not needed.	Estimate quantities using benchmarks.

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	Kindergarten			Grade 1			Grade 2		
	Comparisons of quantity can be described by using words such as • more • less • same • enough • not enough	A quantity can be described relative to another quantity. A quantity can be described in relation to a purpose or need.	Compare the size of two sets using one-to-one correspondence. Describe quantities relative to each other using comparative language. Describe a quantity in relation to a purpose or need using comparative language. Solve problems in familiar situations by counting.	Comparisons of quantity can be described by using words such as • equal • not equal • less • more Equality can be modelled using a balance. The equal sign, $=$, is used to show equality between two quantities. The unequal sign, $\neq$, is used to show that two quantities are not equal.	Two quantities are equal when there is the same number of objects in both sets. Equality is a balance between two quantities.	Investigate equal and unequal quantities, including using a balance model. Identify numbers that are one more, two more, one less, and two less than a given number. Represent a quantity relative to another, including symbolically.	Words that can describe a comparison between two unequal quantities include • not equal • greater than • less than The less than sign, $<$, and the greater than sign, $>$, are used to indicate inequality between two quantities. Equality and inequality can be modelled using a balance.	Inequality is an imbalance between two quantities.	Model equality and inequality between two quantities, including with a balance. Compare and order natural numbers. Describe a quantity as less than, greater than, or equal to another quantity.

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.								
Guiding Question	In what ways can quantity be composed?			How can addition and subtraction provide perspectives of number?			How can addition and subtraction be interpreted?		
Learning Outcome	Children interpret compositions of quantities within 10.			Students examine addition and subtraction within 20.			Students investigate addition and subtraction within 100.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Quantity can be arranged in various ways.	A quantity remains the same no matter how the objects are grouped or arranged (counting principle: conservation).	Identify a quantity in various groups or arrangements. Compose quantities within 10. Recognize various ways to make 5 and 10.	Quantities can be composed or decomposed to model a change in quantity. Addition can be applied in various contexts, including • combining parts to find the whole • increasing an existing quantity Subtraction can be applied in various contexts, including • comparing two quantities • taking away one quantity from another • finding a part of a whole Addition and subtraction can be modelled using a balance.	Addition and subtraction are processes that describe the composition and decomposition of quantity.	Visualize quantities between 10 and 20 as compositions of 10 and another quantity. Model addition and subtraction within 20 in various ways, including with a balance. Relate addition and subtraction to various contexts involving composition or decomposition of quantity.	The order in which more than two numbers are added does not affect the sum (associative property).	A sum can be composed in multiple ways.	Visualize 100 as a composition of multiples of 10 in various ways. Compose a sum in multiple ways, including with more than two addends.

	Kindergarten			Grade 1			Grade 2		
				Strategies are meaningful steps taken to solve problems. Addition and subtraction strategies include • counting on • counting back • decomposition • compensation • making tens Sums and differences can be expressed symbolically using the addition sign, $+$, the subtraction sign, $-$, and the equal sign, $=$. The order in which two quantities are added does not affect the sum (commutative property). The order in which two quantities are subtracted affects the difference. Addition of 0 to any number, or subtraction of 0 from any number, results in the same number (zero property). A missing quantity in a sum or difference can be represented in different ways, including • $a + b = \square$ • $a + \square = c$ • $\square + b = c$ • $e - f = \square$ • $e - \square = g$ • $\square - f = g$	Addition and subtraction are opposite (inverse) mathematical operations.	Investigate addition and subtraction strategies. Add and subtract within 20. Check differences and sums using inverse operations. Determine a missing quantity in a sum or difference, within 20, in a variety of ways. Express addition and subtraction symbolically. Solve problems using addition and subtraction.	Familiar addition and subtraction number facts facilitate addition and subtraction strategies. Addition and subtraction strategies for two-digit numbers include making multiples of ten and using doubles.	Addition and subtraction can represent the sum or difference of countable quantities or measurable lengths.	Recall and apply addition number facts, with addends to 10, and related subtraction number facts. Investigate strategies for addition and subtraction of two-digit numbers. Add and subtract numbers within 100. Verify a sum or difference using inverse operations. Determine a missing quantity in a sum or difference, within 100, in a variety of ways. Solve problems using addition and subtraction of countable quantities or measurable lengths.

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	Kindergarten			Grade 1			Grade 2		
				Addition and subtraction number facts represent part-part-whole relationships. Fact families are groups of related addition and subtraction number facts.	Addition number facts have related subtraction number facts.	Identify patterns in addition and subtraction, including patterns in addition tables. Recognize families of related addition and subtraction number facts. Recall addition number facts, with addends to 10, and related subtraction number facts.			

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.								
Guiding Question				In what ways can parts and wholes be related?			In what ways can parts compose a whole?		
Learning Outcome				Students examine one-half as a part-whole relationship.			Students interpret part-whole relationships using unit fractions.		
				Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
				One-half can be one of two equal groups or one of two equal pieces.	In a quantity partitioned into two equal groups, each group represents one-half of the whole quantity. In a shape or object partitioned into two identical pieces, each piece represents one-half of the whole.	Identify one-half in familiar situations. Partition an even set of objects into two equal groups, limited to sets of 10 or less. Partition a shape or object into two equal pieces. Describe one of two equal groups or pieces as one-half. Verify that the two halves of one whole group, shape, or object are the same size.	A whole can be a whole set of objects, or a whole object, that can be partitioned into a number of equal parts. The whole can be any size and is designated by context. A unit fraction describes any one of the equal parts that compose a whole.	Fractions can represent part-to-whole relationships. One whole can be interpreted as a number of unit fractions.	Model a unit fraction by partitioning a whole object or whole set into equal parts, limited to 10 or fewer equal parts. Compare different unit fractions of the same whole, limited to denominators of 10 or less. Compare the same unit fractions of different wholes, limited to denominators of 10 or less. Model one whole, using a given unit fraction, limited to denominators of 10 or less.

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Geometry: Shapes are defined and related by geometric attributes.								
Guiding Question	How can shape bring meaning to the space in an environment?			In what ways can shape be characterized?			How can shape influence perception of space?		
Learning Outcome	Children investigate shape.			Students interpret shape in two and three dimensions.			Students analyze and explain geometric attributes of shape.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	A shape can be represented using objects, pictures, or words. Familiar two- and three-dimensional shapes can be found in nature, such as • circles • triangles • cubes • cylinders First Nations, Métis, and Inuit relate specific shapes to those found in nature.	Shape is structured two-dimensional or three-dimensional space.	Relate shapes in nature to various two-dimensional and three-dimensional shapes. Identify familiar two- and three-dimensional shapes. Investigate three-dimensional shapes by rolling, stacking, or sliding. Describe a shape using words such as flat, curved, straight, or round.	Familiar two-dimensional shapes include • squares • circles • rectangles • triangles Familiar three-dimensional shapes include • cubes • prisms • cylinders • spheres • pyramids • cones A composite shape is composed of two or more shapes. A line of symmetry indicates the division between the matching halves of a symmetrical shape.	A shape can be modelled in various sizes and orientations. A shape is symmetrical if it can be decomposed into matching halves.	Identify familiar shapes in various sizes and orientations. Model two-dimensional shapes. Sort shapes according to one attribute and describe the sorting rule. Compose and decompose two- or three-dimensional composite shapes. Identify familiar shapes within two- or three-dimensional composite shapes. Investigate symmetry of two-dimensional shapes by folding and matching.	Common geometric attributes include • sides • vertices • faces or surfaces Two-dimensional shapes may have sides that are line segments. Three-dimensional shapes may have faces that are two-dimensional shapes.	Shapes are defined according to geometric attributes. A shape can be visualized as a composition of other shapes.	Sort shapes according to two geometric attributes and describe the sorting rule. Relate the faces of three-dimensional shapes to two-dimensional shapes. Create a picture or design with shapes from verbal instructions, visualization, or memory.
							A shape can change orientation or position through slides (translations), turns (rotations), or flips (reflections). Shapes can be turned or flipped in the creation of art.	Geometric attributes do not change when a shape is translated, rotated, or reflected.	Investigate translation, rotation, and reflection of two- and three-dimensional shapes. Describe geometric attributes of two- and three-dimensional shapes in various orientations. Recognize the translation, rotation, or reflection of shapes represented in artwork.

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.								
Guiding Question	In what ways can size be distinguished?			In what ways can length provide perspectives of size?			How can length contribute to interpretations of space?		
Learning Outcome	Children explore size through direct comparison.			Students relate length to the understanding of size.			Students communicate length using units.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Size can be interpreted in many ways (according to measurable attributes), such as: • the length of an object • how much flat space an object covers (area) • how much a container holds (capacity) • the heaviness of an object (weight)	Size describes the amount of one measurable attribute of an object or a space.	Identify measurable attributes of familiar objects to which size may refer.	Size may refer to the length of an object, including • height • width • depth A length does not need to be a straight line. The length between any two points in space is called distance. Familiar contexts of distance include • distance between objects or people • distance between objects on the land • distance between home and school • distance between towns or cities	Length is a measurable attribute that describes the amount of fixed space between the end points of an object. Length remains the same if an object is repositioned but may be named differently.	Recognize the height, width, or depth of an object as lengths in various orientations. Compare and order objects according to length. Describe distance in familiar contexts.	Tiling is the process of measuring a length by using many copies of a unit without gaps or overlaps. Iterating is the process of measuring a length by repeating one copy of a unit without gaps or overlaps. The unit can be chosen based on the length to be measured. Length can be measured with non-standard units or standard units. Non-standard units found in nature can be used to measure length on the land. Standard units, such as centimetres, can enable a common language around measurement.	Length is quantified by measurement. Length is measured with equal-sized units that themselves have length. The number of units required to measure a length is inversely related to the size of the unit.	Measure length with non-standard units by tiling, iterating, or using a self-created measuring tool. Compare and order measurements of different lengths measured with the same non-standard units, and explain the choice of unit. Compare measurements of the same length measured with different non-standard units. Measure length with standard units by tiling or iterating with a centimetre. Compare and order measurements of different lengths measured with centimetres.

	Kindergarten			Grade 1			Grade 2		
	Comparisons of size can be described by using words such as • longer • shorter • heavier • lighter • too big • too small	Size may refer to only one measurable attribute at a time. The size of two objects can be compared directly. The size of an object can be described in relation to a purpose or need.	Compare the length, area, weight, or capacity of two objects directly. Describe the size of an object in relation to another object, using comparative language. Describe the size of an object in relation to a purpose or need, using comparative language.	Indirect comparison is useful when objects are fixed in place or difficult to move. Comparisons of size can be described by using words such as • higher • wider • deeper	The size of two objects can be compared indirectly with a third object.	Compare the length, area, or capacity of two objects directly or indirectly using a third object. Order objects according to length, area, or capacity.	A referent is a personal or familiar representation of a known length. A common referent from the land or body parts can be used to measure length.	Length can be estimated when a measuring tool is not available.	Identify referents for a centimetre. Estimate length by visualizing the iteration of a referent for a centimetre. Investigate First Nations, Métis, or Inuit use of the land in estimations of length.

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Patterns: Awareness of patterns supports problem solving in various situations.								
Guiding Question	How can patterns be recognized?			What can patterns communicate?			How can patterns characterize change?		
Learning Outcome	Children identify and create repeating patterns.			Students examine patterns in cycles.			Students explain and analyze patterns in a variety of contexts.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Patterns exist everywhere. A pattern can involve elements such as • sounds • objects • pictures • symbols • actions Repeating patterns have one or more elements that repeat.	A pattern is characterized by how the elements change or remain constant.	Recognize repeating patterns encountered in daily routines and play, including songs or dances. Recognize change or constancy between elements in a repeating pattern. Predict the next elements in a repeating pattern. Create a repeating pattern with up to three repeating elements.	A cycle can express repetition of events or experiences. Cycles include • seasons • day/night • life cycles • calendars The same pattern can be represented with different elements. A pattern core is a sequence of one or more elements that repeats as a unit.	A pattern that appears to repeat may not repeat in the same way forever. A cycle is a repeating pattern that repeats in the same way forever.	Recognize cycles encountered in daily routines and nature. Investigate cycles found in nature that inform First Nations, Métis, or Inuit practices. Identify the pattern core, up to four elements, in a cycle. Identify a missing element in a repeating pattern or cycle. Describe change and constancy in repeating patterns and cycles. Create different representations of the same repeating pattern or cycle, limited to a pattern core of up to four elements. Extend a sequence of elements in various ways to create repeating patterns.	Change can be an increase or a decrease in the number and size of elements. A hundreds chart is an arrangement of natural numbers that illustrates multiple patterns. Patterns can be found and created in cultural designs.	A pattern can show increasing or decreasing change. A pattern is more evident when the elements are represented, organized, aligned, or oriented in familiar ways.	Describe non-repeating patterns encountered in surroundings, including in art, architecture, cultural designs, and nature. Investigate patterns in a hundreds chart. Create and express growing patterns using sounds, objects, pictures, or actions.
							Attributes of elements, such as size and colour, can contribute to a pattern.	A pattern core can vary in complexity.	Create and express a repeating pattern with a pattern core of up to four elements that change by more than one attribute.

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Time: Duration is described and quantified by time.								
Guiding Question	In what ways can time be described?			How can time characterize change?			How can duration support interpretation of time?		
Learning Outcome	Children interpret time as a sequence of events.			Students explain time in relation to cycles.			Students relate duration to time.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Sequence in time can be described in words, such as • first • next • today Ordinal numbers can indicate order in time.	Time can be perceived as a sequence.	Sequence events, limited to two events, according to time using words or ordinal numbers. Describe daily events as occurring yesterday, today, or tomorrow.	Time can be perceived through observable change. First Nations, Métis, and Inuit experience time through sequences and cycles in nature, including cycles of seasons. Cycles from a calendar include days of the week and months of the year.	Time is an experience of change. Time can be perceived as a cycle.	Describe cycles of time encountered in daily routines and nature. Describe observable changes that indicate a cycle of time. Relate cycles of seasons to First Nations, Métis, or Inuit practices. Identify cycles from a calendar.	Events can be related to calendar dates. Duration can be described using comparative language such as longer or shorter. Duration can be measured in non-standard units, including events, natural cycles, or personal referents. Winter counts are First Nations symbolic calendars that record oral traditions and significant events.	Time can be communicated in various ways. Duration is the measure of an amount of time from beginning to end.	Express significant events using calendar dates. Describe the duration between or until significant events using comparative language. Describe the duration of events using non-standard units. Relate First Nations' winter counts to duration.
							Time can be described using standard units such as days or minutes.	Duration is quantified by measurement.	Describe the relationship between days, weeks, months, and years. Describe the duration between or until significant events using standard units of time.

Mathematics Kindergarten to Grade 6 Curriculum

	Kindergarten			Grade 1			Grade 2		
Organizing Idea				Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.					
Guiding Question				How can data be used to answer questions about the world?			How can data inform representation?		
Learning Outcome				Students investigate and represent data.			Students relate data to a variety of representations.		
				Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
				Data can be collected information.	Data can be answers to questions.	Share wonderings about people, things, events, or experiences. Gather data by sharing answers to questions.	Data can be collected by asking questions. First-hand data is data collected by the person using the data.	Data can be collected to answer questions.	Generate questions for a specific investigation within the learning environment. Collect first-hand data by questioning people within the learning environment.
				A graph is a visual representation of data. A graph can represent data by using objects, pictures, or numbers.	Data can be represented in a graph.	Collaborate to construct a concrete graph using data collected in the learning environment. Create a pictograph from a concrete graph.	Data can be recorded using tally marks, words, or counts. Data can be expressed through First Nations, Métis, or Inuit stories. A graph includes features such as • a title • a legend • axes • axis labels Data can be represented with graphs such as • pictographs • bar graphs • dot plots	Data can be represented in various ways.	Record data in a table. Construct graphs to represent data. Interpret graphs to answer questions. Compare the features of pictographs, dot plots, and bar graphs.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	How can place value support organization of number?			How can place value facilitate interpretation of number?		
Learning Outcome	Students interpret place value within 100 000.			Students apply place value to decimal numbers.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	For numbers in base-10, each place has 10 times the value of the place to its right. The digits 0 to 9 indicate the number of groups in each place in a number. The value of each place in a number is the product of the digit and its place value. Numbers can be composed in various ways using place value. Numbers can be rounded in contexts where an exact count is not needed. The less than sign, $<$, and the greater than sign, $>$, are used to show the relationship between two unequal numbers. A zero in the leftmost place of a natural number does not change the value of the number. The dollar sign, $, is placed to the left of the dollar value in English and to the right of the dollar value in French. The cent sign, ¢, is placed to the right of the cent value in English and in French.	Place value is the basis for the base-10 system. Place value determines the value of a digit based on its place in a number relative to the ones place. Place value is used to read, write, and compare numbers.	Identify the place value of each digit in a natural number. Relate the values of adjacent places. Determine the value of each digit in a natural number. Express natural numbers using words and numerals. Express various compositions of a natural number using place value. Round natural numbers to various places. Compare and order natural numbers. Express the relationship between two numbers using $<$, $>$, or $=$. Count and represent the value of a collection of nickels, dimes, and quarters as cents. Count and represent the value of a collection of loonies, toonies, and bills as dollars. Recognize French and English symbolic representations of monetary values.	For numbers in base-10, each place has one-tenth the value of the place to its left. Multiplying or dividing a number by 10 corresponds to shifting place value one position to the left or right, respectively. The decimal separator is a point in English and a comma in French. Numbers, including decimal numbers, can be composed in various ways using place value. A zero placed to the right of the last digit in a decimal number does not change the value of the number. The word *and* is used to indicate the decimal point when reading a number.	Decimal numbers are numbers between natural numbers. Decimal numbers are fractions with denominators of 10, 100, etc. The separation between wholes and parts, including dollars and cents, can be represented using decimal notation. Patterns in place value are used to read and write numbers, including wholes and parts.	Identify the place value of each digit in a number, including tenths and hundredths. Relate the values of adjacent places, including tenths and hundredths. Determine the value of each digit in a number, including tenths and hundredths. Express numbers, including decimal numbers, using words and numerals. Express various compositions of a number, including decimal numbers, using place value. Recognize decimal notation expressed in English and in French. Round numbers to various places, including tenths. Compare and order numbers, including decimal numbers. Express the relationship between two numbers, including decimal numbers, using $<$, $>$, or $=$. Express a monetary value in cents as a monetary value in dollars using decimal notation.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	How can processes be established for addition and subtraction?			How can understanding of addition and subtraction be extended to decimal numbers?		
Learning Outcome	Students apply strategies for addition and subtraction within 1000.			Students add and subtract within 10 000, including decimal numbers to hundredths.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Recall of addition and subtraction number facts facilitates addition and subtraction strategies. Standard algorithms for addition and subtraction are conventional procedures based on place value. Estimation can be used to support addition and subtraction in everyday situations, including • when an exact sum or difference is not needed • to check if an answer is reasonable	Addition and subtraction strategies can be chosen based on the nature of the numbers. Standard algorithms for addition and subtraction may be used for any natural numbers.	Relate strategies for the addition and subtraction of two-digit numbers to strategies for the addition and subtraction of three-digit numbers. Model regrouping by place value for addition and subtraction. Explain the standard algorithms for addition and subtraction of natural numbers. Add and subtract natural numbers using standard algorithms. Estimate sums and differences. Solve problems using addition and subtraction.	Standard algorithms for addition and subtraction of decimal numbers are conventional procedures based on place value. Estimation can be used to check the reasonableness of a sum or difference.	Standard algorithms for addition and subtraction may be used for any decimal numbers.	Add and subtract numbers, including decimal numbers, using standard algorithms. Assess the reasonableness of a sum or difference using estimation. Solve problems using addition and subtraction, including problems involving money.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	How can multiplication and division provide new perspectives of number?			How can multiplication and division characterize the composition of numbers?		
Learning Outcome	Students analyze and apply strategies for multiplication and division within 100.			Students explain properties of prime and composite numbers using multiplication and division.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Multiplication and division are inverse mathematical operations. Multiplication is repeated addition. Multiplication can be interpreted in various ways according to context, such as • equal groups • an array • an area Division can be interpreted in various ways according to context, such as • equal sharing • equal grouping • repeated subtraction The order in which two quantities are multiplied does not affect the product (commutative property). The order in which two numbers are divided affects the quotient. Multiplication or division by 1 results in the same number (identity property).	Quantities can be composed and decomposed through multiplication and division.	Compose a product using equal groups of objects. Relate multiplication to repeated addition. Relate multiplication to skip counting. Investigate multiplication by 0. Model a quotient by partitioning a quantity into equal groups or groups of a certain size, with or without remainders. Visualize and model products and quotients as arrays. Recognize interpretations of multiplication and division in various contexts.	A factor of a number is a divisor of that number. A number is a multiple of any of its factors. A prime number has factors of only itself and one. A composite number has factors other than one and itself. Zero and one are neither prime nor composite numbers.	Different factors can compose the same product. Different products can share factors. A number divided by one of its factors will result in a remainder of 0.	Determine the factors of a number within 100. Describe a number as prime or composite. Determine the first five multiples of a given number within 100. Recognize the greatest common factor (greatest common divisor) of two numbers within 100.

	Grade 3			Grade 4		
	Numbers can be multiplied or divided in parts (distributive property). Multiplication strategies include • repeated addition • multiplying in parts • compensation Division strategies include • repeated subtraction • partitioning the dividend Products can be expressed symbolically using the multiplication sign, $\times$, factors, and the equal sign. Quotients can be expressed symbolically using the division sign, $\div$, dividend, divisor, and the equal sign. A missing quantity in a product or quotient can be represented in different ways, including • $a \times b = \square$ • $a \times \square = c$ • $\square \times b = c$ • $e \div f = \square$ • $e \div \square = g$ • $\square \div f = g$ A remainder is the quantity left over after division.	Sharing and grouping situations can be interpreted as multiplication or division. Multiplication and division strategies can be supported by addition and subtraction.	Investigate multiplication and division strategies. Multiply and divide within 100. Verify a product or quotient using inverse operations. Determine a missing quantity in a product or quotient in a variety of ways. Express multiplication and division symbolically. Explain the meaning of the remainder in various situations. Solve problems using multiplication and division in sharing or grouping situations.			
	A multiplication table shows both multiplication and division facts. Fact families are groups of related multiplication and division number facts.	Multiplication number facts have related division facts.	Examine patterns in multiplication and division, including patterns in multiplication tables and skip counting. Recognize families of related multiplication and division number facts. Recall multiplication number facts, with factors to 10, and related division facts.			

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question				How can multiplication and division be interpreted?		
Learning Outcome				Students multiply and divide natural numbers within 10 000.		
				Knowledge	Understanding	Skills & Procedures
				Recall of multiplication and division number facts facilitates multiplication and division strategies. Standard algorithms facilitate multiplication and division of natural numbers that have multiple digits. Estimation can be used to check the reasonableness of a product or quotient.	Multiplication and division strategies can be chosen based on the nature of the numbers.	Recall and apply multiplication number facts, with factors to 12, and related division number facts. Investigate patterns in multiplication and division of natural numbers by 10, 100, and 1000. Multiply and divide 3-digit natural numbers by 1-digit natural numbers using personal strategies. Examine standard algorithms for multiplication and division. Multiply and divide 3-digit natural numbers by 1-digit natural numbers using standard algorithms. Divide and express a quotient with or without a remainder. Investigate strategies for estimation of products and quotients. Assess the reasonableness of a product or quotient using estimation. Solve problems using multiplication and division.

	Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	How can fractions contribute to a sense of number?			How can fractions be characterized in different ways?		
Learning Outcome	Students interpret fractions in relation to one whole.			Students apply equivalence to the interpretation of fractions.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	The same fraction can represent • equal parts of one whole length, shape, or object • equal groups of one whole quantity • equal parts of each equal group in one whole quantity The name of a fraction describes its composition as a number of unit fractions. Fraction notation, $(\frac{a}{b})$, relates the numerator, a, a number of equal parts, to the denominator, b, the total number of equal parts in the whole. Equal numerators or equal denominators can facilitate the comparison of fractions. A fraction with a numerator that is equal to its denominator is one whole. Each fraction is associated with a point on the number line.	Fractions are numbers between natural numbers. Fractions can represent part-to-whole relationships. A unit fraction describes the size of the equal parts of a fraction. The size of the parts and the total number of equal parts in the whole are inversely related.	Model fractions of a whole quantity, length, shape, or object, in various ways, limited to denominators of 12 or less. Visualize fractions as compositions of a unit fraction. Identify the numerator and denominator of a fraction in various representations. Name a given fraction. Express fractions, including one whole, symbolically, limited to denominators of 12 or less. Relate various representations of the same fraction, limited to denominators of 12 or less. Compare the same fraction of different-sized wholes. Compare different fractions of the same whole that have the same denominator. Compare different fractions of the same whole that have the same numerator and different denominators. Express the relationship between two fractions of the same whole, using $<$, $>$, or $=$. Relate a fraction less than one to its position on the number line, limited to denominators of 12 or less. Compare fractions to benchmarks of 0, $\frac{1}{2}$, and 1.	Equivalent fractions are associated with the same point on the number line. Equivalent fractions can be created by partitioning each equal part of a fraction in the same way. Partitioning a fraction can be interpreted as multiplying the numerator and denominator of a fraction by the same number. A fraction can be simplified to an equivalent form by dividing the numerator and denominator by a common factor. The numerator and denominator of a fraction in simplest form have no common factors. Dividing the numerator and denominator of a fraction by their greatest common factor will achieve simplest form.	There are infinitely many equivalent fractions that represent the same number. Exactly one of infinitely many equivalent fractions is in simplest form.	Model equivalent fractions by partitioning a whole in multiple ways. Determine fractions equivalent to a given fraction. Relate the position of equivalent fractions on the number line. Identify fractions in which the numerator and denominator have a common factor. Simplify a given fraction by dividing the numerator and denominator by a common factor. Express a fraction in simplest form. Compare and order fractions.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
				Fractions and decimal numbers can represent the same number. Decimals can be expressed as fractions with a denominator that is equivalent to the place value of the last non-zero digit of the decimal number.	Decimal numbers that terminate (do not repeat) are fractions with denominators of 10, 100, etc. Fractions and decimal numbers that represent the same number are associated with the same point on the number line.	Relate fractions and equivalent decimal numbers to their positions on the number line. Express fractions as decimal numbers and vice versa, limited to tenths and hundredths.

	Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question				How can percentages standardize part-whole relationships?		
Learning Outcome				Students interpret percentages.		
				Knowledge	Understanding	Skills & Procedures
				Percentage is represented symbolically with %. Decimals can be expressed as percentages by multiplying by 100. Percentages can be expressed as decimals by dividing by 100. One percent represents one hundredth of a whole.	Fractions, decimals, and percentages can represent the same part-whole relationship.	Investigate percentage in familiar situations. Compare percentages within 100%. Express the fraction, decimal, and percentage representations of the same part-whole relationship.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Algebra: Equations express relationships between quantities.					
Guiding Question	How can equality facilitate agility with number?			How can equality create opportunities to reimagine number?		
Learning Outcome	Students illustrate equality with equations.			Students represent and apply equality in multiple ways.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	An equation uses the equal sign to indicate equality between two expressions. The left and right sides of an equation are interchangeable.	Two expressions are equal if they represent the same number.	Write equations that represent equality between a number and an expression or between two different expressions of the same number.	An expression can include multiple operations. The conventional order of operations provides a set of rules for evaluating expressions, including the following: • Multiplication and division are performed before addition and subtraction. • Multiplication and division are performed in order from left to right. • Addition and subtraction are performed in order from left to right.	There are infinitely many expressions that represent the same number. The order in which operations are performed can affect the value of an expression.	Evaluate expressions according to the order of operations. Create various expressions of the same number using one or more operations.
	Equations can be modelled using a balance. A symbol may represent an unknown value in an equation.	Equations can include unknown values.	Model equations that include an unknown value, including with a balance. Determine an unknown value on the left or right side of an equation, limited to equations with one operation. Solve problems using equations, limited to equations with one operation.	Equations can be solved through a process of adding, subtracting, multiplying, or dividing the same number on both sides of the equation (preservation of equality).	An equation is solved by determining an unknown value that makes the left and right sides of the equation equal.	Write equations involving one operation to represent a situation. Investigate preservation of equality using a balance model. Investigate preservation of equality using an equation without an unknown value. Apply preservation of equality to determine the unknown value in an equation, limited to equations with one operation. Solve problems using equations, limited to equations with one operation.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Geometry: Shapes are defined and related by geometric attributes.					
Guiding Question	In what ways might geometric properties refine interpretation of shape?			In what ways can geometric properties define space?		
Learning Outcome	Students relate geometric properties to shape.			Students analyze and explain geometric properties.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Geometric properties can describe relationships, including perpendicular, parallel, and equal. Parallel lines or planes are always the same distance apart. Perpendicular lines or planes intersect at a 90° (right) angle. Right angles can be identified using various referents, such as • the corner of a piece of paper • the angle between the hands on an analog clock at 3:00 • a capital letter L Polygons include • triangles • quadrilaterals • pentagons • hexagons • octagons Regular polygons have sides of equal length and interior angles of equal measure.	Geometric properties are relationships between geometric attributes. Geometric properties define a class of polygon.	Investigate the relationships between the sides of a polygon, including perpendicular, parallel, and equal, using referents for 90° or by measuring. Investigate the relationships between vertices of a polygon, including equal or right angles, using direct comparison or referents for 90°. Describe geometric properties of regular and irregular polygons. Sort polygons according to geometric properties and describe the sorting rule. Classify polygons as regular or irregular using geometric properties.	Angle relationships, including supplementary and complementary, are geometric properties. Two angles that compose 90° are complementary angles. Two angles that compose 180° are supplementary angles. Quadrilaterals include • squares • rectangles • parallelograms • trapezoids • rhombuses Side length can be used to describe triangles as • equilateral • isosceles • scalene Triangles can be classified according to angle as • right • obtuse • acute	Geometric properties are measurable. Geometric properties define a hierarchy for classifying shapes.	Identify relationships between the sides of a polygon, including parallel, equal length, or perpendicular, by measuring. Identify relationships between angles at vertices of a polygon, including equal, supplementary, and complementary, by measuring. Identify relationships between the faces of three-dimensional models of prisms, including parallel or perpendicular, by measuring. Describe triangles according to side length. Classify triangles as right, acute, or obtuse using geometric properties related to angles. Classify quadrilaterals in a hierarchy according to geometric properties.
	Transformations include • translations • rotations • reflections The distance between any two vertices of a shape is maintained in the image created by a transformation.	Geometric properties do not change when a polygon undergoes a transformation.	Examine geometric properties of polygons by translating, rotating, or reflecting using hands-on materials or digital applications.	Many shapes in the environment resemble polygons. Transformations can be used to illustrate geometric properties of a polygon.	A shape resembling a polygon that does not share the defining geometric properties of the polygon is a close approximation.	Show, using geometric properties, that a close approximation of a polygon is not the same as the polygon. Verify geometric properties of polygons by translating, rotating, or reflecting using hands-on materials or digital applications.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.					
Guiding Question	In what ways can length be communicated?			How can area characterize space?		
Learning Outcome	Students determine length using standard units.			Students interpret and express area.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	The basic unit of length in the metric system is the metre. Metric units are named using prefixes that indicate the relationship to the basic unit, including • milli: one thousand millimetres in one metre • centi: one hundred centimetres in one metre • deci: ten decimetres in one metre Metric units are abbreviated for convenience, including • m: metre • dm: decimetre • cm: centimetre • mm: millimetre Standard measuring tools show iterations of a standard unit from an origin. Units of length in the imperial system include inch, foot, and yard, related in these ways: • 12 inches in one foot • 36 inches in one yard • 3 feet in one yard Approximate conversions between metric and imperial are useful in real-world situations, including • $2\frac{1}{2}$ centimetres are approximately 1 inch • 1 metre is approximately 3 feet • 30 centimetres are approximately 1 foot • 1 metre is approximately 1 yard	Length is measured in standard units according to the metric system and the imperial system. Length can be expressed in various units according to context and desired precision.	Relate millimetres, centimetres, and metres. Relate inches to feet and yards. Justify the choice of millimetres, centimetres, or metres to measure various lengths. Measure lengths of straight lines and curves, with millimetres, centimetres, or metres. Recognize length expressed in metric or imperial units. Approximate a measurement in inches, feet, or yards using centimetres or metres.	Tiling is the process of measuring an area with many copies of a unit, without gaps or overlaps. The unit can be chosen based on the area to be measured. Area can be measured with non-standard units or standard units. The area of a rectangle equals the product of its perpendicular side lengths.	Area is a measurable attribute that describes the amount of two-dimensional space contained within a region. Area may be interpreted as the result of motion of a length. An area remains the same when decomposed or rearranged. Area is measured with equal-sized units that themselves have area and do not need to resemble the region being measured. The area of a rectangle can be perceived as square-shaped units structured in a two-dimensional array.	Model area by dragging a length using hands-on materials or digital applications. Recognize the rearrangement of area in First Nations, Métis, or Inuit design. Compare non-standard units that tile to non-standard units that do not tile. Measure area with non-standard units by tiling. Measure area with standard units by tiling with square centimetres. Visualize and model the area of various rectangles as two-dimensional arrays of square shaped units. Determine the area of a rectangle using multiplication. Solve problems involving area of rectangles.

	Grade 3			Grade 4		
	The perimeter of a polygon is the sum of the lengths of its sides.	Length remains the same when decomposed or rearranged.	Determine the perimeter of polygons. Determine the length of an unknown side given the perimeter of a polygon.			
	A benchmark is a known length to which another length can be compared. Length can be estimated using a personal or familiar referent.	Length can be estimated when less accuracy is required.	Identify referents for a centimetre and a metre. Estimate length by comparing to a benchmark. Estimate length by visualizing the iteration of a referent for a centimetre or metre.	Area can be estimated using a referent for a square centimetre.	Area can be estimated when less accuracy is required.	Identify referents for a square centimetre. Estimate an area by visualizing the iteration of a referent for a square centimetre. Estimate an area by rearranging or combining partial units.

	Grade 3			Grade 4		
Organizing Idea	Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.					
Guiding Question	How can angles broaden an understanding of space?			In what ways can angles be described?		
Learning Outcome	Students interpret angles.			Students determine and express angles using standard units.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Angle defines the space in • corners • bends • turns or rotations • intersections • slopes The arms of an angle can be line segments or rays. The end point of a line segment or ray is called a vertex.	An angle is the union of two arms with a common vertex. An angle can be interpreted as the motion of a length rotated about a vertex.	Recognize various angles in surroundings. Recognize situations in which an angle can be perceived as motion.	One degree represents $\frac{1}{360}$ of the rotation of a full circle. Angles can be classified according to their measure: • Acute angles measure less than 90°. • Right angles measure 90°. • Obtuse angles measure between 90° and 180°. • Straight angles measure 180°. A benchmark is a known angle to which another angle can be compared.	Angles are quantified by measurement and based on the division of a circle. An angle is measured with equal-sized units that themselves are angles.	Measure an angle with degrees using a protractor. Describe an angle as acute, right, obtuse, or straight. Relate angles of 90°, 180°, 270°, and 360° to fractions of a circle. Estimate angles by comparing to benchmarks of 45°, 90°, 180°, 270°, and 360°.
	Superimposing is the process of placing one angle over another to compare angles. A referent is a personal or familiar representation of a known angle.	Two angles can be compared directly or indirectly.	Compare two angles directly by superimposing. Compare two angles indirectly by superimposing a third angle. Estimate which of two angles is greater. Identify referents for 90°. Identify 90° angles in the environment using a referent.			

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Patterns: Awareness of patterns supports problem solving in various situations.					
Guiding Question	How can diverse representations of patterns contribute to interpretation of change?			How can sequences provide insight into change?		
Learning Outcome	Students analyze patterns in numerical sequences.			Students interpret and explain arithmetic and geometric sequences.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Ordinal numbers can indicate position in a sequence. Finite sequences, such as a countdown, have a definite end. Infinite sequences, such as the natural numbers, never end.	A sequence is a list of terms arranged in a certain order. Sequences may be finite or infinite.	Recognize familiar numerical sequences, including the sequence of even or odd numbers. Describe position in a sequence using ordinal numbers. Differentiate between finite and infinite sequences.	The sequences of triangular and square numbers are examples of increasing sequences. The Fibonacci sequence is an increasing sequence that occurs in nature.	Sequences may increase or decrease. Different representations can provide new perspectives of the increase or decrease of a sequence.	Investigate increasing sequences, including the Fibonacci sequence, in multiple representations. Create and explain increasing or decreasing sequences, including numerical sequences. Express a numerical sequence to represent a concrete or pictorial sequence.
	Numerical sequences can be constructed using addition, subtraction, multiplication, or division.	A sequence can progress according to a pattern.	Recognize skip-counting sequences in various representations, including rows or columns of a multiplication table. Determine any missing term in a skip-counting sequence using multiplication. Describe the change from term to term in a numerical sequence using mathematical operations.	An arithmetic sequence progresses through addition or subtraction. A skip-counting sequence is an example of an arithmetic sequence. A geometric sequence progresses through multiplication. A geometric sequence begins at a number other than zero.	An arithmetic sequence has a constant difference between consecutive terms. A geometric sequence has a constant multiplicative change between consecutive terms.	Recognize arithmetic and geometric sequences. Describe the initial term and the constant change in an arithmetic sequence. Express the first five terms of an arithmetic sequence related to a given initial term and constant change. Describe the initial term and the constant change in a geometric sequence. Express the first five terms of a geometric sequence related to a given initial term and constant change.

	Grade 3			Grade 4		
Organizing Idea	Time: Duration is described and quantified by time.					
Guiding Question	How can duration be communicated?			What might be the relevance of duration to daily living?		
Learning Outcome	Students tell time using clocks.			Students communicate duration with standard units of time.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Clocks relate seconds to minutes and hours according to a base-60 system. The basic unit of time is the second. One second is $\frac{1}{60}$ of a minute. One minute is $\frac{1}{60}$ of an hour. Analog and digital clocks represent time of day. Time of day can be expressed as a duration relative to 12:00 in two 12-hour cycles. Time of day can be expressed as a duration relative to 0:00 in one 24-hour cycle in some contexts, including French-language contexts.	Clocks are standard measuring tools used to communicate time.	Investigate relationships between seconds, minutes, and hours using an analog clock. Relate minutes past the hour to minutes until the next hour. Describe time of day as a.m. or p.m. relative to 12-hour cycles of day and night. Tell time using analog and digital clocks. Express time of day in relation to one 24-hour cycle.	Time of day can be expressed with fractions of a circle, including • quarter past the hour • half past the hour • quarter to the hour Duration can be determined by finding the difference between a start time and an end time.	Analog clocks can relate duration to a circle.	Relate durations of 15 minutes, 20 minutes, 30 minutes, 40 minutes, and 45 minutes to fractions of a circle. Express time of day using fractions. Determine duration in minutes using a clock. Apply addition and subtraction strategies to the calculation of duration. Convert between hours, minutes, and seconds. Compare the duration of events using standard units. Solve problems involving duration.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 3			Grade 4		
Organizing Idea	Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.					
Guiding Question	How can representation support communication?			In what ways can communication be shaped by the choice of representation?		
Learning Outcome	Students interpret and explain representations of data.			Students evaluate the use of scale in graphical representations of data.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Statistical questions are questions that can be answered by collecting data.	Representation connects data to a statistical question.	Formulate statistical questions for investigation. Predict the answer to a statistical question.	A statistical problem-solving process includes • formulating statistical questions • collecting data • representing data • interpreting data	Representation is part of a statistical problem-solving process.	Engage in a statistical problem-solving process.
	First-hand data is collected by the person using the data. Second-hand data is data collected by others from sources such as websites and social media.	Representation expresses data specific to a unique time and place. Representation tells a story about data.	Collect data using digital or non-digital tools and resources. Represent first-hand and second-hand data in a dot plot or bar graph with one-to-one correspondence. Describe the story that a representation tells about a collection of data in relation to a statistical question. Examine First Nations, Métis, or Inuit representations of data. Consider possible answers to a statistical question based on the data collected.	Many-to-one correspondence is the representation of many objects using one object or interval on a graph. Common graphs include • pictographs • bar graphs • dot plots	Representation can express many-to-one correspondence by defining a scale. Different representations tell different stories about the same data.	Select an appropriate scale to represent data. Represent data in a graph using many-to-one correspondence. Describe the effect of scale on representation. Justify the choice of graph used to represent certain data. Compare different graphs of the same data. Interpret data represented in various graphs.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: 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?			How can the infinite nature of the number line broaden the perception of number?		
Learning Outcome	Students analyze patterns in place value.			Students investigate magnitude with positive and negative numbers.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	A number expressed with more decimal places is more precise. A zero in the rightmost place of a decimal number does not change the value of the number. There are infinitely many decimal numbers between any two decimal numbers.	Place value symmetry extends infinitely to the left and right of the ones place.	Relate the names of place values that are the same number of places to the left and right of the ones place. Express numbers within 10 000 000, including decimal numbers to thousandths, using words and numerals. Relate a decimal number to its position on the number line. Determine a decimal number between any two other decimal numbers. Compare and order numbers, including decimal numbers. Express the relationship between two numbers, including decimal numbers, using $<$, $>$, or $=$. Round numbers, including decimal numbers, to various places according to context.	Negative numbers are to the left of zero on the number line visualized horizontally, and below zero on the number line visualized vertically. Positive numbers can be represented symbolically with or without a positive sign (+). Negative numbers are represented symbolically with a negative sign (−). Zero is neither positive nor negative. Negative numbers communicate meaning in context, including • temperature • debt • elevation Magnitude is a number of units counted or measured from zero on the number line. Every positive number has an opposite negative number with the same magnitude. A number and its opposite are called additive inverses.	Symmetry of the number line extends infinitely to the left and right of zero or above and below zero. Direction relative to zero is indicated symbolically with a positive or negative sign. Magnitude with direction distinguishes between positive and negative numbers.	Identify negative numbers in familiar contexts, including contexts that use vertical or horizontal models of the number line. Express positive and negative numbers symbolically, in context. Relate magnitude to the distance from zero on the number line. Relate positive and negative numbers, including additive inverses, to their positions on horizontal and vertical models of the number line. Compare and order positive and negative numbers. Express the relationship between two numbers, including positive and negative numbers, using $<$, $>$, or $=$.

	Grade 5			Grade 6		
				The set of integers includes all natural numbers, their additive inverses, and zero. The sum of any number and its additive inverse is zero. The sum of two positive numbers is a positive number. The sum of two negative numbers is a negative number. The sum of a positive number and a negative number can be interpreted as the sum of zero and another number.	Any number can be expressed as a sum in infinitely many ways.	Investigate addition of an integer and its additive inverse. Express zero as the sum of integers in multiple ways. Model the sum of two positive integers. Model the sum of two negative integers. Model the sum of a positive and negative integer as the sum of zero and another integer. Add any two integers.
				Subtracting a number is the same as adding its additive inverse.	The difference of any two numbers can be interpreted as a sum.	Express a difference as a sum.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: 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?			How can the processes of addition and subtraction be applied to problem solving?		
Learning Outcome	Students add and subtract within 1 000 000, including decimal numbers to thousandths, using standard algorithms.			Students solve problems using standard algorithms for addition and subtraction.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Standard algorithms are efficient procedures for addition and subtraction.	Addition and subtraction of numbers with many digits is facilitated by standard algorithms.	Add and subtract numbers, including decimal numbers, using standard algorithms. Assess the reasonableness of a sum or difference using estimation. Solve problems using addition and subtraction, including problems involving money.	Standard algorithms are reliable procedures for addition and subtraction. Contexts for problems involving addition and subtraction include money and metric measurement.	Addition and subtraction of numbers in problem-solving contexts is facilitated by standard algorithms.	Solve problems in various contexts using standard algorithms for addition and subtraction.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	In what ways can divisibility characterize natural numbers?			How can prime factorization and exponentiation provide new perspectives of numbers?		
Learning Outcome	Students determine divisibility of natural numbers.			Students analyze numbers using prime factorization and exponentiation.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	A divisibility test can be used to determine factors of a natural number. Division by zero is not possible.	A number is divisible by another number if it can be divided with a remainder of 0.	Investigate divisibility by natural numbers to 10, including 0. Generalize divisibility tests for 2, 3, and 5. Determine factors of natural numbers using divisibility tests.	The order in which three or more numbers are multiplied does not affect the product (associative property). Any composite number can be expressed as a product of smaller numbers (factorization). Prime factorization represents a number as a product of prime numbers. Any composite factor of a number can be determined from its prime factors.	A product can be composed in multiple ways. The prime factors of a number provide a picture of its divisibility.	Compose a product in multiple ways, including with more than two factors. Express the prime factorization of a composite number. Determine common factors for two natural numbers, using prime factorization. Determine divisibility of a natural number from its prime factorization.
				Repeated multiplication of identical factors can be represented symbolically as a power (exponentiation). A power, A^n, includes a base, A, representing the repeated factor, and an exponent, n, indicating the number of repeated factors. Any repeated prime factor within a prime factorization can be expressed as a power.	Different representations of a product can provide new perspectives of its divisibility. A power is divisible by its base.	Identify the base and exponent in a power. Express the product of identical factors as a power, including within a prime factorization. Describe the divisibility of numbers represented in various forms.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: 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?			How can the processes of multiplication and division be applied to decimal numbers?		
Learning Outcome	Students multiply and divide natural numbers within 100 000, including with standard algorithms.			Students apply standard algorithms to multiplication and division of decimal and natural numbers.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Multiplication and division of numbers with many digits is facilitated by standard algorithms.	Standard algorithms are efficient procedures for multiplication and division.	Explain the standard algorithms for multiplication and division of natural numbers. Multiply up to 3-digit by 2-digit natural numbers using standard algorithms. Divide 3-digit by 1-digit natural numbers using standard algorithms. Express a quotient with or without a remainder according to context. Assess the reasonableness of a product or quotient using estimation. Solve problems using multiplication and division of natural numbers.	Standard algorithms are reliable procedures for multiplication and division of numbers, including decimal numbers. A quotient with a remainder can be expressed as a decimal number.	Multiplication and division of decimal numbers is facilitated by standard algorithms.	Explain the standard algorithms for multiplication and division of decimal numbers. Multiply and divide up to 3-digit natural or decimal numbers by 2-digit natural numbers, using standard algorithms. Assess the reasonableness of a product or quotient using estimation. Solve problems using multiplication and division, including problems involving money.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	In what ways can fractions communicate numbers greater than one?			How can equal sharing contribute meaning to fractions?		
Learning Outcome	Students interpret improper fractions.			Students relate fractions to quotients.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	A fraction can represent quantities greater than one. An improper fraction has a numerator that is greater than its denominator. Natural numbers can be expressed as improper fractions with a denominator of 1. 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.	Fractions allow counting and measuring between whole quantities. Improper fractions and mixed numbers that represent the same number are associated with the same point on the number line.	Relate fractions, improper fractions, and mixed numbers to their positions on the number line. Count beyond 1 using fractions with the same denominator. Model fractions, including improper fractions and mixed numbers, using quantities, lengths, and areas. Express improper fractions and mixed numbers symbolically. Express an improper fraction as a mixed number and vice versa. Compare fractions, including improper fractions and mixed numbers, to benchmarks of 0, $\frac{1}{2}$, and 1.	An equal-sharing situation can be represented by a fraction in which the numerator represents the quantity to be shared and the denominator represents the number of shares. Division can be used to determine an equal share. Division of the numerator by the denominator of a fraction provides the equivalent decimal number.	Fractions represent quotients in equal-sharing situations. All equivalent fractions represent the same quotient.	Model an equal-sharing situation in more than one way. Describe an equal-sharing situation using a fraction. Express a fraction as a division statement and vice versa. Convert a quotient from fraction to decimal form using division.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	How can the composition of fractions facilitate operating with fractions?			How can the addition and subtraction of fractions be generalized?		
Learning Outcome	Students add and subtract fractions with common denominators.			Students add and subtract fractions with denominators within 100.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Fractions with common denominators can be composed or decomposed to model the change in a quantity of unit fractions. Addition and subtraction of fractions with common denominators does not change the unit fraction from which they are composed. Fractions greater than one can be added or subtracted as mixed numbers or improper fractions.	Fractions with common denominators are multiples of the same unit fraction. Properties for addition and subtraction of natural numbers apply to fractions.	Investigate the composition and decomposition of a quantity within 1 using unit fractions. Express the composition or decomposition of fractions with common denominators as a sum or difference. Compare strategies for adding or subtracting improper fractions to strategies for adding or subtracting mixed numbers. Add and subtract fractions with common denominators within 100, including improper fractions and mixed numbers. Solve problems requiring addition and subtraction of fractions with common denominators, including improper fractions and mixed numbers.	Addition and subtraction of fractions is facilitated by representing the fractions with common denominators. Denominators are related if one is a multiple of the other. Multiplication of one denominator by the factor that relates it to another denominator achieves common denominators. The product of the denominators of two fractions provides a common denominator.	Fractions with common denominators have the same units. Any numbers with the same unit can be compared, added, or subtracted.	Recognize two fractions with related denominators. Determine the factor that relates one denominator to another. Express two fractions with common denominators. Add and subtract fractions. Solve problems involving addition and subtraction of fractions.

	Grade 5			Grade 6		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question				How can an understanding of multiplication be extended to fractions?		
Learning Outcome				Students interpret the multiplication of natural numbers by fractions.		
				Knowledge	Understanding	Skills & Procedures
				Multiplication of a natural number by a fraction is equivalent to multiplication by the fraction's numerator and division by its denominator. $a \times \frac{b}{c} = \frac{ab}{c}$ Multiplication by a unit fraction is equivalent to division by its denominator. $a \times \frac{1}{b} = \frac{a}{b}$ The product of a fraction and a natural number is the fraction with • a numerator that is the product of the numerator of the given fraction and the natural number • a denominator that is the denominator of the given fraction $\frac{a}{b} \times c = \frac{ac}{b}$	Multiplication does not always result in a larger number. Multiplication of a natural number by a fraction can be interpreted as repeated addition of the fraction. Multiplication of a fraction by a natural number can be interpreted as taking part of a quantity.	Relate multiplication of a natural number by a fraction to repeated addition of the fraction. Multiply a natural number by a fraction. Relate multiplication by a unit fraction to division. Multiply a natural number by a unit fraction. Model a fraction of a natural number. Multiply a fraction by a natural number. Solve problems using multiplication of a fraction and a natural number.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
Guiding Question	How can ratios provide new ways to relate numbers?			In what ways can equivalent ratios support proportional reasoning?		
Learning Outcome	Students employ ratios to represent relationships between quantities.			Students apply equivalence to the interpretation of ratios and rates.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	A ratio can express part-part or part-whole relationships between two countable or measurable quantities. A ratio can be expressed with a fraction or with a colon. A percentage represents a part-whole ratio that compares a quantity to 100.	A ratio is a comparison of two quantities in a specific situation. Fractions, decimals, ratios, and percentages can represent the same part-whole relationship.	Express part-part ratios and part-whole ratios of the same whole to describe various situations. Express, symbolically, the same part-whole relationship as a ratio, fraction, decimal, and percentage.	A proportional relationship exists when one quantity is a multiple of the other. Equivalent ratios can be created by multiplying or dividing both terms of a given ratio by the same number. A proportion is an expression of equivalence between two ratios. A rate describes the proportional relationship represented by a set of equivalent ratios. A unit rate expresses a proportional relationship as a rate with a second term of 1. A percentage describes a proportional relationship between a quantity and 100. Percent of a number can be determined by multiplying the number by the percent and dividing by 100.	All equivalent ratios express the same proportional relationship. A rate can be used to extend a given proportional relationship to different quantities.	Determine whether two ratios are equivalent. Determine an equivalent ratio using a proportion. Express a unit rate to represent a given rate, including unit price and speed. Relate percentage of a number to a proportion. Determine a percent of a number, limited to percentages within 100%. Solve problems involving ratios, rates, and proportions.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Algebra: Equations express relationships between quantities.					
Guiding Question	How can expressions enhance communication of number?			How can expressions support a generalized interpretation of number?		
Learning Outcome	Students interpret numerical and algebraic expressions.			Students analyze expressions and solve algebraic equations.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Numerical expressions with multiple operations may include parentheses to group numbers and operations. The conventional order of operations includes performing operations in parentheses before other operations.	Numerical expressions represent a quantity of known value. Parentheses change the order of operations in a numerical expression.	Evaluate numerical expressions involving addition or subtraction in parentheses according to the order of operations.	Numerical expressions can include powers. The conventional order of operations includes performing operations in parentheses, followed by evaluating powers before other operations.	The conventional order of operations can be applied to simplify or evaluate expressions.	Evaluate numerical expressions involving operations in parentheses and powers according to the order of operations.
	Expressions that include variables are called algebraic expressions. A variable can be interpreted as a specific unknown value and is represented symbolically with a letter. Products with variables are expressed without the multiplication sign. Quotients with variables are expressed using fraction notation. An algebraic term is the product of a number, called a coefficient, and a variable. A constant term is a number. A variable can be replaced by a given number in order to evaluate an expression.	Algebraic expressions use variables to represent quantities of unknown value. Algebraic expressions may be composed of one algebraic term or the sum of algebraic and constant terms.	Relate repeated addition of a variable to the product of a number and a variable. Express the product of a number and a variable using a coefficient. Express the quotient of a variable and a number as a fraction. Recognize a product with a variable, a quotient with a variable, or a number as a single term. Write an algebraic expression involving one or two terms to describe an unknown value. Evaluate an algebraic expression by substituting a given number for the variable.	Algebraic terms with exactly the same variable are like terms. Constant terms are like terms. Like terms can be combined through addition or subtraction. The terms of an algebraic expression can be rearranged according to algebraic properties. Algebraic properties include • commutative property of addition: $a + b = b + a$, for any two numbers a and b • commutative property of multiplication: $ab = ba$ for any two numbers a and b • associative property of addition: $(a + b) + c = a + (b + c)$ • associative property of multiplication: $a(bc) = b(ac)$ • distributive property: $a(b + c) = ab + ac$	Algebraic properties ensure equivalence of algebraic expressions.	Investigate like terms by modelling an algebraic expression. Simplify algebraic expressions by combining like terms. Express the terms of an algebraic expression in a different order in accordance with algebraic properties.

	Grade 5			Grade 6		
	The process of applying inverse operations can be used to solve an equation. The value of the variable obtained by solving an equation is the solution.	Equality is preserved by applying inverse operations to algebraic expressions on each side of an equation. The expressions on each side of an equation will be equal when evaluated using the correct solution.	Write equations involving one or two operations to represent a situation. Investigate order of operations when performing inverse operations on both sides of an equation. Apply inverse operations to solve an equation, limited to equations with one or two operations. Verify the solution to an equation by evaluating expressions on each side of the equation. Solve problems using equations, limited to equations with one or two operations.	All simplified forms of an equation have the same solution.	Algebraic expressions on each side of an equation can be simplified into equivalent expressions to facilitate equation solving.	Simplify algebraic expressions on both sides of an equation. Solve equations, limited to equations with one or two operations. Determine different strategies for solving equations. Verify the solution to an equation by evaluating expressions on each side of the equation. Solve problems using equations, limited to equations with one or two operations.

	Grade 5			Grade 6		
Organizing Idea	Geometry: Shapes are defined and related by geometric attributes.					
Guiding Question	In what ways might symmetry characterize shape?			How can congruence support interpretation of symmetry?		
Learning Outcome	Students investigate symmetry as a geometric property.			Students analyze shapes through symmetry and congruence.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	A 2-D shape has reflection symmetry if there is a straight line over which the shape reflects and the two halves exactly match. A 3-D shape has reflection symmetry if there is a plane over which the shape reflects and the two halves exactly match. A 2-D shape has rotation symmetry if it exactly overlaps itself one or more times within a rotation of less than 360° around its centre point. Order of rotation symmetry describes the number of times a shape coincides with itself within a rotation of 360° around its centre point. Central symmetry is the rotational symmetry by 180°. The straight line that connects a point with its image in the central symmetry passes through the centre of rotation. Symmetry can be found in First Nations, Métis, and Inuit designs, such as • basket weaving • wampum belts • quilts • First Nations beadwork, Inuit beadwork, or Métis floral beadwork • architecture such as tipis or longhouses	Symmetry is a property of shapes. Symmetry can be created and can occur in nature.	Recognize symmetry in nature. Recognize symmetry in First Nations, Métis, and Inuit designs. Investigate symmetry in familiar 2-D and 3-D shapes using hands-on materials or digital applications. Show the line of symmetry of a 2-D shape. Describe the order of rotation symmetry of a 2-D shape.	Symmetrical shapes can be mapped by any combination of reflections and rotations. A tessellation is the tiling of a plane with symmetrical shapes. Tessellations are evident in First Nations and Métis star blanket designs that convey a specific purpose.	Symmetry is a relationship between two shapes that can be mapped exactly onto each other through reflection or rotation.	Verify symmetry of two shapes by reflecting or rotating one shape onto another. Describe the symmetry between two shapes as reflection symmetry or rotation symmetry. Visualize and describe a combination of two transformations that relate symmetrical shapes. Describe the symmetry modelled in a tessellation. Investigate tessellations found in objects, art, or architecture.

	Grade 5			Grade 6		
	In a regular polygon, the number of sides equals the number of reflection symmetries and the number of rotation symmetries. A circle has infinitely many reflection and rotation symmetries.	Symmetry is related to other geometric properties.	Compare the number of reflection and rotation symmetries of a 2-D shape to the number of equal sides and angles. Classify 2-D shapes according to the number of reflection or rotation symmetries.	Shapes related by symmetry are congruent to each other. Congruent shapes may not be related by symmetry.	Congruence is a relationship between two shapes of identical size and shape. Congruence is not dependent on orientation or location of the shapes.	Demonstrate congruence between two shapes in any orientation by superimposing using hands-on materials or digital applications. Describe symmetrical shapes as congruent.

	Grade 5			Grade 6		
Organizing Idea	Coordinate Geometry: 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?			In what ways can location be communicated?		
Learning Outcome	Students relate location to position on a grid.			Students explain location and movement in relation to position in the Cartesian plane.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Coordinate grids use coordinates to indicate the location of the point where the vertical and horizontal grid lines intersect. 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. Positional language includes • left • right • up • down	Location can describe the position of shapes in space. Location can be described precisely using a coordinate grid.	Locate a point on a coordinate grid given the coordinates of the point. Describe the location of a point on a coordinate grid using coordinates. Describe the location of a point on a coordinate grid in relation to the location of another point using positional language. Model a polygon on a coordinate grid using coordinates to indicate the vertices. Describe the location of the vertices of a polygon on a coordinate grid using coordinates.	The Cartesian plane is named after French mathematician René Descartes. The Cartesian plane uses coordinates, (x, y), to indicate the location of the point where the vertical line passing through $(x, 0)$ and the horizontal line passing through $(0, y)$ intersect. The x-axis consists of those points whose y-coordinate is zero, and the y-axis consists of those points whose x-coordinate is zero. The x-axis and the y-axis intersect at the origin, $(0, 0)$. An ordered pair is represented symbolically as (x, y). An ordered pair indicates the horizontal distance from the y-axis with the x-coordinate and the vertical distance from the x-axis with the y-coordinate.	Location can be described using the Cartesian plane. The Cartesian plane is the two-dimensional equivalent of the number line.	Relate the axes of the Cartesian plane to intersecting horizontal and vertical representations of the number line. Locate a point in the Cartesian plane given the coordinates of the point. Describe the location of a point in the Cartesian plane using coordinates. Model a polygon in the Cartesian plane using coordinates to indicate the vertices. Describe the location of the vertices of a polygon in the Cartesian plane using coordinates.

	Grade 5			Grade 6		
				A translation describes a combination of horizontal and vertical movements as a single movement. A reflection describes movement across a line of reflection. A rotation describes an amount of movement around a turn centre along a circular path in either a clockwise or counter-clockwise direction.	Location can change as a result of movement in space. Change in location does not imply change in orientation.	Create an image of a polygon in the Cartesian plane by translating the polygon. Describe the horizontal and vertical components of a given translation. Create an image of a polygon in the Cartesian plane by reflecting the polygon over the x-axis or y-axis. Describe the line of reflection of a given reflection. Create an image of a polygon in the Cartesian plane by rotating the polygon 90°, 180°, or 270° about one of its vertices, clockwise or counter-clockwise. Describe the angle and direction of a given rotation. Relate the coordinates of a polygon and its image after translation, reflection, or rotation in the Cartesian plane.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.					
Guiding Question	In what ways can area be communicated?			In what ways can shapes be related using conservation of area?		
Learning Outcome	Students estimate and calculate area using standard units.			Students analyze areas of parallelograms and triangles.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Area is expressed in the following standard units, derived from standard units of length: • square centimetres • square metres • square kilometres A square centimetre (cm^2) is an area equivalent to the area of a square measuring 1 centimetre by 1 centimetre. A square metre (m^2) is an area equivalent to the area of a square measuring 1 metre by 1 metre. A square kilometre (km^2) is an area equivalent to the area of a square measuring 1 kilometre by 1 kilometre. Among all rectangles with the same area, the square has the least perimeter.	Area can be expressed in various units according to context and desired precision. Rectangles with the same area can have different perimeters.	Relate a centimetre to a square centimetre. Relate a metre to a square metre. Relate a square centimetre to a square metre. Express the relationship between square centimetres, square metres, and square kilometres. Justify the choice of square centimetres, square metres, or square kilometres as appropriate units to express various areas. Estimate an area by comparing to a benchmark of a square centimetre or square metre. Express the area of a rectangle using standard units given the lengths of its sides. Compare the perimeters of various rectangles with the same area. Describe the rectangle with the least perimeter for a given area. Solve problems involving perimeter and area of rectangles.	A parallelogram is any quadrilateral with two pairs of parallel and equal sides. Any side of a parallelogram can be interpreted as the base. The height of a parallelogram is the perpendicular distance from its base to its opposite side. The area of a triangle is half of the area of a parallelogram with the same base and height. Two triangles with the same base and height must have the same area.	The area of a parallelogram can be generalized as the product of the perpendicular base and height. The area of a triangle can be interpreted relative to the area of a parallelogram.	Rearrange the area of a parallelogram to form a rectangular area using hands-on materials or digital applications. Determine the area of a parallelogram using multiplication. Determine the base or height of a parallelogram using division. Model the area of a parallelogram as two congruent triangles. Describe the relationship between the area of a triangle and the area of a parallelogram with the same base and height. Determine the area of a triangle, including various triangles with the same base and height. Solve problems involving the areas of parallelograms and triangles.
				Area of composite shapes can be interpreted as the sum of the areas of multiple shapes, such as triangles and parallelograms.	An area can be decomposed in infinitely many ways.	Visualize the decomposition of composite areas in various ways. Determine the area of composite shapes using the areas of triangles and parallelograms.

	Grade 5			Grade 6		
Organizing Idea	Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.					
Guiding Question				How can volume characterize space?		
Learning Outcome				Students interpret and express volume.		
				Knowledge	Understanding	Skills & Procedures
				Volume can be measured in non-standard units or standard units. Volume is expressed in the following standard units, derived from standard units of length: • cubic centimetres • cubic metres A cubic centimetre (cm^3) is a volume equivalent to the volume of a cube measuring 1 centimetre by 1 centimetre by 1 centimetre. A cubic metre (m^3) is a volume equivalent to the volume of a cube measuring 1 metre by 1 metre by 1 metre. The volume of a right rectangular prism can be interpreted as the product of the two-dimensional base area and the perpendicular height of the prism.	Volume is a measurable attribute that describes the amount of three-dimensional space occupied by a three-dimensional shape. The volume of a prism can be interpreted as the result of perpendicular motion of an area. Volume remains the same when decomposed or rearranged. Volume is quantified by measurement. Volume is measured with congruent units that themselves have volume and do not need to resemble the shape being measured. The volume of a right rectangular prism can be perceived as cube-shaped units structured in a three-dimensional array.	Recognize volume in familiar contexts. Model volume of prisms by dragging or iterating an area using hands-on materials or digital applications. Create a model of a three-dimensional shape by stacking congruent non-standard units or cubic centimetres without gaps or overlaps. Express volume in non-standard units or cubic centimetres. Visualize and model the volume of various right rectangular prisms as three-dimensional arrays of cube-shaped units. Determine the volume of a right rectangular prism using multiplication. Solve problems involving volume of right rectangular prisms.

Mathematics Kindergarten to Grade 6 Curriculum

	Grade 5			Grade 6		
Organizing Idea	Patterns: Awareness of patterns supports problem solving in various situations.					
Guiding Question	How might representation of a sequence provide insight into change?			How can a function enhance interpretation of change?		
Learning Outcome	Students relate terms to position within an arithmetic sequence.			Students investigate functions to enhance understanding of change.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	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. Points representing an arithmetic sequence on a coordinate grid fit on a straight line. An algebraic expression can describe the relationship between the positions and terms of an arithmetic sequence.	Each term of an arithmetic sequence corresponds to a natural number indicating position in the sequence.	Represent one-to-one correspondence between positions and terms of an arithmetic sequence in a table of values and on a coordinate grid. Describe the graph of an arithmetic sequence as a straight line. Describe a rule, limited to one operation, that expresses correspondence between positions and terms of an arithmetic sequence. Write an algebraic expression, limited to one operation, that represents correspondence between positions and terms of an arithmetic sequence. Determine the missing term in an arithmetic sequence that corresponds to a given position. Solve problems involving an arithmetic sequence.	A variable can be interpreted as the values of a changing quantity. A function can involve quantities that change over time, such as • height of a person or plant • temperature • distance travelled A table of values lists the values of the independent variable in the first column or row and the values of the dependent variable in the second column or row to represent a function at certain points. The values of the independent variable are represented by x-coordinates in the Cartesian plane. The values of the dependent variable are represented by y-coordinates in the Cartesian plane.	A function is a correspondence between two changing quantities represented by independent and dependent variables. Each value of the independent variable in a function corresponds to exactly one value of the dependent variable.	Identify the dependent and independent variables in a given situation, including situations involving change over time. Describe the rule that determines the values of the dependent variable from values of the independent variable. Represent corresponding values of the independent and dependent variables of a function in a table of values and as points in the Cartesian plane. Write an algebraic expression that represents a function. Recognize various representations of the same function. Determine a value of the dependent variable of a function given the corresponding value of the independent variable. Investigate strategies for determining a value of the independent variable of a function given the corresponding value of the dependent variable. Solve problems involving a function.

	Grade 5			Grade 6		
Organizing Idea	Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.					
Guiding Question	How might frequency bring meaning to data?			How can frequency support communication?		
Learning Outcome	Students analyze frequency in categorical data.			Students investigate relative frequency using experimental data.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Frequency can be compared across categories to answer statistical questions. The mode is the category with the highest frequency.	Frequency is a count of categorized data, but it is not the data value itself.	Examine categorized data in tables and graphs. Determine frequency for each category of a set of data by counting individual data points. Identify the mode in various representations of data. Recognize data sets with no mode, one mode, or multiple modes. Justify possible answers to a statistical question using mode.	Relative frequency can be used to compare the same category of data across multiple data sets. Relative frequency can be represented in various forms.	Relative frequency expresses the frequency of a category of data as a fraction of the total number of data values.	Interpret frequency of categorized data as relative frequency. Express relative frequencies as decimals, fractions, or percentages.
	Data can be collected by asking closed-list and open-ended questions. Closed-list questions provide a list of possible responses to choose from. Open-ended questions allow any response. Responses can be categorized in various ways. Representations of frequency can include • bar graphs • dot plots • stem-and-leaf plots	Frequency can be a count of categorized responses to a question. Frequency can be used to summarize data. Frequency can be represented in various forms.	Discuss potential categories for open-ended questions and closed-list questions in relation to the same statistical question. Formulate closed-list questions to collect data to answer a statistical question. Categorize data that was collected using closed-list questions. Organize counts of categorized data in a frequency table. Create various representations of data, including with technology, to interpret frequency.	Equally likely outcomes of an experiment have the same chance of occurring. An event can be described as a combination of potential outcomes of an experiment, including • heads or tails from a coin toss • any roll of a die • the result of spinning a spinner The law of large numbers states that more independent trials of an experiment result in a better estimate of the expected likelihood of an event.	Frequency can be a count of categorized observations or trials in an experiment. Relative frequency of outcomes can be used to estimate the likelihood of an event. Relative frequency varies between sets of collected data. Relative frequency provides a better estimate of the likelihood of an event with larger amounts of data.	Identify the possible outcomes of an experiment involving equally likely outcomes. Collect categorized data through experiments. Predict the likelihood of an event based on the possible outcomes of an experiment. Determine relative frequency for categories of a sample of data. Describe the likelihood of an outcome in an experiment using relative frequency. Analyze relative frequency statistics from experiments with different sample sizes.