

Kindergarten	Grade 1	Grade 2
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NK.1
Say the whole number sequence by 1s starting anywhere from 0 to 10 and from 10 to 0.

N1.1
Say the number sequence, 0 to 100, by:
◦1s forward and backward between any two given numbers
◦2s to 20, forward starting at 0
◦5s and 10s to 100, forward starting at 0.

N2.1
Demonstrate understanding of whole numbers to 100 (concretely, pictorially, physically, orally, in writing, and symbolically) by:
◦representing (including place value)
◦describing
◦skip counting
◦differentiating between odd and even numbers
◦estimating with referents
◦comparing two numbers
◦ordering three or more numbers.

NK.2
Recognize, at a glance, and name familiar arrangements of 1 to 5 objects, dots, or pictures.

N1.2
Recognize, at a glance, and name familiar arrangements of 1 to 10 objects, dots, and pictures.

NK.3
Relate a numeral, 0 to 10, to its respective quantity.

N1.4
Represent and describe whole numbers to 20 concretely, pictorially, and symbolically.

NK.5
Compare quantities, 0 to 10, using one-to-one correspondence.

N1.5
Compare sets containing up to 20 elements to solve problems using:
◦referents (known quantity)
◦one-to-one correspondence.

N1.6
Estimate quantities to 20 by using referents.

N1.7
Demonstrate, concretely, physically, and pictorially, how whole numbers can be represented by a variety of equal groupings with and without singles.

N1.8
Identify the number, up to 20, that is one more, two more, one less, and two less than a given number.

NK.4

Represent the partitioning of whole numbers (1 to 10) concretely and pictorially.

N1.3

Demonstrate an understanding of counting by:

- indicating that the last number said identifies “how many”

- showing that any set has only one count using the counting on strategy

- using parts or equal groups to count sets.

N1.9

Demonstrate an understanding of addition of numbers with answers to 20 and the corresponding subtraction facts, concretely, pictorially, physically, and symbolically by:

- using familiar and mathematical language to describe additive and subtractive actions from their experience

- creating and solving problems in context that involve addition and subtraction

- modelling addition and subtraction using a variety of concrete and visual representations, and recording the process symbolically.

N1.10

Describe and use mental mathematics strategies (memorization not intended), such as:

- counting on and counting back

- making 10

- doubles

- using addition to subtract

to determine basic addition facts to 18 and related subtraction facts.

N2.2

Demonstrate understanding of addition (limited to 1 and 2-digit numerals) with answers to 100 and the corresponding

subtraction by:

- representing strategies for adding and subtracting concretely, pictorially, and symbolically

- creating and solving problems involving addition and subtraction

- estimating

- using personal strategies for adding and subtracting with and without the support of manipulatives

- analyzing the effect of adding or subtracting zero

- analyzing the effect of the ordering of the quantities (addends, minuends, and subtrahends) in addition and subtraction statements.

PK.1
Demonstrate an understanding of repeating patterns (two or three elements) by:
◦identifying
◦reproducing
◦extending
◦creating patterns using manipulatives, sounds, and actions.

P1.1
Demonstrate an understanding of repeating patterns (two to four elements) by:
◦describing
◦reproducing
◦extending
◦creating patterns using manipulatives, diagrams, sounds, and actions.

P1.2
Translate repeating patterns from one form of representation to another.

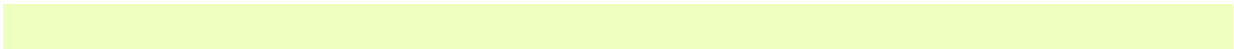
P1.3
Describe equality as a balance and inequality as an imbalance, concretely, physically, and pictorially (0 to 20).

P1.4
Record equalities using the equal symbol.

P2.1
Demonstrate understanding of repeating patterns (three to five elements) by:
◦describing
◦representing patterns in alternate modes
◦extending
◦comparing
◦creating patterns using manipulatives, pictures, sounds, and actions.

P2.2
Demonstrate understanding of increasing patterns by:
◦describing
◦reproducing
◦extending
◦creating patterns using manipulatives, pictures, sounds, and actions (numbers to 100).

P2.3
Demonstrate understanding of equality and inequality concretely and pictorially (0 to 100) by:
◦relating equality and inequality to balance
◦comparing sets
◦recording equalities with an equal sign
◦recording inequalities with a not equal sign
◦solving problems involving equality and inequality.



SSK.1

Use direct comparison to compare two objects based on a single attribute, such as:

- length including height

- mass
- volume
- capacity.

SS1.1

Demonstrate an understanding of measurement as a process of comparing by:

- identifying attributes that can be compared

- ordering objects
- making statements of comparison
- filling, covering, or matching.

SS2.1

Demonstrate understanding of non-standard units for linear measurement by:

- describing the choice and appropriate use of non-standard units

- estimating
- measuring
- comparing and analyzing measurements.

SS2.2

Demonstrate understanding of non-standard units for measurement of mass by:

- describing the choice and appropriate use of non-standard units

- estimating
- measuring
- comparing and analyzing measurements.

SSK.2
Sort 3-D objects using a single attribute.

SS1.2
Sort 3-D objects and 2-D shapes using one attribute, and explain the sorting rule.

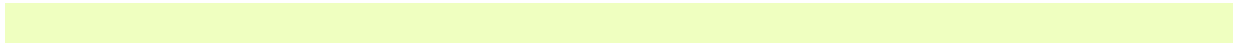
SS2.3
Describe, compare, and construct 3-D objects, including:
◦cubes
◦spheres
◦cones
◦cylinders
◦pyramids.

SS2.4
Describe, compare, and construct 2-D shapes, including:
◦triangles
◦squares
◦rectangles
◦circles.

SSK.3
Build and describe 3-D objects.

SS1.3
Replicate composite 2-D shapes and 3-D objects. SS1.4
Compare 2-D shapes to parts of 3-D objects in the environment.

SS2.5
Demonstrate understanding of the relationship between 2-D shapes and 3-D objects.



SP2.1
Demonstrate understanding of concrete graphs and pictographs.

Grade 3	Grade 4	Grade 5
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Number Strand		
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<p>N3.1 Demonstrate understanding of whole numbers to 1000 (concretely, pictorially, physically, orally, in writing, and symbolically) including:◦representing (including place value) ◦describing ◦estimating with referents ◦comparing two numbers ◦ordering three or more numbers.</p>	<p>N4.1 Demonstrate an understanding of whole numbers to 10 000 (pictorially, physically, orally, in writing, and symbolically) by:◦representing ◦describing ◦comparing two numbers ◦ordering three or more numbers.</p> <p>N4.7 Demonstrate an understanding of decimal numbers in tenths and hundredths (pictorially, orally, in writing, and symbolically) by:◦describing ◦representing ◦relating to fractions.</p>	<p>N5.1 Represent, compare, and describe whole numbers to 1 000 000 within the contexts of place value and the base ten system, and quantity. N5.6 Demonstrate understanding of decimals to thousandths by:◦describing and representing ◦relating to fractions ◦comparing and ordering.</p>
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N5.4
Develop and apply personal strategies for estimation and computation including:◦front-end rounding
◦compensation
◦compatible numbers.

N3.2

Demonstrate understanding of addition of whole numbers with answers to 1000 and their corresponding subtractions (limited to 1, 2, and 3-digit numerals) including:◦representing strategies for adding and subtracting concretely, pictorially, and symbolically
◦solving situational questions involving addition and subtraction
◦estimating using personal strategies for adding and subtracting.

N4.2

Demonstrate an understanding of addition of whole numbers with answers to 10 000 and their corresponding subtractions (limited to 3 and 4-digit numerals) by:◦using personal strategies for adding and subtracting
◦estimating sums and differences
◦solving problems involving addition and subtraction.

N4.8

Demonstrate an understanding of addition and subtraction of decimals limited to hundredths (concretely, pictorially, and symbolically) by:◦using compatible numbers
◦estimating sums and differences
◦using mental math strategies
◦solving problems.

N5.7

Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).

N3.3

Demonstrate understanding of multiplication to 5 x 5 and the corresponding division statements including:◦representing and explaining using repeated addition or subtraction, equal grouping, and arrays
◦creating and solving situational questions
◦modelling processes using concrete, physical, and visual representations, and recording the process symbolically
◦relating multiplication and division.

N4.3

Demonstrate an understanding of multiplication of whole numbers (limited to numbers less than or equal to 10) by:◦applying mental mathematics strategies
◦explaining the results of multiplying by 0 and 1

N4.4

Demonstrate an understanding of multiplication (2- or 3-digit by 1-digit) by:◦using personal strategies for multiplication, with and without concrete materials
◦using arrays to represent multiplication
◦connecting concrete representations to symbolic representations
◦estimating products
◦solving problems.

N4.5

Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by:◦using personal strategies for dividing with and without concrete materials
◦estimating quotients
◦explaining the results of dividing by 1
◦solving problems involving division of whole numbers
◦relating division to multiplication.

N5.2

Analyze models of, develop strategies for, and carry out multiplication of whole numbers.

N5.3

Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems.

N3.4

Demonstrate understanding of fractions concretely, pictorially, physically, and orally including:◦representing
◦observing and describing situations
◦comparing
◦relating to quantity.

N4.6

Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to:◦name and record fractions for the parts of a whole or a set
◦compare and order fractions
◦model and explain that for different wholes, two identical fractions may not represent the same quantity
◦provide examples of where fractions are used.

N5.5

Demonstrate an understanding of fractions by using concrete and pictorial representations to:◦create sets of equivalent fractions
◦compare fractions with like and unlike denominators.

P3.1

Demonstrate understanding of increasing and decreasing patterns including:
◦observing and describing
◦extending
◦comparing
◦creating patterns using manipulatives, pictures, sounds, and actions.

P4.1

Demonstrate an understanding of patterns and relations by:
◦identifying and describing patterns and relations in a chart, table or diagram
◦reproducing patterns and relations in a chart, table, or diagram using manipulatives
◦creating charts, tables, or diagrams to represent patterns and relations
◦solving problems involving patterns and relations

P5.1

Represent, analyse, and apply patterns using mathematical language and notation.

P3.2

Demonstrate understanding of equality by solving one-step addition and subtraction equations involving symbols representing an unknown quantity.

P4.2

Demonstrate an understanding of equations involving symbols to represent an unknown value by:
◦writing an equation to represent a problem
◦solving one step equations.

P5.2

Write, solve, and verify solutions of single-variable, one-step equations with whole number coefficients and whole number solutions.

Shape & Space Strand

SS3.1

Demonstrate understanding of the passage of time including:
◦relating common activities to standard and non-standard units
◦describing relationships between units
◦solving situational questions.

SS4.1

Demonstrate an understanding of time by:
◦reading and recording time using digital and analog clocks (including 24 hour clocks)
◦reading and recording calendar dates in a variety of formats.

SS3.3

Demonstrate understanding of linear measurement (cm and m) including:
◦selecting and justifying referents
◦generalizing the relationship between cm and m
◦estimating length and perimeter using referents
◦measuring and recording length, width, height, and perimeter.

SS4.2

Demonstrate an understanding of area of regular and irregular 2-D shapes by:
◦recognizing that area is measured in square units
◦selecting and justifying referents for the units cm^2 or m^2
◦estimating area by using referents for cm^2 or m^2
◦determining and recording area (cm^2 or m^2)
◦constructing different rectangles for a given area (cm^2 or m^2) in order to demonstrate that many different rectangles may have the same area.

SS5.1

Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions.

SS5.2

Demonstrate understanding of measuring length (mm) by:
◦selecting and justifying referents for the unit mm
◦modelling and describing the relationship between mm, cm, and m units

SS5.3

Demonstrate an understanding of volume by:
◦selecting and justifying referents for cm^3 or m^3 units

◦estimating volume by using referents for cm^3 or m^3

◦measuring and recording volume (cm^3 or m^3)

◦constructing rectangular prisms for a given volume.

SS5.4

Demonstrate understanding of capacity by:
◦describing the relationship between mL and L

◦selecting and justifying referents for mL or L units

◦estimating capacity by using referents for mL or L

◦measuring and recording capacity (mL or L).

SS3.2

Demonstrate understanding of measuring mass in g and kg by:
◦selecting and justifying referents for g and kg
◦modelling and describing the relationship between g and kg
◦estimating mass using referents
◦measuring and recording mass.

SS3.4

Demonstrate understanding of 3-D objects by analyzing characteristics including faces, edges, and vertices.

SS3.5

Demonstrate understanding of 2-D shapes (regular and irregular) including triangles, quadrilaterals, pentagons, hexagons, and octagons including:

- describing
- comparing
- sorting.

SS4.3

Demonstrate an understanding of rectangular and triangular prisms by:

- identifying common attributes
- comparing
- constructing models.

SS5.5

Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes that are:

- parallel
- intersecting
- perpendicular
- vertical
- horizontal.

SS5.6

Identify and sort quadrilaterals, including:

- rectangles
- squares
- trapezoids
- parallelograms
- rhombuses

according to their attributes.

SS4.4

Demonstrate an understanding of line symmetry by:

- identifying symmetrical 2-D shapes
- creating symmetrical 2-D shapes
- drawing one or more lines of symmetry in a 2-D shape.

SS5.7

Identify, create, and analyze single transformations of 2-D shapes (with and without the use of technology).

Statistics & Probability Strand

SP3.1

Demonstrate understanding of first-hand data using tally marks, charts, lists, bar graphs, and line plots (abstract pictographs), through:

- collecting, organizing, and representing
- solving situational questions.

SP4.1

Demonstrate an understanding of many-to-one correspondence by:

- comparing correspondences on graphs
- justifying the use of many-to-one correspondences
- interpreting data shown using a many-to-one correspondence
- creating bar graphs and pictographs using many-to-one correspondence.

SP5.2

Construct and interpret double bar graphs to draw conclusions. SP5.1 Differentiate between first-hand and second-hand data.

SP5.3

Describe, compare, predict, and test the likelihood of outcomes in probability situations.

Grade 6	Grade 7	Grade 8
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N6.1

Demonstrate understanding of place value including:
◦greater than one million
◦less than one thousandth

N6.5

Demonstrate understanding of percent (limited to whole numbers to 100) concretely, pictorially, and symbolically.

N6.6

Demonstrate understanding of integers concretely, pictorially, and symbolically.

N7.5

Develop and demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially, and symbolically (limited to positive sums and differences).

N7.6

Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially, and symbolically.

N6.4
Extend understanding of multiplication and division to decimals (1-digit whole number multipliers and 1-digit natural number divisors).
Demonstrate understanding of factors and multiples (concretely, pictorially, and symbolically) including:
◦determining factors and multiples of numbers less than 100
◦relating factors and multiples to multiplication and division
◦determining and relating prime and composite numbers.

N7.1
Demonstrate an understanding of division through the development and application of divisibility strategies for 2, 3, 4, 5, 6, 8, 9, and 10, and through an analysis of division involving zero.

N8.1
Demonstrate understanding of the square and principle square root of whole numbers concretely or pictorially and symbolically.
N8.5
Demonstrate understanding of multiplication and division of integers concretely, pictorially, and symbolically.

N6.7
Extend understanding of fractions to improper fractions and mixed numbers.
N6.8
Demonstrate an understanding of ratio concretely, pictorially, and symbolically.

N7.3
Demonstrate an understanding of the relationships between positive decimals, positive fractions (including mixed numbers, proper fractions and improper fractions), and whole numbers.

N8.2
Expand and demonstrate understanding of percents greater than or equal to 0% (including fractional and decimal percents) concretely, pictorially, and symbolically.

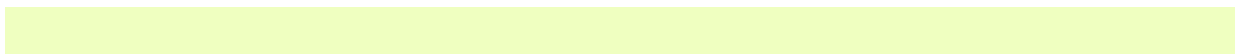
N7.4
Expand and demonstrate an understanding of percent to include fractional percents between 1% and 100%.

N8.3
Demonstrate understanding of rates, ratios, and proportional reasoning concretely, pictorially, and symbolically.
N8.4
Demonstrate understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially, and symbolically.

N6.3
Demonstrate understanding of the order of operations on whole numbers (excluding exponents) with and without technology.

N7.2
Expand and demonstrate understanding of the addition, subtraction, multiplication, and division of decimals to greater numbers of decimal places, and the order of operations.

N6.9
Research and present how First Nations and Métis peoples, past and present, envision, represent, and use quantity in their lifestyles and worldviews.



P6.1
Extend understanding of patterns and relationships in tables of values and graphs.
P6.3
Extend understanding of patterns and relationships by using expressions and equations involving variables.

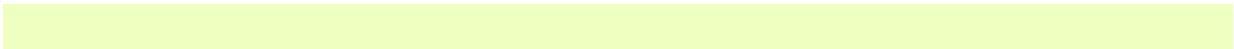
P7.1
Demonstrate an understanding of the relationships between oral and written patterns, graphs and linear relations.
P7.2
Demonstrate an understanding of equations and expressions by:
◦distinguishing between equations and expressions
◦evaluating expressions
◦verifying solutions to equations.

P8.1
Demonstrate understanding of linear relations concretely, pictorially (including graphs), physically, and symbolically.

P6.2
Extend understanding of preservation of equality concretely, pictorially, physically, and symbolically.

P7.3
Demonstrate an understanding of one- and two-step linear equations of the form $ax/b + c = d$ (where $a, b, c,$ and d are whole numbers, $c \leq d$ and $b \neq 0$) by modeling the solution of the equations concretely, pictorially, physically, and symbolically and explaining the solution in terms of the preservation of equality.
P7.4
Demonstrate an understanding of linear equations of the form (where a and b are integers) by modeling problems as a linear equation and solving the problems concretely, pictorially, and symbolically.

P8.2
Model and solve problems using linear equations of the form:
◦ $ax = b$
◦ $x/a = b, a \neq 0$
◦ $ax + b = c$
◦ $x/a + b = c, a \neq 0$
◦ $a(x + b) = c$
concretely, pictorially, and symbolically, where $a, b,$ and c are integers.



SS6.2

Extend and apply understanding of perimeter of polygons, area of rectangles, and volume of right rectangular prisms (concretely, pictorially, and symbolically) including:

- relating area to volume
- comparing perimeter and area
- comparing area and volume
- generalizing strategies and formulae
- analyzing the effect of orientation
- solving situational questions.

SS7.2

Develop and apply formulas for determining the area of:

- triangles
- parallelograms
- circles.

SS8.1

Demonstrate understanding of the Pythagorean Theorem concretely or pictorially and symbolically and by solving problems.

SS8.2

Demonstrate understanding of the surface area of 3-D objects limited to right prisms and cylinders (concretely, pictorially, and symbolically) by:

- analyzing views
- sketching and constructing 3-D objects, nets, and top, side, and front views
- generalizing strategies and formulae
- analyzing the effect of orientation
- solving problems.

SS8.3

Demonstrate understanding of volume limited to right prisms and cylinders (concretely, pictorially, or symbolically) by:

- relating area to volume
- generalizing strategies and formulae
- analyzing the effect of orientation
- solving problems.

SS6.3
Demonstrate understanding of regular and irregular polygons including:
◦classifying types of triangles
◦comparing side lengths
◦comparing angle measures
◦differentiating between regular and irregular polygons
◦analyzing for congruence.

SS6.4
Demonstrate understanding of the first quadrant of the Cartesian plane and ordered pairs with whole number coordinates.

SS6.5
Demonstrate understanding of single, and combinations of, transformations of 2-D shapes (with and without the use of technology) including:
◦identifying
◦describing
◦performing.

SS7.1
Demonstrate an understanding of circles including circumference and central angles.

SS7.4
Demonstrate an understanding of the Cartesian plane and ordered pairs with integral coordinates.

SS7.5
Expand and demonstrate an understanding of transformations (translations, rotations, and reflections) of 2-D shapes in all four quadrants of the Cartesian plane. [CN, PS, T, V]

SS8.4
Demonstrate an understanding of tessellation by:
◦explaining the properties of shapes that make tessellating possible
◦creating tessellations
◦identifying tessellations in the environment.

SS6.1
Demonstrate understanding of angles including:
◦identifying examples classifying angles
◦estimating the measure
◦determining angle measures in degrees
◦drawing angles
◦applying angle relationships in triangles and quadrilaterals.

SS7.3
Demonstrate an understanding of 2-D relationships involving lines and angles.

SP6.1
Extend understanding of data analysis to include:
◦line graphs
◦graphs of discrete data
◦data collection through questionnaires, experiments, databases, and electronic media
◦interpolation and extrapolation.

SP7.1
Demonstrate an understanding of the measures of central tendency and range for sets of data.

SP7.2
Demonstrate an understanding of circle graphs.

SP8.1
Analyze the modes of displaying data and the reasonableness of conclusions.

SP6.2
Demonstrate understanding of probability by:
◦determining sample space
◦differentiating between experimental and theoretical probability
◦determining the theoretical probability
◦determining the experimental probability
◦comparing experimental and theoretical probabilities.

SP7.3
Demonstrate an understanding of theoretical and experimental probabilities for two independent events where the combined sample space has 36 or fewer elements.

SP8.2
Demonstrate understanding of the probability of independent events concretely, pictorially, orally, and symbolically.

Grade 9

N9.1

Demonstrate (concretely, pictorially, and symbolically) understanding of powers with integral bases (excluding base 0) and whole number exponents

including:◦representing using powers

◦evaluating powers

◦powers with an exponent of zero

◦solving situational questions.

N9.3

Extend understanding of square roots to include the square root of positive rational numbers

N9.2

Demonstrate understanding of rational numbers including:◦comparing and ordering

◦relating to other types of numbers

◦solving situational questions.



P9.1

Demonstrate understanding of linear relations including:

- graphing
- analyzing
- interpolating and extrapolating
- solving situational questions.

P9.2

Model and solve situational questions using linear equations of the form:

- $ax = b$, $a \neq 0$
- $ax + b = c$
- $x/a + b = c$, $a \neq 0$
- $ax = b + cx$
- $a(x + b) = c$
- $ax + b = cx + d$
- $a(bx + c) = d(ex + f)$
- $a/x = b$, $x \neq 0$

where a , b , c , d , e , and f are rational numbers.

P9.3

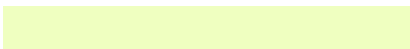
Demonstrate understanding of single variable linear inequalities with rational coefficients including:

- solving inequalities
- verifying
- comparing
- graphing.

P9.4

Demonstrate understanding of polynomials (limited to polynomials of degree less than or equal to 2) including:

- modeling
- generalizing strategies for addition, subtraction, multiplication, and division
- analyzing
- relating to context
- comparing for equivalency.



SS9.2

Extend understanding of area to surface area of right rectangular prisms, right cylinders, right triangular prisms, to composite 3-D objects.

SS9.1

Demonstrate understanding of circle properties including:

- perpendicular line segments from the centre of a circle to a chord bisect the chord
- inscribed angles subtended by the same arc have the same measure
- the measure of a central angle is twice the measure of an inscribed angle subtending the same arc
- tangents to a circle are perpendicular to the radius ending at the point of tangency.

SS9.3

Demonstrate understanding of similarity of 2-D shapes. SS9.4

Demonstrate understanding of line and rotation symmetry.



SP9.1

Demonstrate understanding of the effect of:

- bias
- use of language
- ethics
- cost
- time and timing
- privacy
- cultural sensitivity and
- population or sample on data collection.

SP9.2

Demonstrate an understanding of the collection, display, and analysis of data through a project.

SP9.3

Demonstrate an understanding of the role of probability in society.

SP9.4

Research and present how First Nations and Métis peoples, past and present, envision, represent, and make use of probability and statistics.