Alberta Mathematics K–9 Scope and Sequence – Number

	K	1	2	3	4	5	6	7	8	9	HS
Counting	Forward and backward by 1s (1–10) (N1) Subitizing 1–5 (N2)	Forward by 1s, 5s and 10s (0–100); forward by 2s (0–20); and backward by 1s (20–0) (N1) Subitizing 1–10 (N2) Understanding counting (N3) Conservation of number (N7) Estimate to 20 using referents (N6)	Forward and backward by 2s, 5s and 10s (0–100) (N1) Ordinal numbers to tenths (N3) Estimate to 100 using referents (N6)	Forward and backward by 3s, 4s, 5s, 10s, 25s and 100s (0–1000) (N1) Estimate to 1000 using referents (N4)							
Number Concepts	Natural numbers to 10 (N3, N4, N5)	Whole numbers to 20 (N4, N5)	Whole numbers to 100 (N4, N5) Even and odd numbers (N2) Place value to 100 (N7)	Whole numbers to 1000 (N2, N3) Place value to 1000 (N5) Fractions, like denominators and parts of a whole (N13)	Whole numbers to 10 000 (N1, N2) and decimals to hundredths (N9) Fractions and parts of a whole or a set (N8) Decimals to fractions and fractions to decimals (N10)	Whole numbers to 1 000 000 (N1) and decimals to thousandths (N8, N10) Fractions, like and unlike denominators and equivalent fractions (N7) Decimals to fractions and fractions to decimals (N9)	Integers (N7) Percent (N6) Ratio (N5) Place value: greater than 1 million and less than thousandths (N1) Improper fractions and mixed numbers (N4)	Solve problems 1–100% (N3) Fractions and terminating and repeating decimals (N4) Fractions, decimals and whole numbers (N7)	Perfect squares and square roots (N1) Approximate square root (N2) Percent ≥ 0 and > 100 (N3) Rate and ratio (N4, N5)	Square roots of rational numbers (N5, N6) Powers with whole-number exponents (N1) and operations on powers (N2) Rational numbers (N3)	Factors, multiples and roots (10C AN1) Powers (10C AN3) Irrational numbers (10C AN2) Rational expressions (20-1 AN4, 30-2 RF1) Proportional reasoning (10C M2, 10-3 N1)

This document is the scope and sequence of the concepts in the current Mathematics curriculum. The concepts circled in dark blue have a dark blue arrow indicating where the concepts are proposed to be moved to in the draft curriculum. The scope and sequence provided for the numeracy theme in the draft curriculum has no alignment with Alberta Education's numeracy progressions; consequently, many outcomes are not developmentally appropriate.

Text

	K	1	2	3	4	5	6	7	8	9	HS
Number Facts		Addition and subtraction • strategies to 9 + 9 • recall to a sum of 5 (N10)	Addition and subtraction • strategies to 9 + 9 • recall to 5 + 5 (N10)	Addition and subtraction • understand, recall and apply to 9 + 9 (N10) Multiplication and division • understand and recall to 5 x 5 (N11, N12)	**Draft: Up to 12x12** Multiplication and division • strategies to 9 x 9 • recall to 7 x 7 (N5)	Multiplication and division • understand, recall and apply to 9 x 9 (N3)					All outcomes where operations are used
Addition and Subtraction		Whole numbers to 20 (N9) Identify 1 or 2 more/less than a number, up to 20 (N8)	Whole numbers to 100 (N9) Effect of zero (N8)	Whole numbers to 1000 (N9) Mental math strategies (N6, N7) **Draft: Add and subtract fractions with like denominators** Estimation strategies (N8)	Whole numbers to 10 000 (N3) and decimals to hundredths (N11) **Draft: Add and subtract fractions with unlike denominators, will have to understand equivalent fractions to do this successfully**	Decimals to thousandths (N11) Estimation strategies in context (N2)	Problems using whole numbers and decimals (N2) Order of operations (whole numbers, no exponents) (N9)	Decimals (N2) Fractions (N5) Integers (N6)		Rational numbers, including order of operations (N3, N4)	Rational expressions (20-1 AN5, 30-2 RF2) Radical expressions (20-1 AN2)
Multiplication and Division					Multiplication, including estimation (2- or 3-digit by 1-digit) (N6) Division, including estimation (1-digit divisor, up to 2-digit dividend) (N7) Multiply by 0 and 1 and divide by 1 (N4)	Multiplication (two 2-digit) (N5) Division (3-digit by 1-digit) and remainders (N6) Estimation strategies in context (N2) Mental math strategies for multiplication (N4)	Decimals (1-digit multiplier and divisor) (N8) Problems using whole numbers and decimals (N2) Order of operations (whole numbers, no exponents) (N9) Factors and multiples, prime and composite (N3)	Decimals (N2) Divisibility rules (including 0) (N1)	Fractions (N6) Integers (N7)	Rational numbers, including order of operations (N3, N4)	Rational expressions (20-1 AN5, 30-2 RF2) Radical expressions (20-1 AN2) Factors (10C AN1) Polynomial expressions (10C AN4, AN5)

Alberta Mathematics K–9 Scope and Sequence – Patterns and Relations

	K	1	2	3	4	5	6	7	8	9	HS
Patterns and Relations	Repeating patterns, 2 or 3 elements (PR1)	Repeating patterns, 2 to 4 elements (PR1) Translate from one representation to another (PR2)	Repeating patterns, 3 to 5 elements (PR1) Increasing patterns, numerical (to 100) and non-numerical (PR2)	Increasing and decreasing patterns, numerical (to 1000) and non-numerical (PR1, PR2)	Patterns and relationships in tables, charts or diagrams (PR1, PR3, PR4) Translate representations (table, chart, concrete materials) (PR2)	Pattern rule for predictions (PR1)	Graphs and tables (PR1, PR2)	Oral patterns, written patterns and linear relations (PR1) Table of values, graph, analyze and problem solve with linear relations (PR2)	Graph and analyze two-variable linear relations (PR1)	Problem-solving using linear equations (PR1) Graph, analyze and interpolate and extrapolate linear relations (PR2)	Linear relations (10C RF3-7) Relationships among data and graphs (10C RF1) Arithmetic and geometric sequences and series (20-1 RF9, RF10)
Sort and Sorting Rule	Single attribute (set of objects) (PR2)	Single attribute (set of objects) (PR3)	Two attributes (set of objects) (PR3)	One or more attributes (set of objects or numbers) (PR3)							
Equations, Inequalities and Expressions		Balance and imbalance (PR4) Equal symbol (PR5)	Equality and inequality using symbols (PR4, PR5)	One-step equation, addition and subtraction (symbol for unknown number) (PR4)	Express problem as one-step equation (symbol for unknown number) and solve (PR5, PR6)	Express problem as one-step equation (letter variable for unknown number) and solve (PR2, PR3)	Express problem as equation, letter variable for unknown number and solve (PR3, PR4)	One-step and two-step linear equations (single variable) (PR6, PR7) Difference between expression and equation (PR4) Evaluate using given value (PR5) Preservation of equality (PR3)	Two-step linear equations (single variable) (PR2)	Multi-step linear equations (single variable) (PR3) Linear inequalities (single variable) (PR4) Polynomials (degree less than or equal to 2) (PR5) Polynomial operations (PR6, PR7)	Manipulate formulas (10-3 A1) Systems of linear equations (10C RF9) Linear and quadratic inequalities (20-1 RF7, RF8) Multiplying and factoring polynomials (10C AN4, AN5)

Draft: One-step

Draft: Two-step

Preservation of equality (PR5)

Current: In which grade do we start doing this?
Draft: Simplify algebraic expressions by combining like terms.
Express the terms of an algebraic expression in a different order in accordance with algebraic properties.

Alberta Mathematics K–9 Scope and Sequence – Shape and Space

	K	1	2	3	4	5	6	7	8	9	HS
Measurement	Direct comparison (length, mass and volume) (SS1)	Measurement as comparing (SS1)	Nonstandard units (length, height, distance around and mass) (SS2, SS3, SS4) Days to a week and months to a year (SS1)	Length and perimeter (cm, m); mass (g, kg) (SS3, SS4, SS5) **"Canadian units"** Nonstandard and standard units of time (SS1, SS2)	Area of regular and irregular shapes (cm^2, m^2) (SS3) Time (digital and analog clocks, 24-hour clocks) (SS1) Calendar dates (SS2)	Length (mm), volume (cm^3, m^3) and capacity (mL, L) (SS3, SS4, SS5) Rectangles, given perimeter or area (SS2) Identify 90° angles (SS1)	Perimeter (polygons), area (rectangles) and volume (rectangular prisms) (SS3) Angles (SS1) Sum of interior angles (triangle and quadrilateral) (SS2)	Area (triangles, parallelograms and circles) (SS2) Circles (radius, diameter and circumference) (SS1)	Surface area and nets (rectangular and triangular prisms, cylinders) (SS2, SS3) Volume (rectangular and triangular prisms, cylinders) (SS4) Pythagorean theorem (SS1)	Surface area of composite 3-D objects (SS2) Circle properties (SS1)	Surface area, volume (10C M3) Area (10-3 M4) SI and imperial units (10C M1; 10-3 M3) Angles (10-3 G6, 30-1 T1) Line and angle problems (10-3 G5, G6) Properties of angles and triangles (20-2 G1, G2) Pythagorean theorem (10-3 G2) Primary trigonometric ratios (10C M4, 10-3 G4)

	K	1	2	3	4	5	6	7	8	9	HS
Geometric Characteristics and Relationships	Sort 3-D objects, single attribute (SS2) Build 3-D objects (SS3)	Sort (one attribute), replicate and compare 3-D objects and 2-D shapes (SS2, SS3) Compare 2-D shapes to parts of 3-D objects (SS4)	Sort (two attributes), describe, compare and construct 3-D objects and 2-D shapes (SS6, SS7, SS8) Identify 2-D shapes as parts of 3-D objects (SS9)	Sort regular and irregular polygons (triangles, quadrilaterals, pentagons, hexagons and octagons) (SS7) 3-D objects (faces, edges and vertices) (SS6)	Describe and construct rectangular and triangular prisms (SS4)	Quadrilaterals (rectangles, squares, trapezoids, parallelograms and rhombuses) (SS7) Parallel, intersecting, perpendicular, vertical and horizontal (edges, faces and sides) (SS6)	Triangles (scalene, isosceles, equilateral, right, obtuse and acute) (SS4) Regular and irregular polygons (SS5)	Geometric constructions (SS3)	Top, front and side views (3-D objects) (SS5)	Similarity, polygons (SS3)	Similarity, polygons (10-3 G3) Line and angle problems (10-3 G5, G6) 3-D objects and their views (20-3 G3, G4)
Position and Transformations			Orientation and measurement (SS5)		Congruency (SS5) Line symmetry (SS6)	Single transformation concretely (SS8, SS9)	Plot points (1st quadrant of Cartesian plane) (SS8) Single transformation (SS6, SS9) Combination of transformations of 2-D shapes (SS7)	Plot points (all quadrants) (SS4) Single transformation (all quadrants) (SS5)	Congruency, polygons (SS6)	Scale diagrams (SS4) Line and rotation symmetry (SS5)	Scale (20-2 M2, M3; 20-3 G2, G4) Transformations (30-3 G3) Quadratic functions (20-1 RF3, 20-2 RF1)

For grade 4
Draft adds: Close approximations of polygons

Draft adds: Symmetry through a series of transformations, Tessellations

Alberta Mathematics K–9 Scope and Sequence – Statistics and Probability

	K	1	2	3	4	5	6	7	8	9	HS
Data Collection			Gather and record data (SP1)	Collect and organize first-hand data (SP1)		First-hand and second-hand data (SP1)	Methods of collecting data (SP2)			Data project (SP3) Factors that affect data collection (SP1) Population vs. sample (SP2)	Research project (20-2 RP1)
Data and Graphs			Concrete graphs and pictographs (one-to-one correspondence) (SP2)	Bar graphs (one-to-one correspondence) (SP2)	Bar graphs and pictographs (many-to-one correspondence) (SP1, SP2)	Double bar graphs (SP2) Added gr. 5 Draft: frequency in data	Line graphs (SP1) Graph collected data and analyze graph (SP3) Added gr. 5 Draft: relative frequency in data	Circle graphs (SP3) Central tendency, range and outliers (SP1, SP2)	Critique representation of data in graphs (SP1)	Data project (SP3)	Graphs (20-3 S1) Statistical data (20-2 S2) Normal distribution (20-2 S1) Central tendency (30-3 S1)
Probability						Likelihood of one or two outcomes (using words) (SP3, SP4)	Experimental vs. theoretical probability (SP4)	Experimental vs. theoretical probability (two events, sample space) (SP5, SP6) Probability as ratio, fraction and percent (SP4)	Independent events (SP2)	Role of probability in society (SP4)	Probability problems (30-2 P1–3, 30-3 P1) Fundamental counting principle (30-1 PCBT1, 30-2 P4)