Fall

HOW THE FALL CURRICULUM CHARTS ARE ORGANIZED

The Learning Outcomes that follow from **Mathematics** must be taught during the FALL season. Learning outcomes must be grounded in Nehiyaw Ways of Knowing and Land Based Learning.

The content from Land Based Learning, Nehiyaw Ways of Knowing, Social Studies and Science should be applied to the **Mathematics** outcomes. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections.

Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold; Others are *need to know* or *worth being familiar with*	Season	Nehiyaw Ways of Knowing and Land Based Learning FALL ELO rows are highlighted
	NUMBER		
Develop number sense	**1. Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9 or 10, and why a number cannot be divided by 0. [C, R]**		
	2. Demonstrate an understanding of the addition, subtraction, multiplication and division of decimals to solve problems (for more than 1-digit divisors or 2-digit multipliers, the use of technology is expected).		
	3. Solve problems involving percents from 1% to 100%. [C, CN, PS, R, T] [ICT: P2–3.4]		
	4. Demonstrate an understanding of the relationship between positive terminating decimals and positive fractions and between positive repeating decimals and positive fractions. [C, CN, R, T] [ICT: P2–3.4]		
	5. 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).		
	6. Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially and symbolically. [C, CN, PS, R, V]		

The Essential Learning Outcomes (ELOs) identified in these charts by the KTCEA working group are based on **their local context**. An educational authority from a different region of Alberta may identify different ELOs, based on their context. All outcomes in Alberta Education's Program of Studies must be taught, but what is deemed essential will look different, based on context.

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Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold; Others are *need to know* or *worth being familiar with*	Season	Nehiyaw Ways of Knowing and Land Based Learning FALL ELO rows are highlighted
Develop number sense	**7. Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: [CN, R, V]** • **benchmarks** • **place value** • **equivalent fractions and/or decimals.**		

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Winter

HOW THE WINTER CURRICULUM CHARTS ARE ORGANIZED

The Learning Outcomes that follow from **Mathematics** must be taught during the WINTER season. Learning outcomes must be grounded in Nehiyaw Ways of Knowing and Land Based Learning.

The content from Land Based Learning, Nehiyaw Ways of Knowing, Social Studies and Science should be applied to the **Mathematics** outcomes. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections.

Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold; Others are *need to know* or *worth being familiar with*	Season	Nehiyaw Ways of Knowing and Land Based Learning WINTER ELO rows are highlighted
	PATTERNS AND RELATIONS		
General Outcome (Patterns): Use patterns to describe the world and to solve problems.	**1. Demonstrate an understanding of oral and written patterns and their equivalent linear relations. [C, CN, R]**		
	2. Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, PS, R, V] [ICT: C7–3.1]		
General Outcome (Variables and Equations): Represent algebraic expressions in multiple ways.	**3. Demonstrate an understanding of preservation of equality by: [C, CN, PS, R, V]** • **modelling preservation of equality, concretely, pictorially and symbolically** • **applying preservation of equality to solve equations.**		
	4. Explain the difference between an expression and an equation. [C, CN]		
	5. Evaluate an expression, given the value of the variable(s). [CN, R]		
	6. Model and solve, concretely, pictorially and symbolically, problems that can be represented by one-step linear equations of the form x + a = b, where a and b are integers. [CN, PS, R, V]		

Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold; Others are *need to know* or *worth being familiar with*	Season	Nehiyaw Ways of Knowing and Land Based Learning WINTER ELO rows are highlighted
General Outcome (Variables and Equations): Represent algebraic expressions in multiple ways. (continued)	**7. Model and solve, concretely, pictorially and symbolically, problems that can be represented by linear equations of the form:** • **ax + b = c** • **ax = b** • **x/a=b , a ≠ 0** **where a, b and c are whole numbers. [CN, PS, R, V]**		

Spring

HOW THE SPRING CURRICULUM CHARTS ARE ORGANIZED

The Learning Outcomes that follow from **Mathematics** must be taught during the SPRING season. Learning outcomes must be grounded in Nehiyaw Ways of Knowing and Land Based Learning.

The content from Land Based Learning, Nehiyaw Ways of Knowing, Social Studies and Science should be applied to the **Mathematics** outcomes. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections.

Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold; Others are *need to know* or *worth being familiar with*	Season	Nehiyaw Ways of Knowing and Land Based Learning SPRING ELO rows are highlighted
	SHAPE AND SPACE		
General Outcome (Measurement): Use direct and indirect measurement to solve problems.	**1. Demonstrate an understanding of circles by: [C, CN, PS, R, V]** • **describing the relationships among radius, diameter and circumference** • **relating circumference to pi** • **determining the sum of the central angles** • **constructing circles with a given radius or diameter** • **solving problems involving the radii, diameters and circumferences of circles.**		
	2. Develop and apply a formula for determining the area of: [CN, PS, R, V] • **triangles** • **parallelograms** • **circles**		
General Outcome (3-D Objects and 2-D Shapes): Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	**3. Perform geometric constructions, including: [CN, R, V]** • **perpendicular line segments** • **parallel line segments** • **perpendicular bisectors** • **angle bisectors**		

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Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold; Others are *need to know* or *worth being familiar with*	Season	Nehiyaw Ways of Knowing and Land Based Learning SPRING ELO rows are highlighted
General Outcome (Transformations): Describe and analyze position and motion of objects and shapes.	**4. Identify and plot points in the four quadrants of a Cartesian plane, using integral ordered pairs. [C, CN, V]**		
	5. Perform and describe transformations (translations, rotations or reflections) of a 2-D shape in all four quadrants of a Cartesian plane (limited to integral number vertices). [C, CN, PS, T, V] [ICT: C6–3.4]		
STATISTICS AND PROBABILITY			
General Outcome (Data Analysis): Collect, display and analyze data to solve problems.	1. Demonstrate an understanding of central tendency and range by: [C, PS, R, T] [ICT: P2–3.4] • determining the measures of central tendency (mean, median, mode) and range • determining the most appropriate measures of central tendency to report findings		
	2. Determine the effect on the mean, median and mode when an outlier is included in a data set. [C, CN, PS, R]		
	3. Construct, label and interpret circle graphs to solve problems. [C, CN, PS, R, T, V] [ICT: P2–3.3]		

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