Mathology Grade 1 Correlation (Number) – Alberta

Materials referenced from other grades can be found in related Mathology Activity Kits and in mathology.ca

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

Guiding Question: How can quantity be communicated?
Learning Outcome: Students interpret and explain quantity to 100.

Knowledge	Understanding	Skills & Procedures	Grade 1 Mathology.ca and/or Activity Kit *(Suggested ways to align with 2022 curriculum)*	Mathology Little Books
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.	**Number Cluster 1: Counting** 1: Counting to 20 2: Counting to 50 **Number Cluster 6: Early Place Value** 24: Tens and Ones *(Currently to 50; Provide base ten blocks to 100.)* 25: Building and Naming Numbers 26: Different Representations *(Currently to 50; Include numbers 50-100 on Line Master 69.)* 27: Consolidation *(Currently to 50; Provide numbers to 100.)*	A Family Cookout *(Addresses numbers to 50.)* *Link to other grades:* *Grade 2* *Ways to Count (Addresses numbers to 100.)*
		Identify a quantity of 0 in familiar situations.	**Number Cluster 1: Counting** 3: Counting On and Back *(Discuss where 0 might be along the bunny's path.)*	

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.	**Number Cluster 1: Counting** 1: Counting to 20 2: Counting to 50 3: Counting On and Back *(Currently to 50; Remove numbers from Line Master 8C to count forward to 100.)* 5: Consolidation *(Currently to 50; Include numbers to 100.)* *Material from other grades:* ***Grade 2 Number Cluster 1: Counting*** *1: Bridging Tens (Currently up to 100)* *Optional:* **Number Cluster 8: Financial Literacy** 36: Value of Coins *(Use Student Card 36B to count by 1s.)* 37: Counting Collections *(Use Student Card 37A to skip count by 1s.)*	
		Count backward from 20 to 0 by 1s.	**Number Cluster 1: Counting** 3: Counting On and Back *(Currently back from 50; Remove Line Master 9C.)*	
		Skip count to 100, forward by 5s and 10s, starting at 0.	**Number Cluster 4: Skip-Counting** 13: Skip-Counting Forward *(Currently to 50; Have students use Hundred chart to skip-count to 100.)* 16: Consolidation *(Currently to 50; Provide additional linking cubes to 100.)* *Optional:* **Number Cluster 8: Financial Literacy** 36: Value of Coins *(Use Student Card 36A to skip count by 5s and 10s.)* 37: Counting Collections *(Use Student Card 37B to skip count by 5s and 10s.)*	How Many is too Many? *Link to other grades:* *Grade 2* *Ways to Count* *Family Fun Day*

		Skip count to 20, forward by 2s, starting at 0.	**Number Cluster 4: Skip-Counting** 13: Skip-Counting Forward *(Use side B.)* 16: Consolidation *(Currently to 50; Only provide 20 cubes when skip-counting by 2s.)* *Optional:* **Number Cluster 8: Financial Literacy** 36: Value of Coins *(Use Student Card 36B to skip count by 2s.)* 37: Counting Collections *(Use Student Card 37A to skip count by 2s.)*	On Safari!
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.	**Number Cluster 5: Composing and Decomposing** 21: Equal Groups	
		Demonstrate conservation of number when sharing or grouping.	**Number Cluster 5: Composing and Decomposing** 21: Equal Groups	
Familiar arrangements of small quantities facilitate subitizing.	A quantity can be perceived as the composition of smaller quantities.	Recognize quantities to 10.	**Number Cluster 2: Spatial Reasoning** 6: Subitizing to 10 8: Consolidation *(Use side B.)* **Number Cluster 7: Operational Fluency** *New Lesson to Come: Complements of 10*	
Comparisons of quantity can be described by using word such as • equal • not equal • less • more	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.	**Patterning Cluster 3: Equality and Inequality** 10: Exploring Sets 11: Making Equal Sets 12: Using Symbols 13: Consolidation	Nutty and Wolfy *Link to other grades:* *Grade 2* *Kokum's Bannock*
		Identify numbers that are one more, two more, one less, and two less than a given number.	**Number Cluster 7: Operational Fluency** 31: More or Less	

Equality can be modelled using a balance. The equal sign, =, is used to show equality between two quantities. The unequal sign, ≠, is used to show that two quantities are not equal.		Represent a quantity relative to another, including symbolically.	**Number Cluster 3: Comparing and Ordering** *New Lesson to Come: Comparing Sets Concretely* 10: Comparing Sets Pictorially *(Currently to 20)* 11: Comparing Numbers to 50 *(Provide additional craft sticks to 100.)* 12: Consolidation *(Currently to 50; Provide additional craft sticks to 100.)* **Number Cluster 6: Early Place Value** 28: More or Less *(Currently to 40)*	Paddling the River *(Addresses numbers to 20.)* Cats and Kittens *(Addresses numbers to 20.)* Nutty and Wolfy *(Addresses numbers to 20.)*

Guiding Question: How can addition and subtraction provide perspectives of number? **Learning Outcome:** Students examine addition and subtraction within 20.				
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 1 Mathology.ca and/or Activity Kit** *(Suggested ways to align with 2022 curriculum)*	**Mathology Little Books**
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.	**Number Cluster 2: Spatial Reasoning** 6: Subitizing to 10 8: Consolidation *(Use side B.)*	That's 10! *(Addresses numbers to 10.)* Paddling the River Hockey Time!
		Model addition and subtraction within 20 in various ways, including with a balance.	**Number Cluster 7: Operational Fluency** 29: Adding to 20 30: Subtracting 20 31: The Number Line 33: Part-Part-Whole	
		Relate addition and subtraction to various contexts involving composition or decomposition of quantity.	**Number Cluster 5: Composing and Decomposing** 17: Decomposing 10 18: Numbers to 10 19: Numbers to 20	
Strategies are meaningful steps taken to solve problems.	Addition and subtraction are opposite (inverse) mathematical operations.	Investigate addition and subtraction strategies.	**Number Cluster 5: Composing and Decomposing** 19: Numbers to 20 **Number Cluster 7: Operational Fluency** 32: Doubles	That's 10! Hockey Time! Canada's Oldest Sport

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		Add and subtract within 20.	**Number Cluster 5: Composing and Decomposing** 19: Numbers to 20 **Number Cluster 7: Operational Fluency** 29: Adding to 20 30: Subtracting 20 31: The Number Line 33: Part-Part-Whole 35: Consolidation *Link to other grades:* ***Grade 2 Number Cluster 7: Operational Fluency*** *34: Fluency with 20*	Buy 1—Get 1 Hockey Time! Cats and Kittens! Canada's Oldest Sport
		Check differences and sums using inverse operations.	**Number Cluster 7: Operational Fluency** 29: Adding to 20 30: Subtracting 20 31: The Number Line 32: Doubles 33: Part-Part-Whole 34: Solving Story Problems 35: Consolidation	Buy 1—Get 1 Canada's Oldest Sport Cats and Kittens! Hockey Time!
		Determine a missing quantity in a sum or difference, within 20, in a variety of ways.	**Number Cluster 7: Operational Fluency** 33: Part-Part-Whole 34: Solving Story Problems 35: Consolidation	
		Express addition and subtraction symbolically.	**Number Cluster 7: Operational Fluency** 31: The Number Line 33: Part-Part-Whole 34: Solving Story Problems 35: Consolidation	

• a + b = □ • a + □ = c • □ + b = c • e - f = □ • e - □ = g • □ - f = g		Solve problems using addition and subtraction.	**Number Cluster 7: Operational Fluency** 34: Solving Story Problems 35: Consolidation	
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.	**Number Cluster 7: Operational Fluency** *New Lesson to Come: Exploring Properties*	
		Recognize families of related addition and subtraction number facts.	**Number Cluster 7: Operational Fluency** 33: Part-Part-Whole *(Discuss how fact families can help find the unknown part or whole.)* 34: Solving Story Problems	
		Recall addition number facts, with addends to 10, and related subtraction number facts.	**Number Cluster 7: Operational Fluency** *New Lesson to Come: Complements of 10*	That's 10!

Guiding Question: In what ways can parts and wholes be related? **Learning Outcome:** Students examine one-half as a part-whole relationship.				
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 1 Mathology.ca and/or Activity Kit** *(Suggested ways to align with 2022 curriculum)*	**Mathology Little Books**
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.	*New Lesson to Come: Exploring Halves*	*Link to other grades:* *Grade 2* *The Best Birthday*
		Partition an even set of objects into two equal groups, limited to sets of 10 or less.	*New Lesson to Come: Exploring Halves*	*Link to other grades:* *Grade 2* *The Best Birthday*
		Partition a shape or object into two equal pieces.	*New Lesson to Come: Exploring Halves*	
		Describe one of two equal groups or pieces as one-half.	*New Lesson to Come: Exploring Halves*	
		Verify that the two halves of one whole group, shape, or object are the same size.	*New Lesson to Come: Exploring Halves*	

Mathology Grade 1 Correlation (Geometry) – Alberta

Organizing Idea:
Shapes are defined and related by geometric attributes.

<table>
<tr><td colspan="5">Guiding Question: In what ways can shape be characterized?
Learning Outcome: Students interpret shape in two and three dimensions.</td></tr>
<tr><th>Knowledge</th><th>Understanding</th><th>Skills & Procedures</th><th>Grade 1 Mathology.ca and/or Activity Kit
(Suggested ways to align with 2022 curriculum)</th><th>Mathology Little Books</th></tr>
<tr><td rowspan="3">Familiar two-dimensional shapes include

• squares
• circles
• rectangles
• triangles

Familiar three-dimensional shapes include

• cubes
• prisms
• cylinders
• spheres
• pyramids
• cones</td><td rowspan="3">A shape can be modelled in various sizes and orientations.

A shape is symmetrical if it can be decomposed into matching halves.</td><td>Identify familiar shapes in various sizes and orientations.</td><td>Geometry Cluster 1: 2-D Shapes
2: Identifying Triangles
3: Identifying Rectangles
4: Visualizing Shapes

Geometry Cluster 2: 3-D Solids
7: 3-D Solids
11: Face of Solids
14: Identifying Shapes</td><td>Memory Book
What Was Here?

Link to other grades:
<u>Kindergarten</u>
The Castle Wall</td></tr>
<tr><td>Model two-dimensional shapes.</td><td>Link to other grades:
Grade 2 Geometry Cluster 1: 2-D Shapes
3: Constructing 2-D Shapes
(Currently includes triangles; Have students also construct squares, rectangles, and circles.)</td><td></td></tr>
<tr><td>Sort shapes according to one attribute and describe the sorting rule.</td><td>Geometry Cluster 1: 2-D Shapes
1: Sorting Shapes
5: Sorting Rules
6: Consolidation</td><td>What Was Here?</td></tr>
</table>

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.			**Geometry Cluster 2: 3-D Solids** 8: Sorting 3-D Solids 9: Identifying the Sorting Rule 10: Consolidation	
		Compose and decompose two- or three-dimensional composite shapes.	**Geometry Cluster 3: Geometric Relationships** *New Lesson to Come: Constructing Solids and Skeletons* 12: Making Designs 13: Covering Outlines 15: Consolidation *Link to other grades:* ***Grade 2 Geometry Cluster 1: 2-D Shapes*** *3: Constructing 2-D Shapes* ***Grade 2 Geometry Cluster 3: Geometric Relationships*** *11: Making Shapes* *12: Building with Solids*	The Tailor Shop
		Identify familiar shapes within two- or three-dimensional composite shapes.	**Geometry Cluster 3: Geometric Relationships** *New Lesson to Come: Constructing Solids and Skeletons* 14: Identifying Shapes *Link to other grades:* ***Grade 2 Geometry Cluster 3: Geometric Relationships*** *11: Making Shapes* *12: Building with Solids*	The Tailor Shop What Was Here? Memory Book *Link to other grades:* *Kindergarten* *The Castle Wall* *Zoom In, Zoom Out*
		Investigate symmetry of two-dimensional shapes by folding and matching.	**Geometry Cluster 4: Symmetry** 16: Finding Lines of Symmetry 17: Creating Symmetrical Designs 18: Consolidation *Link to other grades:* ***Grade 2 Geometry Cluster 1: 2-D Shapes*** *4: Symmetry in 2-D Shapes*	The Tailor Shop

Mathology Grade 1 Correlation (Measurement) – Alberta

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

Guiding Question: In what ways can length provide perspectives of size?
Learning Outcome: Students relate length to the understanding of size.

Knowledge	Understanding	Skills & Procedures	Grade 1 Mathology.ca and/or Activity Kit *(Suggested ways to align with 2022 curriculum)*	Mathology Little Books
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	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.	**Measurement Cluster 2: Using Uniform Units** 7: Matching Lengths	Animal Measures The Amazing Seed *Link to other grades:* *Kindergarten* *The Best in Show*
		Compare and order objects according to length.	**Measurement Cluster 1: Comparing Objects** 1: Comparing Length **Measurement Cluster 2: Using Uniform Units** 7: Matching Lengths	Animals Measures
		Describe distance in familiar contexts.	*New Lesson to Come: Exploring Distance*	

• distance between objects on the land • distance between home and school • distance between towns or cities				
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.	**Measurement Cluster 1: Comparing Objects** 1: Comparing Length 3: Comparing Capacity 4: Making Comparisons *(Currently addresses length & capacity; Remove mass and incorporate areas; Provide opportunities for students to measure indirectly using a third object.)* 5: Comparing Area 6: Consolidation **Measurement Cluster 2: Using Uniform Units** 7: Matching Lengths	Animals Measures The Amazing Seed *Link to other grades:* *<u>Kindergarten</u>* *To Be Long*
		Order objects according to length, area, or capacity.	**Measurement Cluster 1: Comparing Objects** 1: Comparing Length 3: Comparing Capacity 4: Making Comparisons 5: Comparing Area 6: Consolidation **Measurement Cluster 2: Using Uniform Units** 7: Matching Lengths	The Amazing Seed

Mathology Grade 1 Correlation (Patterns) – Alberta

Organizing Idea:
Awareness of patterns supports problem solving in various situations.

Guiding Question: What can patterns communicate? **Learning Outcome:** Students examine pattern in cycles.				
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 1 Mathology.ca and/or Activity Kit** *(Suggested ways to align with 2022 curriculum)*	**Mathology Little Books**
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.	*New Lesson to Come: Investigating Cycles*	
		Investigate cycles found in nature that inform First Nations, Métis, or Inuit practices.	*New Lesson to Come: Investigating Cycles*	
		Identify the pattern core, up to four elements, in a cycle.	*New Lesson to Come: Identify and Describe Pattern in Cycles*	Midnight and Snowfall
		Identify a missing element in a repeating pattern or cycle.	*New Lesson to Come: Identify and Describe Pattern in Cycles*	Midnight and Snowfall
		Describe change and constancy in repeating patterns and cycles.	*New Lesson to Come: Identify and Describe Pattern in Cycles*	

		Create different representations of the same repeating pattern or cycle, limited to a pattern core of up to four elements.	*New Lesson to Come: Create and Extend Pattern in Cycles*	Midnight and Snowfall
		Extend a sequence of elements in various ways to create repeating patterns.	*New Lesson to Come: Create and Extend Pattern in Cycles*	Midnight and Snowfall

Mathology Grade 1 Correlation (Time) – Alberta

Organizing Idea:
Duration is described and quantified by time.

Guiding Question: How can time characterize change? **Learning Outcome:** Students explain time in relation to cycles.				
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 1 Mathology.ca and/or Activity Kit** ***(Suggested ways to align with 2022 curriculum)***	**Mathology Little Books**
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.	**Measurement Cluster 3: Time and Temperature** 16: Ordering Events 19: Relating to Seasons	
		Describe observable changes that indicate a cycle of time.	**Measurement Cluster 2: Time** 9: Relating to Seasons	
		Relate cycles of seasons to First Nations, Métis, or Inuit practices.	*New Lesson to Come: Cycles in Seasons*	
		Identify cycles from a calendar.	*Optional:* *20: The Calendar* *New Lesson to Come: Cycles in the Calendar*	

Mathology Grade 1 Correlation (Statistics) – Alberta

Organizing Idea:
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? **Learning Outcome:** Students investigate and represent data.				
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 1 Mathology.ca and/or Activity Kit** ***(Suggested ways to align with 2022 curriculum)***	**Mathology Little Books**
Data can be collected information.	Data can be answers to questions.	Share wonderings about people, things, events, or experiences.	*New Lesson to Come: Data in our World*	
		Gather data by sharing answers to questions.	**Data Management Cluster 1: Data Management** 2: Making Concrete Graphs 3: Making Pictographs	Graph It!
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.	**Data Management Cluster 1: Data Management** 2: Making Concrete Graphs 4: Consolidation	Graph It!
		Create a pictograph from a concrete graph.	**Data Management Cluster 1: Data Management** 3: Making Pictographs 4: Consolidation	Graph It!

Mathology Grade 1 Correlation (Financial Literacy) – Alberta

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

Guiding Question: In what ways can money be used? **Learning Outcome:** Students explore money and how it is used for everyday living.				
Knowledge	**Understanding**	**Skills & Procedures**	**Grade 1 Mathology.ca and/or Activity Kit** *(Suggested ways to align with 2022 curriculum)*	**Mathology Little Books**
Canadian money comes in many forms, such as • coins • bills • debit cards • credit cards Canadian coins and bills come in different denominations, such as • nickels • dimes • quarters • loonies • toonies • $5 • $10 • $20 • $50 • $100	Money can be used to exchange for goods and services. Money has value and purpose in everyday living. Money has unique features to represent its value.	Explore the value of Canadian coins and bills.	**Number Cluster 8: Financial Literacy** 36: Value of Coins *New Lesson to Come: Value of Bills*	
		Sort Canadian coins and bills.	**Number Cluster 8: Financial Literacy** 36: Value of Coins *New Lesson to Come: Value of Bills*	
		Identify goods and services that can be exchanged for money.	*New Lesson to Come: Goods and Services*	

Images on Canadian coins and bills include • wildlife • sports • boats • emblems • historic figures Money can be • shared • earned • saved • spent • borrowed Goods are things that are made and produced and can be touched, such as • toys • cars • clothing • electronics • books Services are things individuals do for others, such as • health services • personal services • entertainment • restaurants • recreational activities				