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| **MATH K** **Planning - KDU** |
| **CORE COMPETENCIES** **COMMUNICATION**  | **CORE COMPETENCIES** **THINKING (CRITICAL/CREATIVE)** | **CORE COMPETENCIES****(PERSONAL/SOCIAL)** |
| **CURRICULAR COMPETENCIES** | **BIG IDEA (Understand…)** | **What do we want students to DO?****(Activities, lessons…)**  | **Content (& Elaborations)****(Know)** |
| **Reasoning and analyzing*** Use reasoning and logic to explore and make connections
* Estimate reasonably *(estimating by comparing to something familiar (e.g., more than 5, taller than me); First Peoples used specific estimating and measuring techniques in daily life (e.g., seaweed drying and baling))*
* Develop mental math strategies *(working toward developing fluent and flexible thinking about number)* and abilities to make sense of quantities
* Use technology *(calculators, virtual manipulatives, concept-based apps)* to explore mathematics
* Model *(acting it out, using concrete materials, drawing pictures)*  mathematics in contextualized experiences

**Understanding and solving*** Develop, demonstrate and apply mathematical understanding through play, inquiry, and problem solving
* Visualize to explore mathematical concepts
* Develop and use multiple strategies *(visual, oral, role-play, experimental, written, symbolic)* to engage in problem solving
* Engage in problem-solving experiences that are connected *(in daily activities, local and traditional practices, the environment, popular media and news events, cross-curricular integration; Patterns are important in First Peoples technology, architecture, and artwork. Have students pose and solve problems or ask questions connected to place, stories, and cultural practices.)*  to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures

**Communicating and representing*** Communicate *(concretely, pictorially, symbolically, and by using spoken or written language to express, describe, explain, and apply mathematical ideas;*  *using technology such as screencasting apps, digital photos)* math thinking in many ways
* Use mathematical vocabulary and language to contribute to mathematical discussions
* Explain and justify *(using mathematical arguments; “Prove it!”)* mathematical ideas and decisions
* Represent mathematical ideas in concrete, pictorial, and symbolic forms *(Use local materials gathered outside for concrete and pictorial representations.)*

**Connecting and reflecting*** Reflect *(sharing the mathematical thinking of self and others, including evaluating strategies and solutions, extending, and posing new problems and questions)* on mathematical thinking
* Connect mathematical concepts to each other and to other areas and personal interests *(to develop a sense of how mathematics helps us understand ourselves and the world around us (e.g., daily activities, local and traditional practices, the environment, popular media and news events, social justice, and cross-curricular integration))*
* Incorporate *(Invite local First Peoples Elders and knowledge keepers to share their knowledge)* First Peoples worldviews and perspectives to make connections *(Bishop’s cultural practices: counting, measuring, locating, designing, playing, explaining)*  to mathematical concepts
 | Numbers represent quantities can be decomposed into smaller parts.One-to-one correspondence and a sense of 5 and 10 are essential for fluency *(develops from a strong sense of number)* with numbers.Repeating elements in patterns can be identified. | *Questions to support inquiry with students:* * How do these materials help us think about numbers and parts of numbers?
* Which numbers of counters/dots are easy to recognize and why?
* In how many ways can you decompose \_\_\_\_?
* What stories live in numbers?
* How do numbers help us communicate and think about place?
* How do numbers help us communicate and think about ourselves?
* If you know that 4 and 6 make 10, how does that help you understand other ways to make 10?
* How does understanding 5 help us decompose and compose numbers to 10?
* What parts make up the whole?
* What makes a pattern a pattern?
* How are these patterns alike and different?
* Do all patterns repeat?
 | * number concepts to 10 *(counting: one-to-one correspondence; conservation; cardinality; stable order counting; sequencing 1-10; linking sets to numerals; subitizing; using counting collections made of local materials; counting to 10 in more than one language, including local First Peoples language or languages)*
* ways to make 5 *(perceptual subitizing (e.g., I see 5); conceptual subitizing (e.g., I see 4 and 1); comparing quantities, 1-10; using concrete materials to show ways to make 5; Traditional First Peoples counting methods involved using fingers to count to 5 and for groups of 5.; aboriginalperspectives.uregina.ca/rosella/lessons/math/numberconcepts.shtml; ankn.uaf.edu/curriculum/Tlingit/Salmon/graphics/mathbook.pdf; youtube.com/watch?v=6-k\_5hezWPE))*
* decomposition of numbers to 10 *(decomposing and recomposing quantities to 10; Numbers can be arranged and recognized.; benchmarks of 5 and 10; making 10; part-part-whole thinking; using concrete materials to show ways to make 10; whole-class number talks; )*
* repeating patterns *(sorting and classifying using a single attribute; identifying patterns in the world; repeating patterns with 2-3 elements; identifying the core; representing repeating patterns in various ways; noticing and identifying repeating patterns in First Peoples and local art and textiles, including beadwork and beading, and frieze work in borders)* with two or three elements
* Change in quantity to 10 *(generalizing change by adding 1 or 2; modeling and describing number relationships through change (eg., build and change tasks - begin with four cubes, what do you need to do to change it to six? to change it to 3?))* using concrete materials
* equality as a balance *(modeling equality as balanced and inequality as imbalanced using concrete and visual models (e.g., using a pan balance with cubes on each side to show equal and not equal); fish drying and sharing)* and inequality as an imbalance
* financial literacy *(identifying values of coins (noticing attributes of the Canadian coins (colour, size, pictures); identifying the names of coins; role-playing financial transactions, such as in a restaurant, bakery, or store, using whole numbers to combine purchases (e.g., a muffin is $2.00 and a juice is $1.00), and integrating the concept of wants and needs; token value (e.g., wampum bead/trade beads for furs))* – attributes of coins and financial role-play
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| **Evidence of Experience (Show)** |
| **BIG IDEA (Understand…)** | **What do we want students to DO?****(Activities, lessons…)**  | **Content (& Elaborations)****(Know)** |
| Objects have attributes *(describe, measure, and compare spatial relationships.)* that can be described, measured, and compared. | *Questions to support inquiry with students:* * How can objects and shapes be described and measured in our world?
* What do you notice about these shapes?
* How are these shapes alike and different?
 | * Direct comparative measurement *(understanding the importance of using a baseline for direct comparison in linear measurement; linear-height, width, length (e.g., longer than, shorter than, taller than, wider than); mass (e.g., heavier than, lighter than, same as); capacity (e.g., holds more, holds less))* (eg. linear, mass, capacity)
* Single attributes *(At this level, using specific math terminology to name and identify 2D shapes and 3D objects is not expected.; sorting 2D shapes and 3D objects using a single attribute; building and describing 3D objects (e.g., shaped like a can); exploring, creating, and describing 2D shapes; using positional language, such as beside, on top of, under, and in front of)*  of 2D shapes and 3D objects
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| **Evidence of Experience (Show)** |
| **BIG IDEA (Understand…)** | **What do we want students to DO?****(Activities, lessons…)**  | **Content (& Elaborations)****(Know)** |
| Familiar events *(Analyzing data and chance enables us to compare and interpret.)* can be described as likely or unlikely and compared. | *Questions to support inquiry with students:* * When might we use words like unlikely and likely?
* How does data/information help us predict the likeliness of an event (e.g., weather)?
* What stories can data tell us?
 | * Concrete or pictorial graphs *(creating concrete and pictorial graphs to model the purpose of graphs and provide opportunities for mathematical discussions (e.g., survey the students about how they got to school, then represent the data in a graph and discuss together as a class))* as a visual tool
* Likelihood of familiar life events *(using the language of probability (e.g., never, sometimes, always, more likely, less likely) eg. Could it snow tomorrow?)*
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| **Evidence of Experience (Show)** |