|  |
| --- |
| **MATH 2**  **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)*
* 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 math
* Model *(acting it out, using concrete materials, drawing pictures)* math in contextualized experiences

**Understanding and solving*** Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving
* Visualize to explore mathematical concepts
* Develop & 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, and cultural practices relevant to the 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 *(how ovoid has different look to represent different animal parts; 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 (csus.edu/indiv/o/oreyd/ACP.htm\_files/abishop.htm); aboriginaleducation.ca; Teaching Mathematics in a First Nations Context,; FNESC fnesc.ca/k-7/)* to mathematical concepts
 | Numbers to 100 represent quantities that can be decomposed into 10s and 1s. Development of computational fluency in addition and subtraction with numbers to 100 requires an understanding of place value.The regular change in increasing patterns can be identified and used to make generalizations. | *Questions to support inquiry with students:* * How does understanding 5 or 10 help us think about other numbers?
* What is the relationship between 10s and 1s?
* What patterns do you notice in numbers?
* 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?
* What is the relationship between addition and subtraction?
* How can you use addition to help you subtract?
* How does understanding 10 help us to add and subtract two-digit numbers?
* How can we represent patterns in different ways/modes?
* How can you create repeating patterns with objects that are all one colour?
* What stories live in patterns?
 | * number concepts to 100 *(counting: skip-counting by 2, 5, and 10: using different starting points; increasing and decreasing (forward and backward); Quantities to 100 can be arranged and recognized: comparing and ordering numbers to 100; benchmarks of 25, 50, and 100; place value: understanding of 10s and 1s; understanding the relationship between digit places and their value, to 99 (e.g., the digit 4 in 49 has the value of 40); decomposing two-digit numbers into 10s and 1s; even and odd numbers)*
* benchmarks *(seating arrangements at ceremonies/feasts)* of 25, 50, and 100 and personal referents
* addition and subtraction facts to 20 *(adding and subtracting numbers to 20; fluency with math strategies for addition and subtraction (e.g., making or bridging 10, decomposing, identifying related doubles, adding on to find the difference))* (introduction of computational strategies)
* addition and subtraction to 100 *(decomposing numbers to 100; estimating sums and differences to 100; using strategies such as looking for multiples of 10, friendly numbers (e.g., 48 + 37, 37 = 35 +2, 48 + 2, 50 + 35 = 85), decomposing into 10s and 1s and recomposing (e.g., 48 + 37, 40 + 30 = 70, 8 +7 = 15, 70 +15 = 85), and compensating (e.g., 48 + 37, 48 +2 = 50, 37 – 2 = 35,; 50 + 35 = 80); adding up to find the difference; using an open number line, hundred chart, ten-frames; using addition and subtraction in real-life contexts and problem-based situations; whole-class number talks)*
* repeating and increasing patterns *(exploring more complex repeating patterns (e.g., positional patterns, circular patterns); identifying the core of repeating patterns (e.g., the pattern of the pattern that repeats over and over); increasing patterns using manipulatives, sounds, actions, and numbers (0 to 100); Métis finger weaving; First Peoples head/armband patterning; online video and text: Small Number Counts to 10; (mathcatcher.irmacs.sfu.ca/story/small-number-counts-100))*
* Change in quantity *(numerically describing a change in quantity (e.g., for 6 + n = 10, visualize the change in quantity by using ten-frames, hundred charts, etc.))* using pictorial and symbolic representation
* symbolic representation of equality and inequality
* financial literacy *(counting simple mixed combinations of coins to 100 cents; Introduction to the concepts of spending and saving, integrating the concepts of wants and needs.; role-playing financial transactions (e.g., using bills and coins))* — coin combinations to 100 cents, and spending and saving
 |
| **Evidence of Experience (Show)** |
| **BIG IDEA (Understand…)** | **What do we want students to DO?****(Activities, lessons…)**  | **Content (& Elaborations)****(Know)** |
| Objects and shapes have attributes *(describe, measure, and compare spatial relationships)* that can be described, measured, and compared. | *Questions to support inquiry with students:* * What 2D shapes live in objects in our world?
* How can you combine shapes to make new shapes?
 | * direct linear measurement *(centimetres and metres; estimating length; measuring and recording length, height, and width using standard units),* introducing standard metric units
* Multiple attributes of 2D shapes and 3D objects *(sorting 2D shapes and 3D objects using two attributes, and explaining the sorting rule; describing, comparing, and constructing 2D shapes, including triangles, squares, rectangles, circles; identifying 2D shapes as part of 3D objects; using traditional northwest coast First Peoples shapes (ovoids, U, split U, and local art shapes) reflected in the natural environment)*
 |
| **Evidence of Experience (Show)** |
| **BIG IDEA (Understand…)** | **What do we want students to DO?****(Activities, lessons…)**  | **Content (& Elaborations)****(Know)** |
| Concrete items can be represented, compared, and interpreted pictorially in graphs *(Analyzing data and chance enables us to compare and interpret.)*  | *Questions to support inquiry with students:* * When you look at this graph, what do you notice? What do you wonder?
* How do graphs help us understand data?
* What are some different ways to represent data pictorially?
 | * Pictorial representation *(collecting data, creating a concrete graph, and representing the graph using a pictorial representation through grids, stamps, drawings; one-to-one correspondence)* of concrete graphs using one-to-one correspondence
* Likelihood of familiar life events *(using comparative language (e.g., certain, uncertain; more, less, or equally likely))* using comparative language
 |
| **Evidence of Experience (Show)** |