# Bachelor of Education (Elementary) &

# Bachelor of Education (Secondary) STEM

# Lesson Plan

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| **Lesson Title:** | Math and Beading | **Lesson #** | 1 | **Date:** | **October 28, 2024** |
| Name: | Renai Johnny | Subject: | Mathematics | Grade(s): | 1 |

Rationale:

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| Students will engage in hands-on learning by using beads and string to practice addition and subtraction. They will manipulate the beads to visually represent numbers, allowing them to better understand the concepts of adding to and taking away from a total. This activity will help reinforce their mathematical skills through interactive play. |

Core Competencies:

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| Communication | Thinking | Personal & Social |
| Students engage in informal and structured conversations in which they listen, contribute, develop understanding and relationships, and learn to consider diverse perspectives. | They explore possibilities, develop and reflect on processes, monitor progress, and adjust procedures considering criteria and feedback. | Students identify and develop an appreciation for different perspectives on issues.  They generate, use, and evaluate strategies to resolve problems. |

Big Ideas (Understand)

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| Addition and subtraction with numbers to 10 can be modelled concretely, pictorially, and symbolically to develop computational fluency. |

Learning Standards

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| (**DO)** | (**KNOW)** |
| Learning Standards - Curricular Competencies | Learning Standards - Content |
| * Reasoning and Analyzing: -Model mathematics in contextualized experiences (using concrete materials) * Communicating and Representing: Represent Mathematical ideas in concrete forms. * Connecting and Reflecting: -Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts. | * Beadwork patterns are defined by attributes like shape, color, and material. They provide a way to explore mathematical structures, enhancing algebraic thinking, which is essential for mathematical reasoning by offering a framework to represent ideas and solve problems. * Students will engaged in conversations with peers and teacher while displaying their work through beading. |

Instructional Objectives & Assessment

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| Instructional Objectives (students will be able to…) | Assessment |
| * Count beads on the math counter (addition and subtraction to 10) * Collaborate with peers * Present their beadwork to a peer | * O: observe students counting beads correctly * O + C: listening and talking with students in their groupings * P: Beadwork math counter - share with teacher and a peer/group member |

Prerequisite Concepts and Skills:

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| Students will actively listen to instructions and successfully create a math counter using beads and string. |

Indigenous Connections/ First Peoples Principles of Learning:

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| **Learning involves patience and time.**  Beading is an art form that demands time and patience, but the result is always stunningly beautiful.  **Learning takes patience and time, yes. Also, Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).** Beading is hands-on work and part of cultural practice |

Universal Design for Learning (UDL):

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| Incorporating beading into mathematics offers an engaging and interactive learning experience for everyone. For younger children, we can start by using strings and colorful beads to teach basic addition and subtraction. Children can visually grasp these fundamental concepts. As children age, we can introduce more complex projects, such as crafting bracelets, belts, or necklaces using a loom and exploring mathematical concepts by working with patterns, colors, and designs. They can learn how to create repeated rows and columns, which introduces the idea of sequencing and helps them recognize patterns. |

Differentiate Instruction (DI):

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| When supporting a student who requires verbal assistance, choice boards can be an effective tool for facilitating mathematical games that involve beads. These boards provide structured options that guide the student in participating more actively and confidently in the learning process. |

Materials and Resources

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| * Pony beads (10 per person) * We Can Bead book (Math ology) – option Waltes (Math ology) * String * Samples of Indigenous beadwork * Game pieces for Waltes game (six 2 sided counters, bowl) and counters that the students make. * Go over the resource: <https://aboriginalresourcesforteachers.weebly.com/uploads/3/0/3/5/30354089/beading_lesson.pdf> |

Lesson Activities:

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| Teacher Activities | Student Activities | Time |
| Introduction (anticipatory set – “HOOK”): To engage the students effectively, read the "We Can Be" book from Mathology, specifically the optional Waltes section. After the reading, take some time to showcase a collection of indigenous beadworks. This visual display will serve as a springboard for a lively discussion about patterns in the designs and prompt questions about the number of beads required to create each intricate piece. By examining these beautiful artworks, students can explore mathematical concepts in a meaningful and culturally relevant context. | Students will listen activiley to the story and visually see examples of indigenous art being displayed. | 10 mins |
| Body: I will demonstrate on how to bead a counter using the beads and string. | Students will listen and watch the demonstration being done. | 10- 15 mins |
| Closure: I will instruct students to create their own counters using the beads and string while I actively walk around the room to observe students creating beaded counters. I will be observing students and helping where needed. I will demonstrate how to effectively use the counters and play the game when counters are complete. | Students will effectively create their own beaded counters and learn about adding while beading and paying a engaging game afterwards. | 15-20 mins |

Organizational Strategies:

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| I am confident in using the class management strategies established by my teacher mentor. If the class begins to get a little loud, I will effectively use a bell to regain their attention. I will enlist a couple of students to help distribute beads and strings to those seated and ready to create their counters. Additionally, I will ensure that students are seated next to peers who will minimize distractions. |

Proactive, Positive Classroom Learning Environment Strategies:

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| **-** Teacher will actively circulate around the classroom to engage with students and ensure they are able to participate effectively.  -Teacher will assist individual students, address any questions, and facilitate group discussions. By maintaining a close presence.  -Teacher aims to foster a supportive learning environment and encourage student participation.  -Teacher will verbally acknowledge and thank students who are on task  -Teacher will verbally address students that are not on task  -Teacher will use the TMs way of getting classes attention (ringing the bell)  -Teacher will set expectations before class to ensure less distractions |

Extensions:

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| Beads can serve as a versatile tool for children to engage in various creative projects using strings. By incorporating math concepts, they can learn to design and construct items such as bracelets, necklaces, and belts. This activity not only fosters creativity but also enhances their understanding of patterns, counting, and spatial relationships. |

Reflections (if necessary, continue on separate sheet):

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