UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA

LESSON PLAN

Candidate's name: Ocean-Lynn Georgelin

Grade/Class/Subject:	Kindergaten/Math	School:	Thornhill Primary
Date:	Monday March 11	Allotted Time:	35 min
Topic/Title:	Building graph fluency.		

1. LESSON ORIENTATION

Key resources: Instructional Design Map

Briefly, describe purpose of lesson, and anything else to note about the context of lesson, students, or class, e.g. emergent learning needs being met at this time, elements of focus or emphasis, special occasions or school events.
The objective of this lesson is for students to practice creating and reading graphs, connecting mathematical concepts to their everyday experiences. Students will be explicitly taught how to use words like "fewer" and "more" when interpreting graphs, aiming to deepen students' understanding of quantitative relationships. Additionally, the lesson will reinforce the use of previously taught words such as "column" and "row" ensuring that each student can confidently distinguish the two. Students will also learn to read graphs efficiently by utilizing the number column, enhancing their ability to extract meaningful information from visual data representations. As part of supporting cross-curricular connections, students will practice reading sight words while completing activities, solidifying their recognition of these words in various contexts. Students will also practice working collaboratively to achieve a common goal, strengthening their social awareness and responsibility. By the end of the lesson, students will begin to appreciate the practical relevance of math in their daily lives and develop essential skills for data literacy.

2. CORE COMPETENCIES

Key resources: https://curriculum.gov.bc.ca/competencies

Core /Sub-Core Competencies *(bold all that apply):*	*Describe briefly how you intend to embed Core Competencies in your lesson, or the role that they have in your lesson.*

COMMUNICATION – Communicating **COMMUNICATION – Collaborating** **THINKING – Creative Thinking** **THINKING – Critical Thinking** THINKING – Reflective Thinking **PERSONAL AND SOCIAL – Personal Awareness and Responsibility** **PERSONAL AND SOCIAL – Positive Personal and Cultural Identity** **PERSONAL AND SOCIAL – Social Awareness and Responsibility**	Communication: • Students will practice communicating with the group and with the teacher using mathematical language. • In familiar settings, students will engage in communication with peers and adults, fostering an environment where they respond meaningfully to communication from others (Profile 1). • Through purposeful communication, using practiced forms and strategies, students will develop their ability to express themselves effectively (Profile 3). Collaboration: • Students will practice collaboration skills by respectfully listening to their peers and offering assistance to those who may need help. They will also practice collaborating to complete a group project. • In familiar situations, students will participate with others and cooperate for specific purposes, fostering a sense of belonging and teamwork (Profile 2). Critical and Reflective Thinking: • Analyzing and interpreting graphs requires critical thinking skills. Students must identify patterns, make comparisons, and draw conclusions based on the data presented. By engaging in these activities, students develop their ability to think critically, solve problems, and make informed decisions. • Through the exploration of data on the graph and analysis of findings, students will make simple judgments based on evidence, asking questions and making predictions (Profile 2). • Students will gather evidence, combine it with existing knowledge, and develop reasoned conclusions or judgments, reflecting a deeper level of critical thinking (Profile 4). Personal and Social Responsibility: • The lesson encourages students to actively participate in group activities, share their ideas, and respect the contributions of others. Through these experiences, students develop their sense of personal and social responsibility, including their ability to work collaboratively, demonstrate empathy, and contribute positively to their classroom community. Social and Emotional Learning: Engaging in group activities and discussions provides students with opportunities to develop their social and emotional skills, such as communication, cooperation, empathy, and self-regulation. These skills are essential for building healthy relationships, managing emotions, and navigating social situations effectively. Positive Personal and Cultural Identity: • Students will become aware of themselves as individuals by recognizing qualities and attributes specific to them. (Profile 1). • They will also identify different aspects of themselves, contributing to a sense of self-awareness and personal identity (Profile 2). • Through discussions about favourite colours and personal preferences, students will have opportunities to describe various aspects of their identity, promoting self-expression and understanding (Profile 3).

3. INDIGENOUS WORLDVIEWS AND PERSPECTIVES

Key resources: First Peoples Principles of Learning (FPPL); Aboriginal Worldviews and Perspectives in the Classroom

FPPL to be included in this lesson *(bold all that apply):*	*How will you embed Indigenous worldviews, perspectives, or FPPL in the lesson?*
Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors. **Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).** Learning involves recognizing the consequences of one's actions. Learning involves generational roles and responsibilities. Learning recognizes the role of Indigenous knowledge. Learning is embedded in memory, history, and story. Learning involves patience and time. **Learning requires exploration of one's identity.** Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations.	• **Learning in Relationship:** The lesson encourages collaboration and group work, fostering a sense of community among students. By engaging in activities together, students learn from each other and build relationships, reflecting the principle of learning in relationship. • **Learning from Place:** The lesson incorporates real-life experiences and examples that are relevant to the students' lives, such as exploring the different types of pets in the area have and making connections to the animals they have or have interacted with. This connection to their immediate environment honours the principle of learning from place, recognizing the importance of local context in education. • **Experiential Learning**: Through hands-on activities like creating and interpreting graphs, students actively participate in their learning. This experiential approach allows them to engage with the material in meaningful ways, aligning with the principle of experiential learning. • **Respect for Self, Others, and the Environment:** By creating a supportive and inclusive learning environment where all students are encouraged to participate, the lesson promotes respect for self, others, and the environment. Students learn to value each other's perspectives and contributions, reflecting this principle of Indigenous education.

4. BIG IDEAS

Key resources: https://curriculum.gov.bc.ca/ (choose course under Curriculum, match lesson to one or more Big Ideas)

What are students expected to understand? How is this lesson connected to Big Idea/s or an essential question?

Patterns and Relationships: The lesson introduces the concept of creating and reading graphs, which involves identifying patterns and relationships in data. By representing real-life factors in graphs, students explore how quantities change in relation to one another, fostering an understanding of mathematical patterns and relationships.
Numbers and Operations: Through the use of graphs, students engage in counting, comparing quantities, and understanding basic data visualization techniques. They learn to interpret numerical information presented in the graphs, thus strengthening their foundational skills in numbers and operations. Students will count the number of items in each category represented on the graph and compare which category has more or fewer items.

5. LEARNING STANDARDS/INTENTIONS

Key resources: https://curriculum.gov.bc.ca/ (choose course under Curriculum)

Curricular Competencies: *What are students expected to do?*	**Content:** *What are students expected to learn?*
Reasoning and analyzing -Use reasoning to explore and make connections Model mathematics in contextualized experiences Understanding and solving. -Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving. **Communicating and representing** - Communicate mathematical thinking in many ways - Use mathematical vocabulary and language to contribute to mathematical discussions. - Represent mathematical ideas in concrete, pictorial, and symbolic forms. **Connecting and reflecting** - Reflect on mathematical thinking.	**Number concepts to 10** - One-to-one correspondence. - Linking sets to numerals. **Use concrete or pictorial graphs as a visual tool** - Create concrete and pictorial graphs to model the purpose of graphs and provide opportunities for mathematical discussions.

6. ASSESSMENT PLAN

Key resources: Instructional Design Map and https://curriculum.gov.bc.ca/classroom-assessment

*How will students demonstrate their learning or achieve the learning intentions? How will they know if they are proficient? How will the evidence be collected, documented and shared? Will you use **observations**, have targeted **conversations**, or collect **products**? Mention any opportunities for feedback, self-assessment, peer assessment and teacher assessment. What tools, structures, or rubrics will you use to assess student learning (e.g. Performance Standard Quick Scale)? Will the assessments be **formative**, **summative**, or both?*

Formative:

- Observations during question and answer sessions, focusing on students' engagement, participation, and understanding of concepts.
- Observations while students are completing worksheets, assessing their ability to follow instructions, read sight words, work as a group, and comprehend graphing concepts.

Summative:

- Conduct oral conferences upon completion of worksheets, assessing students' abilities to:
- Complete the graph accurately, comparing their graph to the groups.
- Discuss the graph using vocabulary such as "fewer," "more," "column," and "row."
- Read the graph efficiently using the number-line column, demonstrating understanding without counting each square.

7. DESIGN CONSIDERATIONS

Key resources: Instructional Design Map

Make brief notes to indicate how the lesson will meet needs of your students for: differentiation, especially for known exceptionalities, learning differences or barriers, and language abilities; inclusion of diverse needs, interests, cultural safety and relevance; higher order thinking; motivations and specific adaptations or modifications for identified students or behavioural challenges. Mention any other design notes of importance, e.g. cross-curricular connections, organization or management strategies you plan to use, extensions for students that need or want a challenge.

This lesson supports English Language Arts cross curricular connections by touching on the following Curricular Competencies and Content:
Comprehend and connect (reading, listening, viewing)
- Use sources of information and prior knowledge to make meaning.
- Use developmentally appropriate reading, listening, and viewing strategies to make meaning.
- Engage actively as listeners, viewers, and readers, as appropriate, to develop understanding of self, identity, and community.
- Explore foundational concepts of print, oral, and visual texts
- Use reading strategies and processes to recognize familiar words.

The lesson also includes cross curricular connections to Applied Design, Skills, and Technologies by touching on the following Curricular Competencies:
- Sharing: reflect on their ability to work effectively, both as individuals and collaboratively in a group.
- Develop their skills and add new ones through play and collaborative work

The lesson touches on the following big idea and content from Social Studies:
- Our communities are diverse and made of individuals who have a lot in common
- Ways in which individuals and families differ and are the same, e.g. pets.

Students will be able to practice four of their sight words, these words will contain all lowercase letters as this is the way students are most familiar with the words, consistent with the principals of the Universal Design for Learning by eliminating unnecessary hurdles in the learning process.
Demonstrating the activity and then practicing as a group allows all students to be clear of expectations before proceeding, allowing students at varying levels will be able to practice successfully engaging with the activity and providing a clear example of what is expected of them.
Students will be instructed to “x” out each box rather than colour them in as in my last lesson I noticed that some students struggled to colour in a timely matter and I want every student to be able to keep up with the group.
I aim to include the special needs student in this class by asking them a fewer/more question during group time. Since they do not like to speak I will invite them up to point to the one that has fewer/more, if needed I will use the words “bigger” and “smaller”. They will also be included in a small group and take turns rolling the die and saying what number it is. I am unsure if they will be able to complete the worksheet but they will be given one and I will ask their EA to try their best with them.

Required preparation: *Mention briefly the resources, material, or technology you need to have ready, or special tasks to do before the lesson starts, e.g. rearrange desks, book a room or equipment.*
Graph displayed on Smart TV Individual worksheets for each student Camera connected to TV for demonstrations Writing utensils and colouring materials for completing worksheets Five four-sided dice.

8. LESSON OUTLINE

Instructional Steps	**Student Does/Teacher Does** *(learning activities to target learning intentions)*	**Pacing**
OPENING: *e.g. greeting students, sharing intentions, look back at what was learned, look ahead to what will be learning, use of a hook, motivator, or other introduction to engage students and activate thinking and prior knowledge*	• Transition: GoNoodle videos: "Indoor Recess" and "Snake Breath." Ask for the secret signal before we start in the group spot. • Display a completed graph to the class and ask if they know what it is. • Ask the students if they know what the purpose of a graph is. Allow for 2-4 incorrect guesses, and then reveal or elaborate on the answer: "Graphs are like pictures that help us keep track of and understand information." • Ask students if they know what kind of information the displayed graph is showing us (The kinds of pets Ms. Georgelin's friends have).	5min
BODY: • *Best order of activities to maximize learning -- each task moves students towards learning intentions* • *Students are interacting with new ideas, actively constructing knowledge and understanding, and given opportunities to practice, apply, or share learning, ask questions and get feedback* • *Teacher uses learning resources and strategic opportunities for guided practice, direct instruction, and/or modelling* • *Can include: transitions, sample questions, student choices, assessment notes (formative or otherwise), and other applications of design considerations*	• Explain all the parts of the graph and how they work, pausing at the words "column" and "row" to check understanding. • Explain that just by looking at the graph, I know that more of my friends have dogs and fewer have goldfish, pausing to define each term to ensure that all students have a firm grasp of the meaning of each word. • Ask 3-4 more/fewer questions. • Demonstrate counting each box, exaggerating the effort as there are many of them. Ask if there is an easier/faster way I could read the graph. If applicable a student may come up to demonstrate using the number column. • Demonstrate reading the graph using the column, mentioning how easy it is. Connect the concept to the efficiency of "skip counting". Get the students to use their fingers to trace the action in the air while reading with me 3-4 times. • Ask 3-4 students to come up and read the graph using the column. • If time allows and it feels appropriate, contrast the graph with the original jumbled notes containing the same information to show how effective graphs are at showing information.	15 min

CLOSING: • *Closure tasks or plans to gather, solidify, deepen or reflect on the learning* • *review or summary if applicable* • *anticipate what's next in learning* • *"housekeeping" items (e.g. due dates, next day requirements*	• Transition: Ask for the secret signal and remind students that when they get their paper, step one is to write their name, and step two is the secret signal. • Release students by row and hand out worksheets. • Once students are ready at their desks, explain the worksheet. • Demonstrate 3 rolls and put an "x" in the corresponding squares. Grab a new sheet and complete 4 rolls as a group. • Divide class into 5 equal small groups. (Most students will stay in their cluster, but some students will move to create a fifth group so that the groups are 4 students or fewer). • Once students are settled (use the breathing chime to ground students if needed), reveal that there is a 4-sided die for every table and explain the activity. • Each student will take turns rolling the die, going in a circle. They will read the die, and then every student will mark the corresponding box with the correct color. Once one of the columns is full, they can raise their hand, and I will come to assess them. • Ask the table to point to a column that has fewer than 5, then more than 8. Challenge them to think if they are more likely to roll a 2 or a 4 (use numbers that have the greatest difference in rolls). • Then individually conference with each student, checking if they can read the graph using the number column, and answer fewer/more questions using the learned vocabulary. Through this assessment process, the teacher will evaluate whether students are meeting the learning goals and provide feedback accordingly. Students who demonstrate understanding will receive a stamp before being released to	10min

9. **REFLECTION** *(anticipate if possible)*

- *Did any reflection <u>in</u> learning occur, e.g. that shifted the lesson in progress?*
- *What went well in the lesson (reflection <u>on</u> learning)?*
- *What would you revise if you taught the lesson again?*
- *How do the lesson and learners inform you about necessary next steps?*
- *Comment on any ways you modelled and acted within the Professional Standards of BC Educators and BCTF Code of Ethics?*
- *If this lesson is being observed, do you have a specific observation focus in mind?*

- While going over this lesson plan the day before delivering it, I decided to make some changes. I took out the sight-words on the worksheet because I thought that switching between colours would be an unnecessary step that would distract from the learning goals for this lesson. I also changed the content of my example graph from "the kinds of pets my friends have" to "the pets on Amanda's farm" because asking questions about the former sounded convoluted and used more words than necessary. For example, "Do fewer or more of Ms. Georgelin's friends have cats compared to dogs?" vs. "Does Amanda have fewer or more cats than dogs?" Finally, I also altered the order of delivery in the lesson, choosing to talk about visiting my friend's farm as a hook, then showing my messy notes, commenting on how confusing they are, before presenting my graph and asking the opening questions and connecting it to the rainbow graph we did the week before. I also moved the fewer/more portion of the lesson to the end of the body because I felt it would flow nicer. Overall, I think these changes made for a better lesson, and I'm glad I took the time to practice the lesson at home and make revisions.
- While reviewing this lesson, I wondered if there would be a surplus of students finishing at the same time, waiting to be assessed. Looking back, I wish I would have asked my CT what she thought because this did happen at the end, and I wasn't really sure how to deal with it. I didn't want to rush my individual assessments because I wanted to know if the students were meeting the learning goals, so I just carried on and ended up running out of time. Some students didn't get a chance to go to centers and had waited patiently for what felt like a long time but was probably less than 5 minutes - a long time when you are in kindergarten watching your friends play. I told them not to worry, and we cleaned up and got ready for recess. I then finished my assessments during centers in the afternoon. When asking my CT about this later, she suggested that I only do my whole group assessments during the lesson time and then pull students from centers to complete the individual assessments. This would have helped a lot with timing and ensured that I didn't have so many students sitting and waiting for an extended amount of time.
- Another concern I had was about how large the graphs were. I debated making them smaller, but I wanted students to practice with the high numbers. In my pre-conference, my CT and I didn't really come up with a solution for this, but in my post-conference, she suggested a couple of options to tweak this portion of the lesson, and we decided that completing more of the graph as a group would have been the best option.
- The day of this lesson, I was not feeling well and had a poor sleep the night before. For me, this was a learning moment on the realities of being a teacher. I thought about asking to move my lesson to the next day but realized that I would have to do another lesson I had not planned, and that if I were the teacher and I had to take a sick day, I would have to write a full day of lesson plans for a sub and likely have to reteach those lessons when I came back, losing an instructional day. During my time in this practicum, I have seen two different subs and the difference it makes for this age. One of the subs struggled to maintain basic classroom management, and I ended up taking over for her beyond my instructional time. Anyways, I carried on and initially thought my lesson went poorly, and I was disappointed that I ran out of time as I have been focused on time management in my other lessons and was starting to feel more confident in this area. However, on reflection, almost all of the students confidently met the learning goals at the end of the lesson, and I feel like there was good engagement throughout, so I think the lesson was successful. I have things to work on, and while it's easy to say I would have done better if I was feeling well, the realities of being a teacher are that some days you just do not feel well, and delivering effective lessons is crucial.
- When planning this lesson, I was curious about how well the students would work together on a collaborative project and if there would be any behaviour issues during this time. I put the two students I felt needed the most support in keeping up/participating in a group project in the same group and assigned them an EA. I modelled how to work in a group and reminded the students throughout that their graphs should all be the same in their group, encouraging students to help each other. I think this went well, and I was very impressed with the students' collaborative work skills!