

Candidate's name: Ocean-Lynn Georgelin

Grade/Class/Subject:	Kindergaten/Math	School:	Thornhill Primary
Date:	Monday March 4	Allotted Time:	35 min
Topic/Title:	Introduction to graphing		

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 purpose of this lesson is to introduce kindergarten students to the concept of creating and reading graphs, aiming to foster an understanding of how mathematical concepts relate to their everyday lives. By using graphs to represent relevant factors in their lives, students will explore real-world applications of math. The lesson will emphasize the use of words like “fewer” and “more”, when interpreting graphs, helping students develop a deeper understanding of quantitative relationships. This lesson will also act as practice time for the use of the words “column” and “row” that have been taught in previous lessons. Additionally, students will learn to read graphs efficiently by utilizing the number column, enhancing their ability to extract meaningful information from visual representations of data. Supporting cross-curricular connections students will have a chance to independently read sight-words while completing activities cementing their ability to recognize these words in different contexts. Through this lesson, students will begin to see the practical relevance of math in their daily experiences and build 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.

<p>COMMUNICATION – Communicating</p> <p>COMMUNICATION – Collaborating</p> <p>THINKING – Creative Thinking</p> <p>THINKING – Critical Thinking</p> <p>THINKING – Reflective Thinking</p> <p>PERSONAL AND SOCIAL – Personal Awareness and Responsibility</p> <p>PERSONAL AND SOCIAL – Positive Personal and Cultural Identity</p> <p>PERSONAL AND SOCIAL – Social Awareness and Responsibility</p>	<p>Communication:</p> <ul style="list-style-type: none"> • 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). <p>Collaboration:</p> <ul style="list-style-type: none"> • Students will practice collaboration skills by respectfully listening to their peers and offering assistance to those who may need help. • In familiar situations, students will participate with others and cooperate for specific purposes, fostering a sense of belonging and teamwork (Profile 2). <p>Critical and Reflective Thinking:</p> <ul style="list-style-type: none"> • Students will engage in critical and reflective thinking processes, aligning with the BC curriculum's Critical and Reflective Thinking competency. • 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). <p>Positive Personal and Cultural Identity:</p> <ul style="list-style-type: none"> • 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).
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3. INDIGENOUS WORLDVIEWS AND PERSPECTIVES

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

<p>FPPL to be included in this lesson (bold all that apply):</p>	<p><i>How will you embed Indigenous worldviews, perspectives, or FPPL in the lesson?</i></p>
<p>Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.</p> <p>Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).</p> <p>Learning involves recognizing the consequences of one's actions.</p> <p>Learning involves generational roles and responsibilities.</p> <p>Learning recognizes the role of Indigenous knowledge.</p> <p>Learning is embedded in memory, history, and story.</p> <p>Learning involves patience and time.</p> <p>Learning requires exploration of one's identity.</p> <p>Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations.</p>	<p>This lesson incorporates elements of the local environment by discussing weather patterns and representing them in a graph, thereby fostering connections to the principle of Learning from Place. By actively participating in the graphing activity and analyzing data, students engage in hands-on, experiential learning, which is consistent with the principle of Experiential Learning. This lesson encourages holistic learning by integrating various aspects of students' identities, such as their favourite colours and personal preferences, into the discussion and analysis of the graph. The collaborative aspects of the lesson, such as working together to create the graph and sharing observations, promote community engagement, which is in line with the principle of Community Engagement and Connecting Learning.</p>

4. BIG IDEAS

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

<p><i>What are students expected to understand? How is this lesson connected to Big Idea/s or an essential question?</i></p>
<p>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.</p> <p>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.</p> <p>Contexts for Learning: By connecting graphing activities to relevant factors in their lives, such as favourite colours or preferences, students engage in meaningful contexts for learning mathematics. They see how math concepts apply to real-world situations, promoting deeper understanding and relevance.</p>

5. LEARNING STANDARDS/INTENTIONS

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

<p>Curricular Competencies: <i>What are students expected to do?</i></p>	<p>Content: <i>What are students expected to learn?</i></p>
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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, and comprehend graphing concepts.

Summative:

- Conduct oral conferences upon completion of worksheets, assessing students' abilities to:
- Complete the graph accurately.
- 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.

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 constant with the principals of the Universal Design for Learning by eliminating unnecessary hurdles in the learning process. By completing one set with the class students at varying levels will be able to practice successfully completing 1 out of the 4 sets, providing a clear example of what is expected of 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.*

Interactive graph displayed on Smart TV

Individual worksheets for each student

Camera connected to TV for demonstrations

Writing utensils and colouring materials for completing worksheets

8. LESSON OUTLINE

Instructional Steps	Student Does/Teacher Does (<i>learning activities to target learning intentions</i>)	Pacing
<p>OPENING: <i>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</i></p>	<ul style="list-style-type: none"> - Transition: Gonoodle videos: Chilli Chilli, and Rainbow Breath. Ask for secrete signal before we start in group spot. - Review 7 colours of the rainbow from last math lesson. - Introduce topic: Finding out what everyones’s favourite rainbow colours are and how to use a graph. 	<p>5min</p>

<p>BODY:</p> <ul style="list-style-type: none"> • <i>Best order of activities to maximize learning -- each task moves students towards learning intentions</i> • <i>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</i> • <i>Teacher uses learning resources and strategic opportunities for guided practice, direct instruction, and/or modelling</i> • <i>Can include: transitions, sample questions, student choices, assessment notes (formative or otherwise), and other applications of design considerations</i> 	<ul style="list-style-type: none"> - On the Smart T.V. there is a graph displaying all the colours of the rainbow. Explain to the students that what they are looking at is called a graph and that together we are going to figure out how it works. - Tell students to think of their favourite rainbow colour and hold it in their head. - Teacher demonstrates adding their favourite colour to the graph then calls on students to share their favourite colour and teacher adds it to the graph. - Once the graph is completed analyze the data using the words “more” and “fewer”. - Call on two students to share their observations using the words “more” or “fewer”. - Demonstrate how to read the graph using number column rather than counting each square. - Call on two students to read a section of the graph. (Walk them through it). - Ask if the graph reminds students of anything in from their morning meeting. - Connect graph to February weather graph from morning meeting. - Call on two students to make observations from weather graph using the words “more” or “fewer”. - If time allows practice reading weather graph utilizing number column. 	15 min
<p>CLOSING:</p> <ul style="list-style-type: none"> • <i>Closure tasks or plans to gather, solidify, deepen or reflect on the learning</i> • <i>review or summary if applicable</i> • <i>anticipate what’s next in learning</i> • <i>“housekeeping” items (e.g. due dates, next day requirements)</i> 	<ul style="list-style-type: none"> - Transition: Ask for secrete signal and remind students that when they get their paper step one is to write their name, and step two is secrete signal. - Release students by colour of table and handout worksheets. - Once students are ready at their desks, explain the worksheet. They will count the number of symbols in one set (e.g., number of triangles), read the color for the symbol, and color one square per symbol in the corresponding color and column. - Demonstrate completing the first set using TV monitor. - Instruct students to raise their hand when they are done. - The teacher will conference with each student as they finish, prompting them to discuss the graph using the words "fewer" and "more," and encouraging them to read the graph without counting each individual square. The teacher will also assess whether students can distinguish rows from columns. Furthermore, the teacher will observe if students are connecting sight words to the colours they used when completing the graph. 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 centers. 	10min

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

- *Did any reflection in learning occur, e.g. that shifted the lesson in progress?*
- *What went well in the lesson (reflection on 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?*

- Part of my lesson plan deviated from the regular classroom routine. I made this choice to allow for more time on other activities. However, during the lesson, students naturally stuck to the routine. Instead of confusing them, I decided to follow the routine and allow students to add their own color to the graph. To adapt, I spent less time on the question and answer portion of the lesson.
- During the assessment time, however, I noticed some confusion on how to use the number column. I took this moment to reteach students but reflected that it would have been beneficial to spend more time practicing this as a group. During the lesson, students were engaged, and all of the students were able to complete the worksheet. Most students were able to identify and correct their mistakes during our conference assessment.
- During the transition, one of the students asked to do the breathing exercise again because she did not feel calm. I was focused on the time and felt that the other students and herself were fine to begin. Upon reflection, I should have taken that opportunity to do another calming activity as part of the transition.
- One thing I did not anticipate was that students would be able to easily see how many items were in each column without counting or using the number line as the largest column was five. In the next lesson, I will use larger numbers so that students are challenged to use the number column to efficiently know how many items are in a column.
- The fourth item in the BCTF states that “the member is willing to review with colleagues, students, and their parents/guardians the practices employed in discharging the member’s professional duties.” I reviewed with my coaching teacher before the lesson to discuss what I planned to do and afterwards to discuss what I did and how I could improve. In this way, I adhered to the BCTF.
- The fifth item in the Professional Standards of BC Educators is that “educators implement effective planning, instruction, assessment, and reporting practices to create respectful, inclusive environments for student learning and development.” I modelled this standard by creating a detailed lesson plan and then reviewing it with my coaching teacher with specific questions about areas I was unsure of. The lesson plan included vocabulary and concepts from other classes, recognizing the interconnectedness of learning.
- The class was full of energy on the day of this lesson, and there were many behaviour issues, more so than I had witnessed to that point. I think I had accepted that it was an off day and carried on without high expectations when instead I should have added in some more grounding activities to make sure the class was ready to learn and follow along. Overall, I think this lesson was successful. My main takeaways are to pay closer attention to the needs of the class rather than keeping to a strict schedule. I also need to remember to include one of the special needs students during the lesson. This student does not have an IEP, and I assumed that their EA would take charge of their participation with the lesson. However, in my post-conference, I learned that it is my job to include them at appropriate times and to manage the EA on how to support them.