

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM Lesson Plan

Lesson Title: Probability – Likely, Unlikely, Certain, and Impossible Lesson # 1 Date: 02/16/2024
 Name: Tatum Cassidy Subject: Mathematics Grade(s): Kindergarten

Rationale:

This lesson is important because understanding probability is a fundamental skill used in everyday life and helps us make informed choices.

Core Competencies:

Communication	Thinking	Personal & Social
	Critical Thinking and Reflective Thinking Facet 2: Questioning and investigating Profile 2: I can use evidence to make simple judgments.	

Big Ideas (Understand)

BI #5: Familiar events can be described as likely or unlikely and compared.

Learning Standards

(DO)	(KNOW)
Learning Standards - Curricular Competencies	Learning Standards - Content
CC #1.2: Estimate reasonably	C #10: likelihood of familiar life events

Instructional Objectives & Assessment

Instructional Objectives (students will be able to...)	Assessment
After a lesson on probability and the terms likely, unlikely, certain, and impossible... 1. SWBAT predict the likelihood of which coloured ball will be pulled from the paper bag. 2. SWBAT write a sentence of something that is likely, unlikely, certain, or impossible to happen at school.	Observation of students during the group activity as they predict the likelihood of which coloured ball will be pulled from the paper bag. Product: Sentence and drawing of something that is likely/unlikely/certain/impossible to happen at school.

3. SWBAT **explain** and reconsider their estimations in one-on-one conversations with the teacher during independent work time.

Conversation with students during independent work time.

Prerequisite Concepts and Skills:

Students will need to be able to sit quietly and listen to the teacher, their peers, and the video, without disrupting their classmates. Students need to have a basic understanding of writing/phonics and sounding out words for the individual work activity.

Indigenous Connections/ First Peoples Principles of Learning:

Learning involves patience and time.

This lesson is the first in a unit on probability. I chose this FPPL because students will need to be patient with themselves as they learn a new mathematical concept. It will take time for them to become familiar with the concept of probability and they should not expect to completely master the concept during the first lesson.

Universal Design for Learning (UDL):

This lesson uses triangulated assessment, allowing the teacher to collect assessment information in various ways. This creates a fuller picture of students' learning.

Differentiate Instruction (DI):

The teacher will adapt the lesson to fit the needs of all students' learning abilities.

Some examples include:

- The teacher can weigh student assessment more heavily in different areas (group discussion, product, one-on-one conversation) depending on the learning abilities of the student.
- If a student struggles with writing, the student can label their drawing or dictate their sentence to the teacher/CEA.

Materials and Resources

- Smartboard
- Document camera
- WACKY NUMBER SONGS - What Are the Chances? (Probability) ([YouTube link](#))
- Shake Break | Brain Breaks | Jack Hartmann ([YouTube link](#))
- Paper bag
- Coloured plastic balls
- "Today at School" worksheet

- Pencils
- Colouring materials

Lesson Activities:

Teacher Activities	Student Activities (Students will...)	Time
<p><i>Beginning:</i></p> <p>The teacher invites students to sit on the carpet.</p>	Students sit on the carpet.	1 min
<p><u>Hook:</u> The teacher explains that we will be learning about probability. The teacher asks: "Have you ever wondered if something is likely to happen or not? For example, do you think it's likely for it to snow today? It snowed yesterday, so do you think it's likely that it will snow today? Raise your hand if you think it is likely for it to snow."</p> <p>The teacher explains that probability is how likely or unlikely something is to happen.</p>	Students sit quietly, raising their hands to answer the question.	5 mins
<p>The teacher plays "What Are the Chances? (Probability)" video on the smartboard.</p>	Students sit quietly and watch the video.	2 mins
<p>The teacher goes over vocabulary from the video: certain, likely, unlikely, and impossible.</p> <p><u>CFU:</u> Who can tell me what the word likely means? How about the word unlikely?</p>	Students sit quietly, raising their hands to answer CFU.	2 mins
<p><i>Middle:</i></p> <p>The teacher shows the students a paper bag, ten red balls, and one blue ball. The teacher tells the class that she is going to put all of the balls in the bag to test our probability knowledge. The teacher says, "It is certain that</p>	Students sit quietly, raising their hands to answer the questions.	10 mins

<p>we will pull a ball out of the bag. Do we think it is possible to pull a puppy out of the bag?"</p> <p>"Since there are only balls in the bag, it is impossible to pull a puppy out of the bag!"</p> <p>"Remember, there are ten red balls in the bag, and one blue ball. If I reach my hand into the bag and pull out a ball, what colour do you think I will pull out? Raise your hand if you have a guess."</p> <p>"Alright, let's find out." The teacher reaches into the bag and pulls out a ball.</p> <p><u>If a red ball:</u> "It was likely for us to pull out a red ball since there are more red balls than blue balls."</p> <p><u>If a blue ball:</u> "It was unlikely for us to pull out the blue ball since there were more red balls than blue balls, but unlikely does not mean impossible!"</p> <p>"Let's try again and see what we get! Can I have a volunteer to pull a ball out of the bag?"</p> <p>This repeats for a few pulls, with the teacher asking students to guess what colour will be pulled and discussing the outcome using the terms likely and unlikely.</p>		
<p><u>Brain break:</u> Shake Break by Jack Hartman (video)</p>	<p>Students stand and participate in the brain break.</p>	<p>2 mins</p>
<p>The teacher asks students to sit on the carpet. The teacher explains to students that she has placed a worksheet on their tables. The teacher</p>	<p>Students are listening, raising their hands to ask/answer questions.</p>	<p>5 mins</p>

<p>shows a completed worksheet on the document camera.</p> <p>The teacher explains that students will write a sentence that shows their learning for this lesson. The teacher reviews vocabulary (likely, unlikely, certain, and impossible). Students will answer the sentence prompt "Today at school, it is _____ (likely, unlikely, certain, or impossible) that _____."</p> <p>The teacher asks that after students write their sentence, they will draw a picture to show their idea.</p> <p>The teacher's sentence is: "Today at school, it is unlikely that a bear will visit our class."</p> <p>The teacher asks if there are any questions.</p> <p><u>CFU</u>: You are going to go back to your table, write a sentence using our new words, and then draw a picture. Once you are all finished, you can colour your picture.</p> <p>The teacher will call on individual students to answer: "What is the first thing you're going to do?" "What is the second thing you're going to do?"</p> <p>The teacher shows students where the words likely, unlikely, certain, and impossible are written on the board to help students with spelling.</p> <p>The teacher asks students to return to their tables to complete the worksheet. While students work, the teacher will circulate and have conversations with students to gain understanding of their learning. The teacher will ask questions to try to further the learning</p>	<p>Students return to their tables and complete the worksheet.</p>	<p>15 mins</p>
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of students. Students will "submit" their worksheets in the designated bin.		
<p><i>End:</i></p> <p>"Today we learned the words certain, impossible, likely, and unlikely. Who can remind me what the word likely means?"</p> <p>"What about unlikely?"</p> <p>We are going to continue working on probability in math tomorrow, but thank you for all of your hard work today!"</p>	Students are sitting and listening.	2 mins

Organizational Strategies:

Before the lesson:

- The teacher will write the words certain, impossible, likely, and unlikely on the white board to help with students' spelling.
- The teacher will place worksheets on students' tables before the lesson.

During the lesson:

- Students participate in a brain break during the lesson to release some energy.
- Depending on the moods and attention-levels of the class, the teacher can add more/fewer brain breaks.
- The teacher will make sure students understand instructions and expectations before proceeding with each part of the lesson.

Proactive, Positive Classroom Learning Environment Strategies:

- The teacher will move around the classroom while students work independently.
- Attention grabber: "Waterfall"
- The teacher will verbally acknowledge students who are on task and provide reminders to students who are not on task.
- The teacher will remind students of behaviour expectations at the beginning of the lesson and throughout the lesson as needed.

Extensions:

To make this lesson more challenging, I could add a third coloured ball to the bowl. If I knew ahead of time that some students would find the worksheet easy, I would create a second worksheet that they would find more challenging.

Reflections:

- This was one of the more challenging lesson plans I have created so far, perhaps because I struggle with math. Creating this lesson has helped me to feel more confident about teaching mathematics in our second practicum.
- I started the creation of this lesson by looking through the BC curriculum website. I chose probability as the focus of my lesson because I have always enjoyed statistics, and did not realize that this could be introduced to students at such a young age.
- In the end, this was a very fun lesson to create. I had a general idea of what I wanted to do, but struggled to narrow my lesson down to one lesson since I had so many ideas! I chose the paper bag activity because I thought it would be an engaging group-activity for young students to get them excited about the topic.
- I imagined this lesson being the first lesson in a unit, so I wanted to introduce probability vocabulary to students with the intention of continuing in future lessons.