

1. Lesson Plan Information

Subject/Course: Mathematics

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Grade Level: Grade 6

Date: December 11, 2015 **Time:** 9:30

Topic: Probability

Length of Period: 40 Minutes

2. Expectation(s)

Expectation(s) (Directly from The Ontario Curriculum):

- Predict the frequency of an outcome of a simple probability experiment or game, by calculating and using the theoretical probability of that outcome.

Learning Skills (Where applicable):

| | | | |
|------------------|--|-----------------|---|
| Responsibility | | Organization | |
| Independent Work | | Collaboration | √ |
| Initiative | | Self-Regulation | √ |

3. Content

What do I want the learners to know and/or be able to do?

Eventually the students will perform their own probability experiment, collect and analyze the data and compare it to the theoretical probability of the outcome. Today they will begin to understand making frequency guesses.

Today learners will:

Begin to understand how to make a guess at the frequency of an outcome

4. Assessment (collect data) / Evaluation (interpret data)

(Recording Devices (where applicable): anecdotal record, checklist, rating scale, rubric)

Based on the application, how will I know students have learned what I intended?

Assessment:

- Observe the students beginning to understand how to make a guess at the frequency of an outcome by completing the experiment and discussing the results with their partner.
- Collect the charts at the end of the lesson to read over after the class.

Record:

- Record anecdotal notes commenting on the reasoning of the student's guesses based on their data and explanation while looking through the charts after the class.

Assessment of Learning Skills:

- Record observations of the students to keep in their anecdotal records including how well the students understood the task and whether or not they worked well with their partner (Collaboration) and were on task (Self-Regulation).

5. Learning Context

A. The Learners

(i) What prior experiences, knowledge and skills do the learners bring with them to this learning experience?

- Students have been taught what fractions are and how to use them
- Students are familiar with tally charts and dice

(ii) How will I differentiate the instruction (content, process and/or product) to ensure the inclusion of all learners? (Must include where applicable accommodations and/or modifications for learners identified as exceptional.)

LM has an IEP that requires him to work with someone who will keep him on task. TR excels well in math and collaborative work. LM and TR will be partnered together. Assess LM on how well he tries to focus on the task and tries to assist TR (learning skill accommodation).

B. Learning Environment

The room is B121. The classroom will be arranged normally (see classroom diagram in Day Book). The students will arrange their chairs to be with their partners for the application part of the lesson. The Classroom is equipped with a Smartboard that will be used during the lesson. All other resources will already be in the classroom (see resource binder).

Adjustment to the Learning Environment (before class):

- Turn on the computer and Smartboard and open up Notebook and write the Bell Work (see introduction section of the lesson) on the board
- Make sure the desks are cleared off
- Make sure all resources listed below are set out at the front of the classroom and that the text is open to the appropriate page (p. 42).

C. Resources/Materials

I need to bring:

- 15 die (15 groups of 2)
- Math Is textbook (for teacher – see teacher's desk)
- Lesson plan
- 15 Pencils (for students)
- Clipboard and pencil (for teacher)
- 15 Talley charts (see binder)
- Monitor list (Teacher binder)

Name: _____ your guess is _____

Name: _____ your guess is _____

| Outcomes | Frequency | Total |
|----------|-----------|-------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |

If you were to do this experiment again, explain how you would decide on a number for your guess.

6. Teaching/Learning Strategies

INTRODUCTION

5 Minutes

How will I engage the learners? (e.g., motivational strategy, hook, activation of learners' prior knowledge, activities, procedures, compelling problem)

Have the students complete the Bell Work.

Bell Work: Take out a piece of paper and think about the following question. How many shots will I have to take if I sink 1 out of 3 shots and I want to sink 6 in total?

Take up the Bell Work with the students.

Draw the solution on the board using pictures and also math equations.

MIDDLE:**10 Minutes****Teaching:** *How does the lesson develop?***How we teach new concepts, processes (e.g., gradual release of responsibility - modeled, shared, and guided instruction).**

1. Ask the students what they think the term frequency means (see definition on p. 42 in textbook). On the Smartboard, discuss and determine a definition.
2. Repeat this process with the term outcome. (See definition on p. 42 in textbook)
3. Transition into activity by asking for 2 volunteers. If no student's volunteer, choose MR and CH (confident math students).
4. Have them both guess how many times heads will be flipped if the coin is flipped 6 times (record their guesses on the board).
5. Assign MR to be the coin flipper and CH to record the data on the board.
6. Have the data recorder create a tally chart on the board with outcome and frequency as the column titles.
7. Have them flip the coin 6 times and record the data,
8. Determine the sum of the frequency of heads and tails in the experiment
9. Compare the results to the initial guesses.
10. Ask if any questions on what was demonstrated.
11. Thank demonstrators.

Consolidation and/or Recapitulation Process:**1 Minute*****How will I bring all the important ideas from the learning experiences together for/with the students? How will I check for understanding?***

Ask the students: Based on the results of the experiment, what would your guess be for the frequency of heads if we were to do the experiment again? Why?

Application:**20 Minutes*****What will learners do to demonstrate their learning? (Moving from guided, scaffolded practice, and gradual release of responsibility.)***

Goal (refined expectation): Students will begin to understand how to make an guess at the frequency of an outcome

Application Task:

- 1) Once dismissed, students will sit with their math partners.
- 2) Ask the students who are assigned as the distributors (see monitor list in the binder) to hand out the tally charts and dice.
- 3) Assign one person to be the data collector and the other to roll to die.
- 4) Each student will guess how many times the number 4 will be rolled (the frequency) when their group rolls the die 24 times. Then they record their guesses.
- 5) The students then perform the experiment.
- 6) Once they have finished the task, have them determine how many times they rolled each number (ie., The number 1 was rolled 6 times).
- 7) After they have finished rolling their die, they will then talk about what the results were and compare them to their guesses. They can also take this time to explain to their partner why they guessed the frequency that they did.
- 8) Finally, at the bottom of their worksheet, the students will explain how they would decide on a number for their guess if they were to repeat the experiment.
- 9) Once dismissed to begin the task, write the steps briefly on the Smartboard so the students can make reference to them.
- 10) Circulate to answer any questions or assist where needed.

CONCLUSION: *How will I conclude the lesson?***5 Minutes**

- Raise your hand to get the attention of the whole class
- Ask a student from each group to share with the class if their results were similar to their guess
- Have a few students share the reason for their guesses
- Have the student collectors collect all of the pages and the dice. The rest of the students can return any other supplies to their correct places.

7. My Reflections on the Lesson

What do I need to do to become more effective as a teacher in supporting student learning?