Lesson Plan Template

1. Lesson Plan Information

Subject/Course: Mathematics	**Name:** Areej Siddiqui, Kelly Hebert, Maria Waqar, Shandel Valiquette
Grade Level: 4	**Date:** 25/09/2015 **Time:** 1:00pm
Topic: Probability	**Length of Period:** 45 minutes

2. Expectation(s)

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

A. Students will predict the frequency of an outcome in a simple probability experiment, explaining their reasoning; conduct the experiment; and compare the result with the prediction.

(The Ontario Curriculum Grades 1-8: Mathematics, 2005 Revised, pg 74)

Learning Skills *(Where applicable):*
Applicable Learning Skills are those that will help the students to develop as a learner and a student in a classroom community. These skills include co-operation, positive participation, independent work, co-operation in sharing the resources, demonstrating good task management, and respect of others and the learning environment.

Responsibility	✓	Organisation	
Independent Work		Collaboration	✓
Initiative	✓	Self-Regulation	

3. Content

What do I want the learners to know and/or be able to do?
- Students need to eventually begin to develop their understanding of probability, fractions, and reasoning. Students should be able to utilize the spinners to begin to comprehend the division of a whole into parts. Students will need to learn to conduct probability experiments one of which is using spinners in order to move onto the next unit, which is Data Relationships. This hands-on activity is the most effective method of teaching the concept of probability along with being a fun and interactive lesson.

Today learners will:
- Begin to explain the reasoning of their predications as they conduct experiments using various spinners.

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 of expectation
During the Application, observe students by circulating and interacting with the tables and examining the results of the worksheet to assess the students' ability to explain and reason the prediction of their spinner experiments. Teacher will circulate the classroom and ask students to explain the reasoning for their answers on the worksheet. Teacher can also ask additional questions that are similar to the questions on the worksheet to ensure their understand and ability to explain reasoning. Using a checklist with students' names, write down abbreviations to assess their ability to explain the reasoning for their answers.

Abbreviations: E = Excellent explanation, G = Good explanation, S = Satisfactory explanation, N = explanation Needs Improvement

Assessment of learning skills
Observe throughout the lesson; Are students on task (Responsibility)? Are students beginning all tasks promptly (Initiative)? Are they working well with others (Collaboration)? Make notes on each of the learning skills in their anecdotal record (see teacher's binder).

5. Learning Context

A. The Learners

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

1) *Students know strategies for predicting the frequency of outcomes using dice and coins*

2) *Students are beginning to understand the reasoning for predictions (e.g., A coin has two sides therefore there is a one out of two chance of landing on either side).*

3) *Students are able to conduct probability experiments using dice and coins and are able to understand the comparison between their predictions and results*

4) *Students have a basic knowledge of fractions (i.e., 1/2, 2/5, 4/10).*

(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.)**

- TM has a visual impairment. Teacher will accommodate TM by allowing him to use his magnifying machine to complete the lesson. No further accommodation is needed in terms of the activity.
- MM has ADHD (see IEP). Mrs. Moore (Educational Assistant) will be coming in to assist him with the activity to keep him focused and help him work well with the other group members.
- CP has a broken arm and her writing hand is in a cast. She can use a scribe to help her complete her worksheet. If a scribe is not available, the student can use a tape recorder to verbally say answers, which can be written down by the teacher at the end of the day.
- SB is identified as having a Behavioural Issue (see IEP). If he is having a positive day, then no accommodation is needed. Mrs. Moore will keep watch over SB's behavior. If he is having a negative day, Mrs. Moore will assist in keeping SB on task. Due to this being an interactive lesson, disruptive behaviour should be at a minimum. Little accommodation is needed.

B. Learning Environment

The assigned classroom is Rm. 103. Tables should be in groups and equipped with the necessary tools. Students will sit in groups at the tables for the class. Students sit in their pre-assigned round tables. Student seating plan is in Resource Binder. The classroom is equipped with whiteboards, chalkboard, an overhead projector, Smartboard, a screen and a data projector. All other necessities will have to be brought to the classroom (see Resources/Materials). The classroom will remain in this 'normal' structure for the entire lesson. The teacher will be at the front of the classroom. During the application the teacher will be circulating the room as a management strategy. During the application, students will be working at their tables. This should require minimal movement around the classroom to situate themselves.

Adjustment to the environment

Have large spinner at the front of the classroom for a hook

Set box of spinners on the table at the front of the classroom

Set all other resources needed (e.g., worksheets, large spinners, etc) on shelf at front of room for easy access during lesson.

Have overhead plugged in and set to the side of the room.

C. Resources/Materials

Teacher Needs to Bring:

1) Whiteboard Markers (Various Colours)

2) Worksheets (32)

3) Three Spinners for each table. One spinner is divided into 4 sections, another into 5 sections, and the last into 10 sections.

4) Large spinner divided into 10 sections with various prizes written on it. Five sections with have "jellybeans" written on it, three sections will have "mini chocolate bar" written on it, and two sections with both "jellybeans and a mini chocolate bar" written on it.

5) Transparency with a 4-sectioned spinner drawn on it

INTRODUCTION
How will I engage the learners? (e.g., motivational strategy, hook, activation of learners' prior knowledge, activities, procedures, compelling problem)   **(3 minutes)**
1) See routine section of binder for Preparation for Math Class**.**
2) Greet students at the door. Students already know to go to their assigned seats.
3) Have student volunteer hand out worksheets.
4) Give class signal to bring whole class to focus
5) Give the large spinner at the front of the classroom a spin.

MIDDLE:
Teaching: *How does the lesson develop?*
How we teach new concepts, processes (e.g., gradual release of responsibility - modeled, shared, and guided instruction).
                                                                                                                           (15 minutes)
Instruction will begin with the teacher explaining the reasoning behind prediction. Using the larger spinner at the front of the room, the teacher will explain:

> **1)** that when a spinner with 4 sections is spun once, the chances of landing on one specific number is one in four.
> **2)** that there are certain scenarios that would result in an equally likely outcome. For example, landing on an even or odd number in a spinner with 4 sections would be equally likely because there are 2 odd numbers and 2 even numbers so the likelihood of landing on an odd or even number is 2/4 for both.
> **3)** that it is less likely to land on one specific section (i.e., 3) in one spin while using a spinner with 5 sections than when using a spinner with four sections.
> **4)** that the chances of landing on a specific number in a set of three (i.e., 1, 3, 4) in one spin is more likely than landing on a specific number in a set of two (i.e., 2, 5) because there is more numbers to land on therefore making the probability greater.
> **5)** that when you are using a 10 section spinner your chances of landing on one specific number in one spin is less likely than landing on one specific number in one spin using the 5 sectioned spinner (i.e. ,When using a 5 sectioned spinner there is a 1 in 5 chance of landing on the number 4 whereas when using a 10 sectioned spinner there is only a 1 in 10 chance of landing on the number 4).
> **6)** that when you use a 10 sectioned spinner, you are more likely to land on one specific number in a set of four numbers (e.g., 3,7,8, 10) than land on one single number (e.g., 2).
> **7)** that there are certain scenarios that would result in an equally likely outcome. For example, landing on an even or odd number in a spinner with 10 sections would be equally likely because there are 5 odd numbers and 5 even numbers so the likelihood of landing on an odd or even number is 5/10 for both.

Consolidation and/or Recapitulation Process*: How will I bring all the important ideas from the learning experiences together for/with the students? How will I check for understanding?*
                                                                                                                           (5 Minutes)
1) Teacher will go through the first question with the students using an overhead projector and a spinner with 4 sections drawn on a transparency.
2) The teacher will choose a volunteer from each table to show their understanding of one of the 5 options in the first question (i.e., A, B, C, D, or E).
3) Teacher will thank the volunteers and instruct students to begin completing the rest of the worksheet using the spinners with 5 and 10 sections.
4) Have classroom monitor (see monitor list on the blackboard) pass out the spinners to each student. Tell students not to touch the spinners until after they have made their predictions and explained the rationale for their predictions.

Application: What *will learners do to demonstrate their learning?* (Moving from guided, scaffolded practice, and gradual release of responsibility.)   **(15 Minutes)**
1) Teacher will circulate the classroom and make observations of the students working. The teacher will interact with each table, make notes, and giving clarification and feedback as necessary
2) Students will begin to make predictions of the outcomes using the prompts on the worksheet about spinners. Students will make note of their predictions on the worksheet next to each prompt (eg. What is the probability of the

spinner landing on the number 2?).
3) Students will explain the reasoning of their predictions (e.g., If you flick the spinner once, you are less likely to land on the number 2 because there is a one in four chance).
4) Students will conduct the experiment using the spinners. After each spin, students will note the outcome on the worksheet.
5) Teacher will turn the light off to get the students' attention. The teacher will inform the students to place completed worksheets in the center of their round table for collection. If a student has not completed their worksheet they need to please take it home for homework.

CONCLUSION: *How will I conclude the lesson?*   *(7 Minutes)*
1) The teacher will take out the large spinner with prizes written on it.
2) The teacher will inform all the students to pick a number between one and ten and write it down.
3) Then the teacher will go to each table and have a volunteer flick the 10-sectioned spinner.
4) The student from each table who guesses the number or is closest to it will get to spin the large spinner for their table. If two or more students have selected the same number and that number is closest, repeat the process with those students.
5) The prize that is landed on will be given to each student at that table. Repeat until all tables have spun and received prizes.
6) Dismiss when the bell rings

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7. My Reflections on the Lesson

What do I need to do to become more effective as a teacher in supporting student learning?
- Find ways to make more students participate and be involved in the activity.
- Teacher can ask follow-up question after the lesson (e.g., what didn't you understand, what parts would you like explained more, what did you liked about the lesson, what didn't you like, etc.)