Lesson Created by: Kathy Burgess and JudyGail S. Haber

Length of Lesson: 75 minutes

Math Objectives: VBOs 2.2.6 / SOL 2.2.4 Qualitative Probability

Language Arts Objectives: VBOs Predicting (2.1.8)

Materials: colored cubes, paper bag, dice, handouts for rotation centers, exit ticket, and Probably Pistaschio by Stuart J. Murphy

Procedure:

1. Read the story to the class. Stop on page 8 after …because it was too soggy and ask: Do you think Emma will have pastrami for lunch? Why do you think that?
2. Continue to read to the end of page 10. Ask the question: Why didn’t Jack’s prediction come true? What question could Jack have asked Emma so that he might have made a better prediction?
3. Read to the end of the story. Ask: “If Emma had a pastrami sandwich once a week would Jack expect a pastrami sandwich when he traded with her? Why or why not?
4. Divide the class into three groups (high, medium, and low based on understanding of probability determined prior to lesson).
5. Explain to the class the rotation for centers—each to be 20 minutes—use a timer.

Cube Game (teacher directed): Put 6 red cubes (or other similar small objects) into a paper bag. Shake the bag and ask the student to take one cube without looking and predict its color. Now replace two red cubes with two blue ones. Ask the student to predict which color cube would he or she get if they were to choose a cube ten different times (replacing the cube each time). Do the experiment to test prediction. Discuss why there was a different result with each cube drawn. Try the activity again with 4 blue cubes and 2 red ones. Have the same discussion making sure the students
understand how the students can analyze data in order to make informed decisions.

**Buddy Read:** *If You Give a Mouse a Cookie* or *If You Give a Moose a Muffin* or *If You Give a Pig a Pancake*—Choose one to buddy read—Stop after every third page to predict what will happen next. Discuss with partner. After reading the story, create your own endings and explain why you ended it the way you did.

**Dice Prediction Activity:** Write on worksheet how many times you think each number will display on the top of the rolled die if you rolled the die 50 times. Now, roll the die 50 times making a tally mark of each roll next to the number shown on the top of the die each time until you have 50 tallies. Now answer the questions below.

6. Have the students clean up and complete the exit ticket.

**Evaluation:** Completion of the exit ticket and teacher observation during rotations.
Buddy Read – Alternate Ending (Probability)

Title of Book: _______________________________________
Author: ________________________________

If you give a __________________________a __________________________, then
_______________________________________________________________
_______________________________________________________________
_______________________________________________________________
_______________________________________________________________

I chose to end my story this way because
_______________________________________________________________
_______________________________________________________________
_______________________________________________________________
_______________________________________________________________

Illustrate your new ending:
Materials needed: 1 die and a pencil.

Procedure:
1. Predict how many times a number on a die will show up on top if you roll a die 50 times.
2. Roll the die and record with a Tally Mark.
3. Repeat 50 times.
4. Answer the questions below.

GOOD LUCK and HAVE FUN!

Prediction:
1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Tally Mark Recording Section:

<table>
<thead>
<tr>
<th>Number</th>
<th>Tally Markers</th>
<th>Total Tallies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<td>6</td>
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</tbody>
</table>

Were your predictions correct? Why or Why not?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Is there anything you can do to make help your predictions and make a better decision? Explain your answer.
________________________________________________________________________
________________________________________________________________________
What is probability?

What can help you make an informed decision?

Any questions/or concerns:

What is probability?

What can help you make an informed decision?