Algebra 2: Monty Hall Lab 9.3

Name: _____ Date: _____

Pre-Lab

Background

The Monty Hall Problem is based off of a classic game show called *Let's Make a Deal*.In the show, the following steps happen:

1. The contestant selects one out of three doors. Only one of the doors has a prize behind it.
2. The host of the show selects a different door and opens it.
3. The host gives the contestant the option of switching from her original choice to the remaining closed door.
4. The door finally selected by the player is opened and she either wins or loses.

The question is whether it is advantageous for the contestant to switch doors in step 3.

Critical Thinking Questions

1. What possible outcomes are you able to get from this game?
2. What is the probability of each outcome?
3. Does the option to switch change the probability of winning the game?

Experiment

1. Find a partner.
2. Retrieve 3 cups and 3 tokens from the teacher.
3. Use the three cups to cover the three tokens, so that each cup is covering one token.
4. Have one group member play the part of the host, and another play the part of the contestant.
5. Have the contestant choose one cup.
6. Have the host reveal one unchosen cup that does not contain the prize.
7. Do **not** give the contestant the opportunity to switch.

8. Reveal what was under the contestant's cup.
9. Repeat this experiment 15 times total.
10. Record your results as you go in the space below:

11. Repeat this experiment 15 times, except make the following changes:
    (a) On step 7 the contestant must choose the other unrevealed cup.
12. Record your results as you go in the space below:

13. Report your findings on the whiteboard.

Post-lab

1. Which strategy works best?
2. What is you hypothesis concerning the probabilities in the Monty Hall Problem?

How did you like this activity?

0	1	2	3	4	5
Not at all					Best thing since sliced bread

How can this activity be improved?