

Hwk #8 – Drawing Area Models (Inv. 4.1)

A school carnival committee features a different version of the Making Purple game, as shown below.



1. Before play the game, do you predict that the school will make money on this game? Explain.
2. Use an area model to show the possible outcomes for this game. Explain how your area model shows all the possible outcomes.
3. What is the theoretical probability of choosing a red and a blue marble on one turn?

4. Suppose one marble is chosen from each bucket. Find the probability of each situation.
 - a. You choose a green marble from Bucket 1 and a yellow marble from Bucket 2.
 - b. You do not choose a blue marble from each bucket.
 - c. You choose two blue marbles.
 - d. You choose at least one blue marble.

5. There are two No- Cavity prize bins at a dentist's office. One bin has two hot-pink toothbrushes and three neon-yellow toothbrushes. The other bin has four packages of sugar-free gum, three grape and one strawberry. Kira has no cavities. The dentist tells her to close her eyes and choose a prize from each bin.
 - a. What is the probability that Kira will choose a neon-yellow toothbrush and a pack of grape gum? Draw an area model to support your solution.

 - b. The dental assistant refills the bins after every patient. Suppose the next 100 patients have no cavities. How many times do you expect the patients to get an eon-yellow toothbrush and a pack of grape gum?