**Carnival Game Tycoon Lecture Notes: Lesson 2 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Delta College STEM Explorer **Hour**:\_\_\_\_\_\_

**I. Theoretical Probability vs. Experimental Probability**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Probability: a mathematical calculation of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a chance experiment.
   * 1. 1. Ex. There is a \_\_\_\_ or \_\_\_\_\_ chance of a couple having a \_\_\_\_\_\_\_\_\_\_ as opposed to a \_\_\_\_\_\_\_\_\_.
     2. 2. Ex. There is a \_\_\_\_ or \_\_\_\_\_ chance of me picking the correct # from 1 to 10.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Probability: the \_\_\_\_\_\_\_\_\_\_\_\_ results of a chance experiment when put into practice.
   * 1. 1. Ex. A couple has \_\_\_ girls, and only \_\_\_ boy.
     2. 2. Ex. It takes me only \_\_\_ tries to pick the correct number from 1-10.

* Coin Flip Activity #2

1. Expectations vs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. It is expected that a flipped coin coming up heads should have a theoretical probability of \_\_\_\_\_ or \_\_\_\_\_.
   2. The results of our first 4 flips was \_\_\_\_\_ or \_\_\_\_\_\_.
   3. The results of our 60 flips was \_\_\_\_\_ or \_\_\_\_\_.
   4. As the number of trials increases the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gets closer to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**II. Using Probability Trees to Predict Outcomes**

1. Probability Tree: A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ representation of the pathways to possible outcomes.
   1. What are the chances of rolling H, H?\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_
   2. …H, T? \_\_\_\_\_ or \_\_\_\_\_
   3. …H,H,H,H? \_\_\_\_\_ or \_\_\_\_\_
   4. …H,T,H,T? \_\_\_\_\_ or \_\_\_\_\_
2. To calculate probabilities of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_events using a probability tree, the fractions are\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   1. ex. 20 Heads in a row: ½ x ½ x ½ …(20) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_