**Rolling a Double Six**

 Date:

Name:

**Comparing Empirical & Theoretical Probabilities**

\_\_\_\_\_\_\_\_LT: I can recognize, solve, and explain the mathematics of empirical and theoretical probabilities.

\_\_\_\_\_\_\_\_LT: I can express deep conceptual understanding of mathematical concepts through writing.

**GUESS**: What is the probability of rolling double sixes?

**TASK**: Class assignment: create a chart with the sum of a pair of dice thrown 1000 times.

**DIRECTIONS**: Work as a class to complete the task. Make sure you personally record the data. After completing the task, get a worksheet that guides you in the theoretical probability of the sum of two dice. Complete this sheet. Finally, answer the questions below. Hand in this experiment with a) This sheet completed b) recorded data (empirical probability) and c) worksheet on theoretical probability.

Questions:

1. What was the empirical probability of rolling a sum of 7? \_\_\_\_\_\_\_\_\_ A sum of 12?

2. What is the theoretical probability of rolling a sum of 7? \_\_\_\_\_\_\_\_\_ A sum of 12?

3. How do the empirical and theoretical probabilities compare?

4. What increases the chances that the empirical data and the theoretical probability will be extremely close?