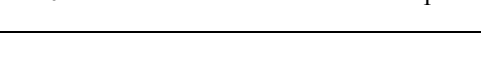Name _____   Date _____   Period_____

I'm On A Roll

You will need one cube and six sticky dots. Write the first six letters of your name on sticky dots. Use some of your last name if you need more letters. Put one of the sticky dots on each face of the cube.

Part 1: Prediction. Predict the probability of each event happening and record this as a point on a number line and as a fraction. Leave "relative frequency" blank for now.

Event	Predicted Probability- Number Line	Predicted Probability- Fraction	Relative Frequency
Roll a letter that is in your name	0 1		
Roll a Vowel	0 1		
Roll a letter NOT in your name	0 1		
Roll the die 6 times and get the exact 6 letters you listed	0 1		
Roll the die 6 times and get the exact 6 letters you listed IN ORDER	0 1		

Part 2: Experiment

Roll your cube 30 times. Record the results here. **List each letter only once**, even if it appears on your cube more often.

Letter (listed only once)	Tally Marks	Total

Part 3: Analysis

Go back to your prediction table and record the relative frequency (the ratio of how many times you rolled the event to how many total rolls). How close was the relative frequency to your predictions?

Challenge:

If you rolled your cube 150 times, how many times do you predict you would get a vowel? Show your calculations.

IMP Activity: I'm on a Roll

Materials:
1-inch plastic cubes (1 per student)
Circle Sticky Dots (6 per student)

Objective:
Students will create a die comprised of the first 6 letters of their name, predict the probability of getting certain results, and display their probability on a number line and as a fraction. They will look at results to explain probability as a number between 0 and 1 and as the chance of an event occurring.

Directions:
Write out 6 letters from your first or last name on a paper under the document camera. If you have repeat letters, write the repeats (so if you have two A's, then your die should also have two A's). Show the students how you will copy each letter onto a circle sticky dot and then place the sticky dots onto your blank plastic number cube. Let the students know they will be following the same process with their name. Once they understand, pass out the cubes and sticky dots. Give students 2 minutes to get their name die ready. Then, give the students 3 minutes to make predictions and record these on their paper. Circulate to ensure students understand what it is they are predicting. Then, give them 5 minutes to complete their 30 trials, ensuring they record the results in the table provided. Once they have finished, have them go back to the prediction table and record the fraction of successful trials. Call on a few students to share results and discuss interesting findings such as the low probability of rolling your 6 letters in order or the higher probability of some students to roll a vowel.