

## Experimental Probability

Date: \_\_\_\_\_

1. Perform an experiment to investigate the experimental probability of rolling a single die.
  - (a) Roll the die 10 times. Record the results of each roll
  - (b) Create a frequency distribution table and graph of the results of the 10 rolls.
  - (c) Determine the experimental probability of rolling a 1 after 10 rolls. Write this probability as a fraction, a decimal, and a percent.
  - (d) Roll the die another 40 times to make 50 rolls in total. Record the results of each roll.
  - (e) Create a frequency distribution table and graph of the results of all 50 rolls.
  - (f) Determine the experimental probability of rolling a 1 after 50 rolls. Write this probability as a fraction, a decimal, and a percent.
  - (g) Compare and contrast the two results of the two experimental probabilities.
  - (h) Are the results what you would expect?

Roll Value	Tally	Frequency	Experimental Probability		
			Fraction [ $\frac{\text{frequency}}{\text{total \# of rolls}}$ ]	Decimal	Percent
1					
2					
3					

## Probability

- likelihood of an event
- based on how often the event occurs in comparison with the total number of trials
- can be used to check whether or not the collected data are representative of what will typically happen
- can help assess the validity of any conclusions drawn from a sample or simulation

## Trial

- one repetition of an experiment

## Event

- a possible outcome of an experiment

## Experimental Probability

$$P(a) = \frac{\textit{number of times the desired event occurred}}{\textit{number of trials}}$$