

Profiling the Odds:

Analyzing Racial Disparities with Probability

In the news there have been claims that police use profiling when conducting stops.

We are going to be using probability and data to examine the likelihood of police stops in Kalamazoo based on race.

We will be starting with experimental probability. For each test there will be 20 marbles in the container.

The different races are represented by different colors.

Color	Race
Red	White
Green	Black
Yellow	Hispanic
Blue	Other

Trial 1

Test Results

Color	Number
Red	
Green	
Yellow	
Blue	

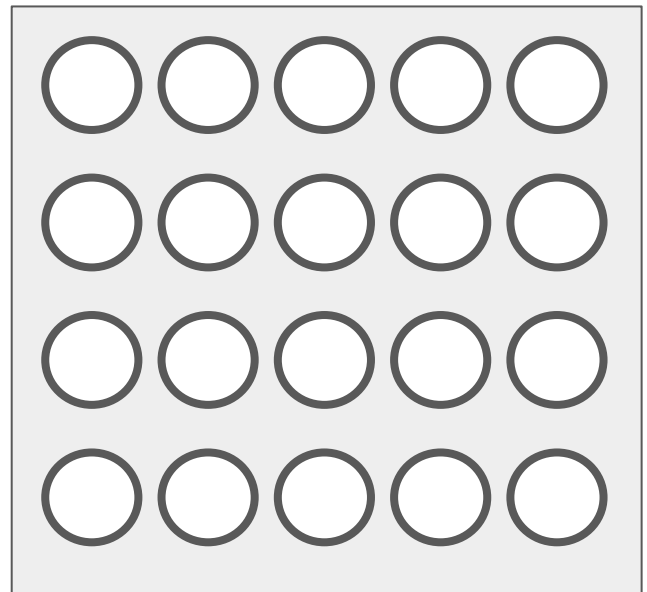
Visual Results

Click to make a pie graph

Experimental Probability

Color	Probability	Percent
Red		
Green		
Yellow		
Blue		

My Prediction



Trial 2

Test Results

Color	Number
Red	
Green	
Yellow	
Blue	

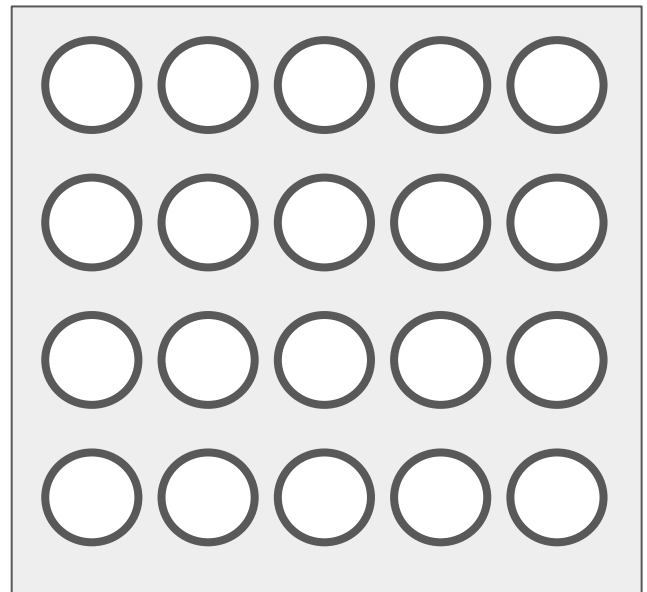
Visual Results

Click to make a pie graph

Experimental Probability

Color	Probability	Percent
Red		
Green		
Yellow		
Blue		

My Prediction



Trial 3

Test Results

Color	Number
Red	
Green	
Yellow	
Blue	

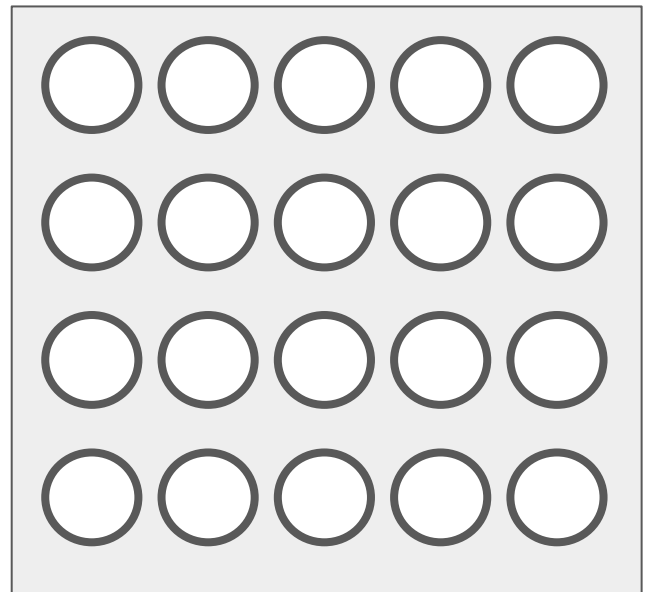
Visual Results

Click to make a pie graph

Experimental Probability

Color	Probability	Percent
Red		
Green		
Yellow		
Blue		

My Prediction



Take a Look

What do you think each trial represents? Why?

Trial 1

Trial 2

Trial 3

Theoretical Probability

For each trial find the theoretical probability and create a pie graph.

[Click here to create your graphs](#)

Trial 1

Color	Probability	Percent
Red		
Green		
Yellow		
Blue		

Theoretical Probability

Trial 2

Color	Probability	Percent
Red		
Green		
Yellow		
Blue		

Trial 3

Color	Probability	Percent
Red		
Green		
Yellow		
Blue		

Reflection

Are there any differences between the theoretical probability and experimental probability? Why?

What patterns do you notice in the data? How can they help you make sense of the data?

Reflection

What factors are not represented by the data? Do the numbers hide anything?

What responsibilities do we have when using probability to talk about what is happening in the world?

Reflection

What conclusions can you make about this data? How did you come to those conclusions?

Write at least 5 sentences to tell what you have learned. Support your answer by using the data.

Rubric

Option A

	Exceeds	Mastery	Approaching	Needs Improvement
Experimental probability	Experimental probability is properly calculated and applied to demonstrate application to real world events	Experimental probability is properly calculated and used to come to conclusions	Experimental probability is calculated with minimal errors, experimental probability data is minimally used to support conclusions	Experimental probability has errors and is not used to support conclusions
Theoretical Probability	Theoretical probability is properly calculated and applied to demonstrate application to real world events	Theoretical probability is properly calculated and used to come to conclusions	Theoretical probability is calculated with minimal errors, theoretical probability data is minimally used to support conclusions	Theoretical probability has errors and is not used to support conclusions
Reflection	Reflection is complete and includes evidence of data and the restrictions of numerical data.	Reflection is complete and is supported with evidence based on the data.	Reflection is included but has missing connections or lack of supportive data	Incomplete reflection which is not supported with data.

Rubric

Option B

	Needs Improvement	Approaching	Mastery	Exceeds
Experimental probability	Experimental probability has errors and is not used to support conclusions	Experimental probability is calculated with minimal errors, experimental probability data is minimally used to support conclusions	Experimental probability is properly calculated and used to come to conclusions	Experimental probability is properly calculated and applied to demonstrate application to real world events
Theoretical Probability	Theoretical probability has errors and is not used to support conclusions	Theoretical probability is calculated with minimal errors, theoretical probability data is minimally used to support conclusions	Theoretical probability is properly calculated and used to come to conclusions	Theoretical probability is properly calculated and applied to demonstrate application to real world events
Reflection	Incomplete reflection which is not supported with data.	Reflection is included but has missing connections or lack of supportive data	Reflection is complete and is supported with evidence based on the data.	Reflection is complete and includes evidence of data and the restrictions of numerical data.