

The purpose of this activity is to illustrate the significance of random rather than subjective sampling of a population. Later we will return to this study to discuss the effect of sample size in refining an estimate.

① Do not turn this page over until you are invited to do so. Look over the questions below first to get an idea of what you will be doing. Once you have turned the page, answer the questions.

- (a) Without studying the display of rectangles too carefully, quickly choose five that you think represent the population of rectangles on the page. This is your subjective sample. Enter the rectangle numbers in the table below.

Rectangle Number					
Area					

Subjective Sample Mean: _____

- (b) Find the areas of each rectangle in your sample of five and enter them in the corresponding places in the table. Compute the sample mean, that is, the average area of the rectangles in your sample.
- (c) List your sample mean with those of the other students in the class. Construct a plot of the means for your class.
- (d) Describe the shape, center, and spread of the plot of sample means from the judgment samples.

- (e) Now generate five distinct random Integers between 1 and 100. Find the rectangles whose numbers correspond to your random numbers. This is your random sample of five rectangles.
- (f) Repeat steps (b)-(d), this time using your random sample.

Rectangle Number					
Area					

Random Sample Mean: _____

- (g) Discuss how the two distributions of sample means are similar and how they differ.
- (h) Which method of producing sample means do you think is better if the goal is to use the sample mean to estimate the population mean?

Population of Rectangles

