Sample Selections Procedures

Mary, James, and Scott conducted surveys to estimate how many students in their school would attend a student production of *Chicago*. What is the best prediction for the percent of students in the whole school that would attend *Chicago*?

Students Who Would Attend *Chicago*	
Method of Selecting Sample	**Percent**
Mary asked 75 friends	30%
James selected 75 names from 6th graders	80%
Scott selected 75 names from the whole school	60%

Mary selected her sample by asking 75 of his friends. James selected his sample by placing all of sixth-grade students in a hat and selected 75 names from the hat. And finally, Scott put the names of all of the students in the school in a hat and selected 75 names from the hat. Mary, James, and Scott asked each person they surveyed: "Would you come to the school play if it were *Chicago* and it cost $4?"

Mary's sample is called a convenience sample. A **convenience sample** is a sample that is easy to obtain. However, Mary's friends may not be representative of the whole school. Many of her friends might dislike *Chicago*. James sample could be a biased sample. A **biased sample** is a sample that is not representative of the whole population. Mary selected a random sample of the sixth-grade students. Every sample of 75 students had the same chance of being chosen. However, sixth-grade students may not be representative of the other grade levels. Mary's sample could also be biased.

Scott selected a random sample of the school. A **random sample** is a sample in which each member of the population has the same chance of being chosen, and in which each equally sized group within the population has the same chance of being chosen. Scott's sample is most likely to be a representative sample of the whole school. A **representative sample** is any sample that gives you a good idea of what a population is like. His sample is the best of the three to make a prediction for the whole school.

The best prediction for the percent of students of the whole school that would attend *Chicago* is 60%.

If Scott put all the names he selected back in the hat, mixed up the names, and selected another sample of 75 names, the percent might be different. However, if

he repeated his sampling several times, the average of the percents he would get would probably be close to the percent of the students of the whole school who would attend *Chicago*.