

OVERVIEW

Sampling is a technique used to make predictions about the behaviors or characteristics of a population or collection by noting the frequency of the behaviors or characteristics in a sample of the population.

LEARNING OUTCOMES

The students will:

- Use counting to determine the distribution of given data within a sample population
- Represent comparisons as ratios
- Express fractions as decimal and percents
- Use sampling to estimate the frequency of given behaviors/characteristics in a total population.

NEW YORK STATE STANDARDS

Standard 3: 2B, 3A, 3F, 6C

A. SELECT A SECTION

MATERIALS: Playbook and calculators

1. Use the picture on p.10.
 - a. By section, count the number of fans with hats and the total number of fans in the section.
 - b. Record the data on the board while students record the data on p.11 of the Playbook.
 - c. Demonstrate how to complete the table.
 - d. Discuss predictions about the whole crowd based on the sampling.
 - e. Have students use the proportion to make a projection about the number of hats in a crowd of 74,000.

TIME:



15-20 minutes,
Large Group Teacher
Directed Activity

CROWD COUNT

2. Use the picture on page 12.
Students should repeat the activity above using the characteristics of their choice and record the data on the Ralph Wilson Stadium Sampler–II, p.13 in their Playbooks. (Bills shirts, sunglasses, etc.) Use the information to predict the incidence of the characteristic in the total population of 74,000.
3. Have students engage in a summarizing discussion. Questions for their consideration could include:
 - Why do we use sampling?
 - What conclusions can be drawn from sampling?
 - What factors can affect the validity of the conclusions?
 - Does sampling give exact measures?*(You may want to revisit these questions later.)*



TIME:

20-30 Minutes,
Whole Group and
Small Group Activity

B. GRAPH TYPES

MATERIALS: Playbook

1. Students complete p.14 and 15 in Playbook using data from Sampler II data collection page. You may use a Blank Bar Graph and Line Graph Transparency for demonstration.

TEACHER NOTES:

Sampling suggestions:
number of left handed students in class, number of students who walk to school, number of students whose birthday is in a specified month, etc.



TIME:

20-30 Minutes,
Individual/Small
Group Activity

OVERTIME

C. "REAL WORLD" SAMPLING

1. As a class, choose something else to sample. Students should repeat the entire sampling process for this activity and discuss ways of presenting the data and the conclusions that may be drawn. The students then can use the information to predict the incidence of the characteristic in the total school population.
2. Contact a local business and write a report on how the business uses sampling for decision making.