



Name \_\_\_\_\_ Date \_\_\_\_\_

## Using Sampling to Predict (Pages 546–548)

If you want to make a prediction about a large group of people, you may wish to use a smaller group, or **sample**, from the larger group. The large group from which you gathered your sample is known as the **population**. To make sure your information represents the population, the sample must be drawn at *random*. A random sample gives everyone the same chance of being selected.

### EXAMPLES

**The school math club asked several students at random what they like to eat during their afternoon snack break. Three students said they like to eat muffins, five said fruit, and one said bagels.**

- A** What is the size of the sample?

Add the number of people who were asked.  
 $3 + 5 + 1 = 9$

- B** What percent preferred muffins?

3 out of 9 said that they like to eat muffins.  
 $\frac{3}{9} = \frac{1}{3}$  or  $33\frac{1}{3}\%$

- C** Based on their survey, about how many of the 1,200 students in the school would prefer muffins for their afternoon snack?

$\frac{1}{3} \times 1,200 = 400$   
 So about 400 students would prefer muffins.

- D** Were the students the math club surveyed an appropriate sample?

The students surveyed by the math club probably were not an appropriate sample because there were so few students surveyed compared to the total number of students in the school.

### PRACTICE

- Brushy Creek Middle School is a new school with 800 students. The principal asked some students their preference for the new school mascot. The results were that 22 preferred an eagle, 36 preferred a tiger, and 42 preferred an armadillo.
  - What is the sample size?
  - What percent wanted the armadillo to be the school mascot?
- Biology** Every month for three years, a biologist has caught 30 fish from a lake and checked their blood for lead contamination. In the three years, she has found 270 fish with lead in their blood. If she decides to check 40 fish next month instead of 30, how many do you predict will have lead in their blood?



- 3. Standardized Test Practice** A film company wants to see test-audience reactions to a new cartoon adventure film before they start advertising. Which of the following test audiences would make the best sample of the film's intended audience?

- A** college students  
**C** senior citizens

- B** high school students  
**D** elementary school students

Answers: 1a. 100 1b. 42% 2. 10 3. D