

# Collecting Data (Pages 32–37)

**Sampling** is a convenient way to gather **data**, or information. A **sample** is a small group that is used to represent a much larger **population**.

<b>Sampling Criteria</b>	<p>A good sample is:</p> <ul style="list-style-type: none"> <li>• representative of the larger population,</li> <li>• selected at random, and</li> <li>• large enough to provide accurate data.</li> </ul>
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One way to organize data is by using a **frequency table**. **Tally marks** in a frequency table are used to record and display the frequency of events. In a **cumulative frequency table**, frequencies are accumulated for each item.

## EXAMPLES

- A** Twenty people out of 50 are randomly chosen at a restaurant to determine the percent of people who dine out once a week. Is this a good sample?

*The sample is random, but it is biased in favor of people who dine out, and it is too small to reflect the general population.*

- B** Organize the data in the chart into a frequency table.

Number of Students Tutored			
22	15	17	24
32	28	14	25
9	22	30	16

*Use intervals so there are fewer categories. Use 3 columns: Number, Tally, and Frequency.*

Number of Students Tutored		
Number	Tally	Frequency
0–10		1
11–20		4
21–30		6
31–40		1

## PRACTICE

**Determine whether each is a good sample. Explain.**

- One hundred people at a beach resort are randomly chosen to determine the percent of people who use sunscreen.
- A telephone company calls every third person making a complaint to see if they are satisfied with their telephone service.

**Refer to the chart at the right.**

- Make a frequency table to organize the data.
- What is the most common number of pets per student?
- How many students have 3 or more pets?

Number of Pets per Student					
2	0	3	1	0	4
1	2	5	3	2	0
3	4	1	0	2	3
1	2	0	1	2	3

- 6. Standardized Test Practice** The frequency table shows the number of e-mails each student sends per day. Which statement is correct?

- A** 3 students send 5 e-mails per day.  
**B** Most students send at least 1 e-mail per day.  
**C** Most students sent 2 or more e-mails.  
**D** There are a total of 6 e-mails.

E-mails	Tally	Frequency
0		5
1		8
2		7
3		5

**Answers:** 1. Yes. The sample is random and large, and people who spend time at a beach are representative of those who might use sunscreen. 2. No. The sample is random and large, but most of the people surveyed are probably not satisfied. 3. See Answer Key. 4. 2 5. 8 6. B