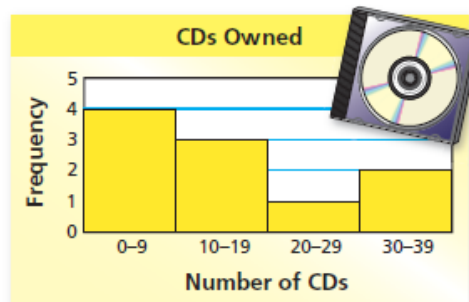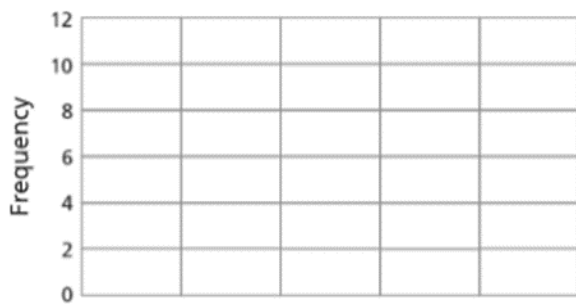# Lesson 10.2 Histograms

Key Idea

Histograms

A **histogram** is a bar graph that shows the frequency of data values in intervals of the same size.

The height of a bar represents the frequency of the values in the interval.

CDs Owned

Frequency vs Number of CDs (0–9, 10–19, 20–29, 30–39)

Example 1: Making a Histogram

The frequency table shows the numbers of laps that people in a swimming class completed today. Display the data in a histogram.
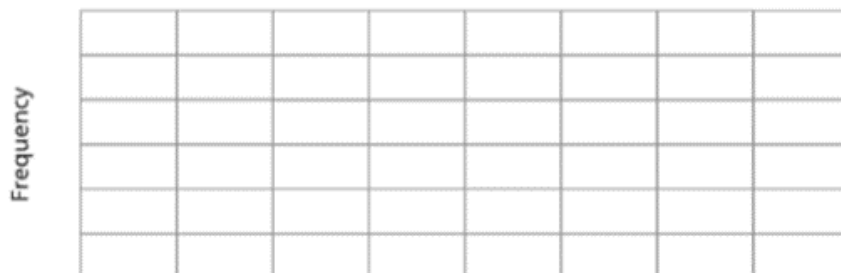
Number of Laps	Frequency
1–3	11
4–6	4
7–9	0
10–12	3
13–15	6

1. The frequency table shows the ages of people riding a roller coaster. Display the data in a histogram.

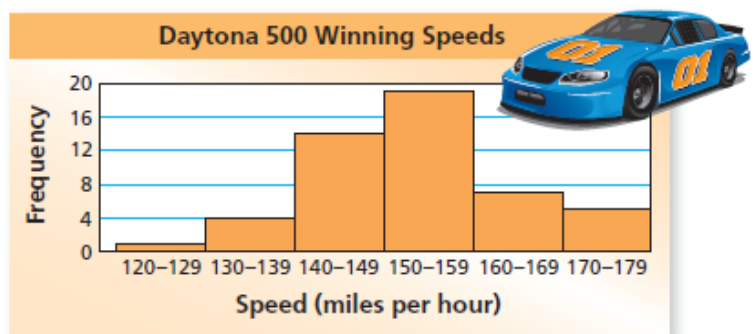| Age	10–19	20–29	30–39	40–49	50–59
Frequency	16	11	5	2	4

Frequency

Example 2: Using a Histogram

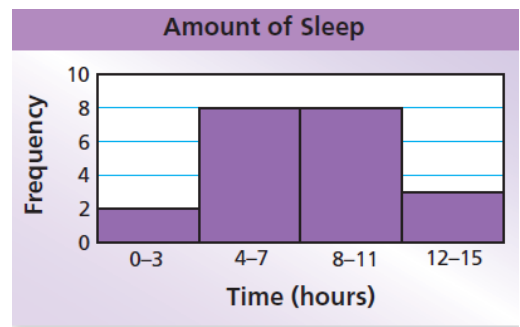The histogram shows the winning speeds at the Daytona 500.
(a) Which interval contains the most data values? (b) How many
of the winning speeds are less than 140 miles per hour? (c)
How many of the winning speeds are at least 160 miles per
hour?

Daytona 500 Winning Speeds

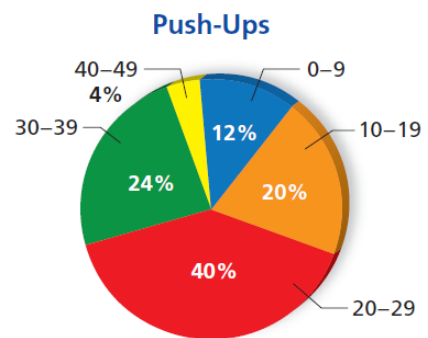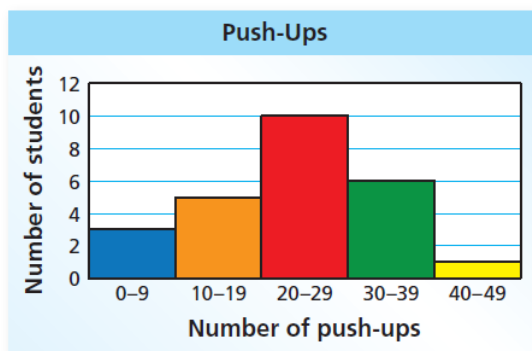2. The histogram shows the numbers of hours that students in a class slept last night.

a. How many students slept at least 8 hours?

Amount of Sleep

b. How many students slept less than 12 hours?

The data displays show how many push-ups students in a class completed for a physical fitness test. Which data display can you use to find how many students are in the class? Explain.

Push-Ups histogram showing Number of students versus Number of push-ups (0–9, 10–19, 20–29, 30–39, 40–49)

Push-Ups pie chart: 0–9 12%, 10–19 20%, 20–29 40%, 30–39 24%, 40–49 4%

Example 4: Making Conclusions from Data Displays

Which statement *cannot* be made using the data displays in Example 3?

(A) Twelve percent of the class completed less than 10 push-ups.

(B) Five students completed at least 10 and at most 19 push-ups.

(C) At least one student completed more than 39 push-ups.

(D) Twenty-nine percent of the class completed 30 or more push-ups.