

DOES THE PERCENTAGE OF PEOPLE WHO WALK TO WORK IN CITIES VARY WITH POPULATION SIZE?

Activity Item

The following item is part of this activity and appears at the end of this student version.

- Item 1: Top 15 Walk-to-Work Cities in the United States, 2014

Student Learning Objectives:

- I will be able to create box plots using census data.
- I will be able to compare my box plots to investigate differences in center and variability.

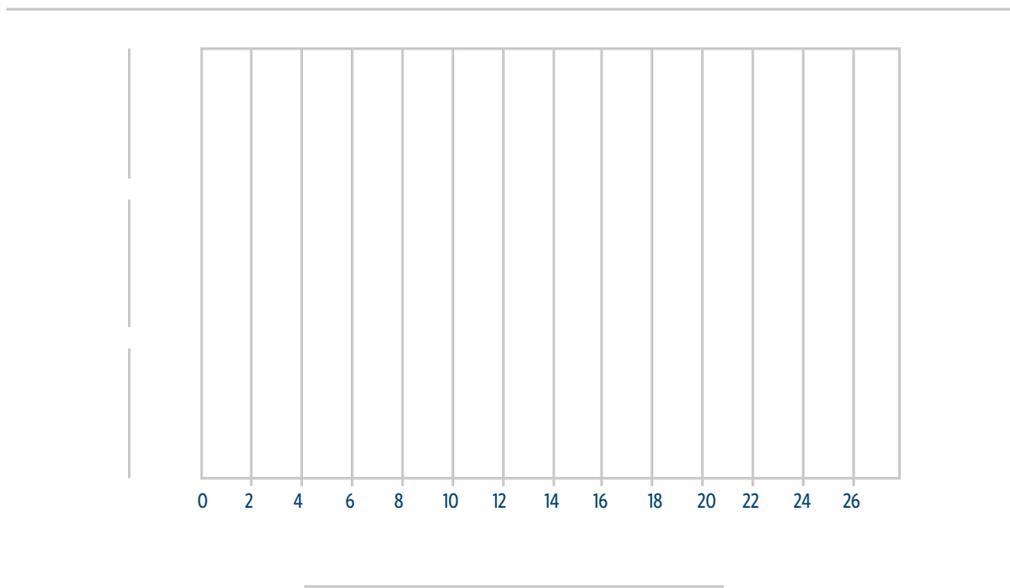
NAME: _____ DATE: _____

In this activity, you will examine the percentages of people who walk to work in cities of different population sizes — small, medium, or large — to learn about variability.

Part 1 – Create Box Plots

Using the data in **Item 1: Top 15 Walk-to-Work Cities in the United States, 2014**, create three box plots, one for each size category, on the graph template below. Stack your box plots one above the other (it doesn't matter which is on top). Make sure that you:

- Round your data points to one decimal place, and write them in the spaces provided below the number line.
- Use a ruler to make each box plot neat.



- Title each box plot in the spaces provided next to the vertical axis, add an overall title for your graph, and label your horizontal axis.

Small Cities: minimum = _____ Q_1 = _____ median = _____ Q_3 = _____ maximum = _____

Medium Cities: minimum = _____ Q_1 = _____ median = _____ Q_3 = _____ maximum = _____

Large Cities: minimum = _____ Q_1 = _____ median = _____ Q_3 = _____ maximum = _____

Part 3 - Write a Report About What You Learned

Write a three-paragraph report, with a title, about what you learned in this activity. In the first paragraph, summarize what you discovered about the percentages of people who walk to work in the different cities and how that information helps (or doesn't help) you answer this question: "Does the percentage of people who walk to work in cities vary with population size?" In the second paragraph, give specific examples to support your points, being sure to use good mathematical language. In the third paragraph, discuss how these data are important — specifically how city governments could use them.

Item 1: Top 15 Walk-to-Work Cities in the United States, 2014

| Rank | Large Cities (>200,000 workers) | Percent of residents 16 and older who walk to work | Medium Cities (>100,000 and <200,000 workers) | Percent of residents 16 and older who walk to work | Small Cities (>20,000 and <100,000 workers) | Percent of residents 16 and older who walk to work |
|------|------------------------------------|--|--|--|--|--|
| 1 | Boston, MA | 14.3 | Pittsburgh, PA | 10.9 | Cambridge, MA | 24.9 |
| 2 | Washington, DC | 13.1 | Madison, WI | 10.3 | Columbia, SC | 21.4 |
| 3 | San Francisco, CA | 11.2 | Newark, NJ | 9.6 | Berkeley, CA | 19.6 |
| 4 | New York, NY | 9.9 | Jersey City, NJ | 9.4 | Albany, NY | 14.5 |
| 5 | Seattle, WA | 9.8 | Honolulu, HI | 9.1 | Ann Arbor, MI | 14.4 |
| 6 | Philadelphia, PA | 8.2 | San Juan, PR | 7.7 | Jacksonville, NC | 13.8 |
| 7 | Minneapolis, MN | 7.8 | Norfolk, VA | 6.7 | Bloomington, IN | 13.4 |
| 8 | Chicago, IL | 6.7 | Buffalo, NY | 6.6 | Iowa City, IA | 13.1 |
| 9 | Baltimore, MD | 6.6 | Cincinnati, OH | 6.4 | New Haven, CT | 13.0 |
| 10 | Portland, OR | 5.4 | Salt Lake City, UT | 5.8 | Flagstaff, AZ | 12.8 |
| 11 | Milwaukee, WI | 4.9 | Cleveland, OH | 5.4 | Somerville, MA | 12.2 |
| 12 | Atlanta, GA | 4.6 | Richmond, VA | 5.0 | Syracuse, NY | 12.2 |
| 13 | Miami, FL | 4.2 | St. Louis, MO | 5.0 | Union, NJ | 11.6 |
| 14 | Denver, CO | 4.1 | New Orleans, LA | 4.6 | Evanston, IL | 10.8 |
| 15 | Detroit, MI | 3.7 | St. Paul, MN | 4.4 | Miami Beach, FL | 10.3 |

Source: *COMMUTING CHARACTERISTICS BY SEX 2014: ACS 1-year Estimates*

Large Cities

Medium Cities

Small Cities