

Making Sense of the Census With Young Learners

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Since 1790, the United States government has conducted a count of its people by conducting a census every decade.¹

The U.S. Census provides valuable data describing the population according to a variety of criteria including ethnicity, gender, age, and income, among other categories. Census data are used to ensure that the many services our federal government provides to its citizens are efficiently distributed and to apportion congressional representation for each state. State, local, and tribal governments rely on census data as they make decisions about public spaces like parks and buildings like schools and libraries. Community organizations use census data to plan community action projects and develop other social service programs. Census numbers help businesses decide where to locate new stores or offices.²

Participating in the Census is an important civic responsibility. Young learners need to be aware that the U.S. Census process will occur every ten years throughout their lives. They need to know the purposes of the U.S. Census, and they can be introduced to Census resources developed especially for their grade level.

Finally, when young learners are well-informed, they may help motivate adult family members to learn about this decadal event, complete their census surveys, and return them in a timely manner.³


Teaching about demographics and some of the interesting issues associated with the U.S. Census to young learners may seem complicated and overwhelming. However, the basic concepts and practices can be explored effectively through cooperative learning, problem-solving, and real-world connections.⁴ Early childhood, elementary, and middle school teachers can capitalize on many different opportunities to integrate the curriculum and engage their learners as they explore Census resources.

The learning experience presented here combines a selection of children's literature with mathematical concepts and skills in a social studies context, while emphasizing key vocabulary across the curriculum.⁵ This lesson, appropriate for students in the fifth grade, can be modified so that the activities and

outcomes are developmentally appropriate for a wide range of needs and interests. These activities should not be rushed and can occur over several consecutive days.

Interdisciplinary Connections

In the first lesson, the teacher provides population data for five fictitious towns. The “small town populations” in this exercise allow students to work with the manipulatives, record their calculations, practice the vocabulary, and analyze the results—all with the use of smaller numbers. Second, the teacher provides students with Census data for the whole nation for the year 2006.⁶ Then students can perform the same activities with larger, actual population figures. Finally, after listening to the teacher read aloud passages from *If America Were a Village: A Book about the People of the United States*, students discuss some of the various types of data that are collected during census taking.

The lesson plan appears on the following three pages. Handouts for the lesson, and some suggested extension activities, comprise the Pullout in this issue of *SSYL*. 

Notes

1. United States Census Bureau, www.census.gov.
2. Nancy P. Gallavan, “Census 2000: Trends and Issues in Counting the People,” *Social Education* 63 no. 7 (1999): 451-456.
3. Census in the Schools, www.census.gov/schools/index.html.
4. National Council for the Social Studies, Position Statement: “Powerful and Purposeful Teaching and Learning in Elementary School Social Studies,” (2009), www.socialstudies.org/positions/powerfulandpurposeful; National Association for the Education of Young Children, “Position Statement on Developmentally Appropriate Practice Early Childhood Programs” (2009), naeyc.org/about/positions/pdf/PSDAP.pdf.
5. National Council for the Social Studies, *Expectations of Excellence: Curriculum Standards for Social Studies* (Washington, DC: NCSSE, 1994).
6. Table QT-P1, “Age Groups and Sex: 2000,” factfinder.census.gov.

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LESSON PLAN

Counting Girls and Boys in the USA: A First Look at Census Data

Learning Goal

To introduce some of the basic concepts in counting and categorizing that are associated with the U.S. Census.

Objective

To calculate the population of men, women, boys, and girls in the United States in 2000 using symbols, graphs, and counts.

Standards

Relating the Ten Themes of Social Studies Curriculum Standards to the U.S. Census:

- ❶ **CULTURE**—the Census attempts to account for some ethnic characteristics
- ❷ **TIME, CONTINUITY, AND CHANGE**—the Census is conducted every decade, plotting demographic changes over time
- ❸ **PEOPLE, PLACES, AND ENVIRONMENTS**—the data show the number of people who live in each state, city, and town
- ❹ **INDIVIDUAL DEVELOPMENT AND IDENTITY**—the data are recorded and reported in various categories
- ❺ **INDIVIDUALS, GROUPS, AND INSTITUTIONS**—the data are used by all sorts of groups and institutions, including governments

Curricular Integration

Social Studies—Discuss U.S. Census purposes, processes, and related vocabulary; as well as civic responsibility.

Children's Literature—Integrate many different selections of fiction and nonfiction literature (as listed below) so that students can read silently and independently, listen as the teacher reads the text aloud, and/or can reference as a resource for projects.

Math—Create a graph and calculate ratios, percents, and proportions.

Children Literature

- Grodin, Elissa. *Everyone Counts: A Citizens' Number Book*. Farmington Hills, MI: Sleeping Bear Press. 2006.
- Scillian, David. *One Nation: America By The Numbers*. Farmington Hills, MI: Gale Cengage. 2004.
- Smith, David J. *If the World Were a Village: A Book about the World's People*. Tonawanda, NY: Kids Can Press. 2002.
- _____. *If America Were a Village: A Book about the People of the United States*. Tonawanda, NY: Kids Can Press. 2009.
- Strauss, Rochelle and Woods, Rosemary. *One Well: The Story of Water on Earth*. Tonawanda, NY: Kids Can Press. 2007.

Materials

- Handouts for this lesson (two bar graph grids and an assessment) comprise the Pullout for this issue of *SSYL*.
- 5 small clear plastic jars
- 150 one-inch squares cut from laminated, colored paper in: red, yellow, green, and purple
- 5 box lids (from a box of reams of copy paper)
- 4 large circles (2-foot circumference) cut from butcher block paper, labeled as indicated in step #4 below
- 5 sets of 4 markers or crayons of red, yellow, green, and purple
- 1 large map of the United States
- 1 large state map of your state
- Vocabulary sheet

Vocabulary

analyze	million
bar graph	percentage
billion	population
calculate	prediction
census	proportion
century	purpose
cultural characteristics	ratio
data	record
decade	representation
decimals	respect
fractions	survey

Preparation

1. Post a large sheet with the vocabulary words (or a portion of the list) printed on it. Refer to it occasionally as you work through the steps.
2. Post four large circles cut from butcher paper, with one of these titles written on each:

- | | |
|----------------------|-------------------------------|
| a. What do you Know? | b. What do you Want to Learn? |
| c. How do you Know? | d. What did you Learn? |

In each circle, draw two horizontal lines, dividing the circle into thirds. All four questions should have one key letter (K in Know, W in Want, H in How, and L in Learn) underlined or highlighted so learners recognize the KWHL sequence.

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3. Place in each of five jars some colored paper squares in the following amounts:

	Red	Yellow	Green	Purple
Jar 1	22	24	28	26
Jar 2	25	21	28	26
Jar 3	31	29	19	21
Jar 4	27	23	24	26
Jar 5	19	25	27	29

4. Prepare five envelopes with "YEAR 2000 U.S. CENSUS" written on the front. Each envelope has the same contents, containing colored paper squares in the following amounts

Red	Yellow	Green	Purple
10	11	4	4

Procedures: Day One

1. Place students into five groups of approximately the same size.
2. Ask students, "How many people live in the United States? How do we know? Who does the counting?" Record some responses in the top third of circle (a) "What do you Know?" Tell students that today they will learn some things about showing population counts on a graph, and what the U.S. Census does.
3. Give one jar, one box lid, one blank bar graph (Handout 1), and one set of four markers to each of the groups.
4. Ask student to look at their jars and estimate how many squares they think are in the jar, and what they think the squares might represent.
5. After receiving several guesses, tell students there are 100 squares in each jar, and the squares represent the number of people living in a town. **Red** squares represent men, **yellow** squares represent women, **green** squares represent boys ages 18 and younger, and **purple** squares represent girls ages 18 and younger.
6. Ask students what they could do with the squares once they take them out of the jars. Is there a way to display the squares in a useful design? Record some responses in the top third of the circle (b) "What do you Want to Learn?"
7. Explain that these squares represent the populations of five different fictitious towns with populations of 10,000 people

living in each town. Identify a town (or city ward) with a similar population most of the students readily recognize and point to it on your state map. Continue explaining that each square represents 100 people in the town. This relationship is called "a ratio of **1 square = 100 people**." Relate the concept of ratios to percentages and proportions, if students have learned these concepts.

8. Instruct students to sort the squares by color, and inform them of the color key (red = men, etc.). Ask if there is a way to quickly compare the size of each group: men, women, boys, and girls. Record students' responses in the top third of the circle (c) "How do you Know?"
9. Instruct students to work with the colored squares. They can pour the squares out of the jar into the box lid for their group. They can sort their squares into groups according to colors, stack them up, and count the number of squares in each colored "bar" in their "bar graph."
10. Students can now record these numbers more permanently on a blank bar graph, coloring in squares to form bars (see **HANDOUT 1**). Review the title of the graph and the labels along the X- and Y-axes. Ask students, "What does the phrase 'Multiply by 100' mean at the top of the graph?" Record the correct answer in circle (d) "What did you Learn?"
11. When all five groups are finished, ask students to share their completed charts with the class to compare and contrast the populations of the five towns. Record interesting comments in circle (d) "What did you Learn?"
12. Review the processes so far and revisit the vocabulary.

Procedures: Day Two

13. On day two, divide the students into five groups, and give each a U.S. CENSUS envelope. Inform the class that they will do a similar activity, repeating the process of counting and graphing a new set of data. However, in these envelopes, there will be fewer squares, but each square will represent many more people—10 million people per square. These squares approximate the number of people living in the USA in 2000, rounded to the nearest 10 million. In 2000, there were about 101 million men (18 years and over), 108 million women, 37 million boys (under 18 years old) and 35 million girls living in the United States. (Table QT-P1, "Age Groups and Sex: 2000," factfinder.census.gov.)
14. Again, instruct students to work with the colored squares. They can pour the squares out of the jar into the box lid for their group. They can sort their squares into groups according to colors, stack them up, and count the number of squares in

each colored “bar” in their “bar graph.” Can students use the ratio 1 square = 10 million people to determine how many men, women, boys, and girls were living in the United States in 2000? Record their comments in circle (d) “What did you Learn?”

15. Students can now record these numbers more permanently on a blank bar graph, coloring in squares to form bars (see **HANDOUT 2**). Review the title of the graph and the labels along the X- and Y-axes. Ask students, “What does the phrase ‘Multiply by 10 million’ mean at the top of the graph?” (Record the correct answer in circle (d) “What did you Learn?”)
16. Tell students that an agency of the federal government, the U.S. Census Bureau, works hard to count every person in the United States. This task is required in the U.S. Constitution. There is a census every ten years or every decade ending in the number 0 (1990, 2000, 2010, etc.) When will the next census occur? How old will students be then?
17. Display a map of the United States. As a review, ask students what they know about the U.S. government counting everybody in the United States. Why it might be helpful to count everybody? Record some responses in the middle third of circle (a) “What do you Know?”
18. Ask students what kinds of information would be useful for us to know about all of the people in our country. Record some responses in the middle third of circle (b) “What do you Want to Learn?” Then, ask students how the U.S. government might be able to gather information about everybody in the United States. Record some responses in the middle third of the circle (c) “How do you Know?”
19. Finally, ask the class why it is important for us to conduct counts like this one. What do the counts help us know. Record some responses in the middle third of circle (d) “What did you Learn?” Emphasize the importance of showing respect for all cultural characteristics used as criteria on the U.S. Census such as race, gender, income, and so forth.

Procedures: Day Three

20. Provide students with a copy of the ten questions in the 2010 Census (see page 6). Provide some background information from the U.S. Census in the Schools website.
21. Students should know that the Census Bureau also conducts a survey every year using a sample of the population (see page 5 in *SSYL*). The annual American Community Survey (ACS) reaches out to about 2.5 percent of the U.S. population, whereas the decadal census aims to count every single person, as required in the U.S. Constitution. In 2006, the U.S. Census

Bureau announced that the nation had reached a milestone: there were 300 million people living in our country! In 2010, the population is about 309 million.

22. Show the class the book, *If America Were a Village of 100 People*. Explain that the author has calculated many different ratios based on the cultural characteristics used to categorize people. Read aloud pages 1-13.
23. To conclude this lesson, teachers should review the concepts, processes, and vocabulary—and ask students to analyze the feedback recorded in the top and middle thirds of the four large circles. Then the teacher can record the students’ analyses in the lower third of each circle emphasizing the associated vocabulary.
24. Through their analyses, students should realize
 - a. What they already knew (K) about counting the population and the U.S. Census
 - b. What they wanted (W) to learn assessing if they discovered the answers to their inquiries.
 - c. How (H) they learned their new discoveries. This portion of the discussion provides the opportunities to review vocabulary and the integration with math.
 - d. What they still want to learn (L) so the teacher can extend the upcoming lessons to match their inquiries.
25. At any time, students can try some of the activities at the Census in Schools website. The class can discuss various issues as news of the 2010 Census appears in the papers. During the morning opening and classroom meetings, students can be updated on the U.S. Census increasing their awareness of authentic civic activities in their community and country.

Assessment

Distribute the list of questions shown in **HANDOUT 3**. These questions can be modified to meet the teachers’ and students’ needs and interests.

See the Pullout in this issue of *SSYL*, which accompanies this lesson. 