



Managing Data

CREATE YOUR OWN FORM

★ Grades 5-6



Skills and Objectives:

- Students will gather and organize data using a “mock” census form.
- Students will determine mean, mode, range, and median for sets of data.

Suggested Groupings:

Small groups

Materials:

Index cards or notebook paper

Getting Started:

1. Students may be familiar with finding the mean, range, and median; they may not understand the ways in which these statistics are used to describe a set of data. Mean, median, and mode are types of statistics known as *measures of central tendency*. Range is a *measure of data dispersion*.

The Census Bureau uses such measures to describe some of the data it collects about the United States. Depending on what is being studied, different researchers may find one measure more useful than another. Median income, for example, may provide economists with a better picture of what a person “in the middle” earns than mean income, which can be distorted by large ranges and unequal distribution.

2. The day before your class does this activity, explain to students that they will be conducting a class census. To do this, they will be collecting information from their own households.

- Your class census will include two questions.
 1. How many people live in your household?
 2. What are their ages?
- Have students write each question on an index card or a sheet of paper, leaving room for answers. Instruct students to take their “census form(s)” home, ask family members (including themselves) each question, and record the answers on the cards or paper.

Using the Activity Worksheets:

1. Make copies of the Lesson 5 Activity Worksheets (pages 16 and 17).

Chalkboard Definitions

mean: the average of a set of numbers.

median: the middle number (or the average of the two middle numbers) in a set of numbers.

mode: the number that appears most often in a set of numbers.

range: the difference between the greatest number and the least number in a set of numbers.

addend: any number that is added to another to form a sum.

2. Divide your class into small groups (no more than 6). Give each group one copy of each worksheet and a pile of index cards.

- Groups will use their worksheets to develop their own household statistics.

Wrapping Up:

1. Compare group results to national figures (refer to the Census Facts box on page 16). Statistics will vary, but students should be able to explain their work.

- **Why might the mean household size for your group be higher than the national mean?** (*All student households include at least one child and one adult. The national mean includes many households made up of a single adult.*)

- Make sure students understand that there can be more than one mode if two or more numbers show up an equal number of times in a set.

- **Why might the median age for your group be lower than the national median?** (*Again, all student households include at least one child. The national median age includes a segment of the population that doesn't have children.*)

2. Photocopy the Selected Census 2000 Short Form Questions on page 21 and distribute them to your class, explaining to students that these are some examples of the actual census questions.

Extension Activity:

Have students visit the U.S. Census Bureau Web site (www.census.gov) to get updated statistics on mean household size and median age. How do those data compare with the class' statistics? Have students choose other questions they could ask, then collect data and compile statistics based upon the answers.





Name: _____

Create Your Own Form

The U.S. Census Bureau will use the data gathered in Census 2000 to develop statistics that tell us more about our country. Some of the statistics the U.S. Census Bureau might use are: **mean** (or average), **mode**, **range**, and **median**.

The Census Facts box (right) gives you two of these statistics. Read the Census Facts box. Then work with your group to develop your own census-style statistics. Follow the directions below.

CENSUS FACTS

- The **mean** (or average) number of people in a U.S. household was **2.63** in 1990.
- The **median** age of people in the United States in 1990 was **33**.

MEAN

The **mean** is the average of all the numbers in a set of numbers. Follow these steps to find the mean number of people in your group's households:

1. Write down the number of people in your household on a card. Have a group member collect the cards and list all the numbers.
2. Add all the numbers, then divide the sum by the number of addends. (In this case, the total number of households in your group.) If necessary, round your answer to the hundredths place. This number is the mean number of people per household for your group.
3. Write the mean here: _____
4. Compare this mean to the national mean listed above. Is the mean for your group higher or lower than the national mean from the 1990 Census? _____

MODE

The **mode** is the number that occurs most often in a group of numbers. There can be more than one mode. Find the mode of the ages of household members in your group. Here's how:

1. Write down the age of each person in your household on a separate index card.
2. Have a group member collect the cards and sort them by age. Make a stack for each age.
3. Which stack (or stacks) has the most index cards? That age (or ages) is your group mode.
4. Write the mode here: _____



Name: _____

Create Your Own Form (continued)

RANGE

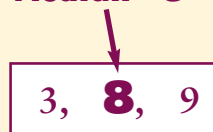
Range is the difference between the greatest number and the least number in a set of numbers. Find the range of age for household members in your group. Here's how:

1. Take the age index cards you used for finding the mode, and order them from least to greatest.
2. What is the youngest age? _____
3. What is the oldest age? _____
4. Subtract answer 2 from answer 3. This is your range.
5. Write your range here. _____

MEDIAN

The **median** is the middle number in a set of numbers. If there is an even number of numbers, the median is the mean of the two middle numbers. To figure out the median age of people in your group's household, follow these steps:

1. Use the same index cards as above, still ordered from least to greatest.
2. Find the middle number or numbers. You might want to remove cards in pairs, one from each end, until only one number is left. If two numbers are left, find the mean of the two.
3. What is the median age of your group's household members? _____
4. Compare your group's median age to the national median age in the Census Facts box. Is yours higher or lower than the national median age? By how much?

Median = 8**Median = 10**

Compare the statistics your group gathered with those gathered by other groups.

Selected Census 2000 Short Form Questions

1. What is this person's sex?

- Male
- Female

2. What is this person's age and date of birth? (Print numbers in boxes)

Age on April 1, 2000

Month of Birth

Day of Birth

Year of Birth

Note: Please answer BOTH questions 3 and 4.

3. Is this person Spanish/Hispanic/Latino?

- No, not Spanish/Hispanic/Latino
 - Yes, Mexican, Mexican American, Chicano
 - Yes, Puerto Rican
 - Yes, Cuban
 - Yes, other Spanish/Hispanic/Latino — Print group below ↴
-

4. What is this person's race? Mark one or more races to indicate what this person considers himself/herself to be.

- White
 - Black, African American, or Negro
 - American Indian or Alaska Native — Print name of enrolled or principal tribe below ↴
-

- Asian Indian
 - Chinese
 - Filipino
 - Other Asian — Print race below ↴
 - Japanese
 - Korean
 - Vietnamese
-

- Native Hawaiian
 - Guamanian or Chamorro
 - Samoan
 - Other Pacific Islander — Print race below ↴
-

- Some other race — Print race below ↴
-

View the Census 2000 questionnaire on the U.S. Census Bureau Web site (www.census.gov).