Introduction to the American Tour

Objective: To explore data collection, organization, and interpretation.

1 Teaching the Lesson

Key Concepts and Skills
- Use collected data to make predictions.
  [Data and Chance Goal 2]
- Use census data to estimate percentages.
  [Data and Chance Goal 2]
- Express probability as a percent, decimal, or fraction.
  [Data and Chance Goal 4]

Key Activities
Students identify data organized in text, tables, maps, and graphs for the American Tour. Students read and answer questions about the U.S. Census; complete abbreviated forms for a classroom census; and post the results on the Probability Meter.

Ongoing Assessment:
Recognizing Student Achievement
Use Mental Math and Reflexes.
[Number and Numeration Goal 1]

Key Vocabulary
census

Materials
Math Journal 1, p. 60
Student Reference Book, pp. 338–395
Math Masters, p. 67
Probability Meter Poster ◆ stick-on notes

2 Ongoing Learning & Practice

Playing High Number Toss: Decimal Version
Student Reference Book, pp. 32, 33, and 321
Math Masters, p. 511
per partnership: 4 each of number cards 0–9 (from the Everything Math Deck, if available)
Students practice reading, writing, and comparing decimals.

Math Boxes 3-1
Math Journal 1, p. 61
Students practice reading, writing, and comparing decimals.

Study Link 3-1
Math Masters, p. 68
Students practice and maintain skills through Study Link activities.

3 Differentiation Options

READINESS
Reading for Information
Student Reference Book, p. 361
Math Masters, p. 69
Students practice reading text, tables, charts, and graphs.

ENRICHMENT
Analyzing Data
Math Masters, pp. 70 and 71
Students interpret a table of data taken from the U.S. Census.

Advance Preparation
Set up a display area for the American Tour project and other data, particularly those that relate to, or are from, your social studies curriculum. If possible, provide additional reference materials, such as almanacs, maps, and historical atlases. For the activity in Part 1, provide a collection box or other receptacle for the completed census forms.

Teacher's Reference Manual, Grades 4–6 pp. 13, 14
Math Message

Use information from the Student Reference Book, page 369, to answer the following questions:

What is the U.S. Census, and why is it important?

Getting Started

Mental Math and Reflexes

Use your established slate procedures for the following problems. Continue as time allows. Suggestions:

🌟 Write 497,128. Circle the ones digit. Underline the hundreds digit. 497,128

🌟 Write 162,307. Circle the thousands digit. Underline the tens digit. 162,307

🌟 Write 15,024,367. Circle the ten-thousands digit. Underline the millions digit. 15,024,367

🌟 Write 357,054,104. Circle the hundred-thousands digit. Underline the million-digits. 357,054,104

🌟 Write 435,180,241. Circle the ten-millions digit. Underline the thousands digit. 435,180,241

Ongoing Assessment: Recognizing Student Achievement

Use the Mental Math and Reflexes problems in levels 🌟🌟 and 🌟🌟 to assess students’ ability to read and write large whole numbers. Students are making adequate progress if they write the numbers and identify the digits correctly. Some students may be successful with the problems in level 🌟🌟🌟. (Number and Numeration Goal 1)

Teaching the Lesson

Math Message Follow-Up

Social Studies Link

Survey the class for true statements they can make about the U.S. Census. If it is not presented, ask volunteers to define the word census. To support English language learners, write the key ideas on the board or Class Data Pad. Sample answers: A census is a count or list, one-by-one, of every member of a population; a census may also be used to collect information about the population, such as age and occupation. Explain that in order to meaningfully interpret data, such as census information, it is necessary to understand how the data are organized.

The U.S. Decennial Census

What is it?

A census is a count of a nation’s population. Other information is also collected at the same time as the people are counted. The word census comes from the Latin word meaning “to see,” or “to view.” The U.S. Census is called decennial because it is taken every 10 years.

How Do We Take It?

Since 1790, many census forms have been sent out and returned by mail. Some people are hard to reach by mail or do not respond. Personal visits and phone calls are used to collect information from these people.

Why Do We Take It?

It’s the law. Although many countries throughout history have taken censuses, the United States was the first nation in history to require a regular census in its Constitution.

The following passages are taken from Article I, Section 2 of the U.S. Constitution:

Representatives . . . shall be apportioned [divided up] among the several states which may be included within this union according to their respective numbers.

The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years . . .

Population totals are used to determine how many congressional districts each state will have in the House of Representatives. They are also used to determine how many members each state will have in the Senate. Government offices and private businesses use census information to plan and provide services.

1790 Census

Information was collected on paper. 6 asked 5 questions

Information was collected in people’s homes. It took 10 months to collect information.

Results were tabulated by hand. Many people were difficult to find and count.

2000 Census

Most information was collected by mail. 3 asked 2 questions

Most information was collected by census takers. It took 3 months to collect information.

Results were tabulated by computer. Many people were difficult to find and count.
Examining the American Tour

(Student Reference Book, pp. 338–395)

Social Studies Link

The American Tour section of the Student Reference Book contains information about the history, geography, and population of the United States. Survey the class to identify the ways this data has been organized. Sample answers: In paragraphs with titles and headings, in a variety of maps, in tables, and in different kinds of graphs

Ask volunteers how the table at the bottom of page 369 might be used, as well as the table on pages 374 and 375. Sample answers: To get information about the census in 1790 and in 2000, or to compare the two censuses; to get information about the population of a state or the entire country in different years, or to compare state or U.S. populations in different years

Comparing the 1790 Census with the 2000 Census

(Math Journal 1, p. 60; Student Reference Book, pp. 369, 370, 374, and 375)

Direct students to examine the information in the tables and use it to complete the journal page. Circulate and assist.

Posting U.S. Census Results on the Probability Meter

(Student Reference Book, pp. 345, 346, and 373)

Ask students to estimate (or guess) the following figures as collected in the 2000 census. After each question has been discussed, compare the estimate with the actual percentages. Have volunteers record the actual census results on stick-on notes, writing each figure as a percentage, fraction, and decimal. Then they post the notes on the Probability Meter Poster with a corner pointing to the correct line on the meter. (See margin.)

- The percentage of people living in the United States who were born in a foreign country About 10% of the people in the United States were born in a foreign country.
- The percentage of people who speak a language other than English at home About 18% of the people in the United States speak a language other than English at home.
- The percentage of households that have telephone service About 95% of all households have telephone service.

Ask: What are the chances of a person having a phone? Out of every 100 people, 95 will have a phone. Out of 100 people how many would not have a phone? 5
Ask: Why do you think the census has a question about telephones? Sample answers: Government agencies use this data to assess whether people have access to emergency medical or crime prevention services and as an indicator of the possible social isolation of older people.

Conclude the discussion by explaining that the data from census questions is interpreted and used by various government and community agencies in a variety of ways.

Taking a Classroom Census
(Math Masters, p. 67)

Distribute the copies of Math Masters, page 67. Students will count and collect information about every student in the class. The U.S. Census has two forms—a short form that every household completes and a long form that only a sample of households completes. Point out that the class census form contains questions from the short and long U.S. Census forms. (Questions 1 and 2 are on both forms; Questions 3 to 5 are on the long form only.) Tell students that they do not need to write their names on the forms. Have students deposit completed forms in the collection box.

NOTE Provide a time for any absent students to complete the form when they return.

Ongoing Learning & Practice

Playing High Number Toss: Decimal Version
(Student Reference Book, pp. 32, 33, and 321; Math Masters, p. 511)

High Number Toss: Decimal Version provides students the opportunity to apply their knowledge of place value and standard notation to form, write, read, and compare decimals. Provide students with a reminder box on the board noting that < means is less than and > means is greater than.

After each round, ask students to record the decimals they formed on Math Masters, page 511, and use <, >, and = to compare them. If necessary, refer students to Student Reference Book, pages 32 and 33 to review comparing decimals.
### Math Boxes 3·1
(Math Journal 1, p. 61)

**Mixed Practice** Math Boxes in this lesson are paired with Math Boxes in Lesson 3-3. The skill in Problem 6 previews Unit 4 content.

### Study Link 3·1
(Math Masters, p. 68)

**Home Connection** Students use a table of census information about state populations to answer questions.

#### 3 Differentiation Options

**Readiness**

To explore reading for information, have students answer questions about *Student Reference Book*, page 361. Have students complete this activity as part of the Examining the American Tour section of this lesson. Alternatively, complete the activity prior to the lesson during a class language arts or reading period.

**Reading for Information**
(Student Reference Book, p. 361; Math Masters, p. 69)

To explore reading for information, have students answer questions about *Student Reference Book*, page 361. Have students complete this activity as part of the Examining the American Tour section of this lesson. Alternatively, complete the activity prior to the lesson during a class language arts or reading period.

Review the following elements on the *Student Reference Book* page: heading, *American Tour*; page title, *How Much Schooling Did Students Receive in 1900?*; table, stem-and-leaf display, and graph titles. You might also review topic sentences using the two paragraphs at the top of the page. Encourage students to look up words that they do not remember; for example, *mean* or *median*.

When students have finished the page, have them share the questions they wrote.

**Home Connection** Students use a table of census information about state populations to answer questions.
**ANALYZING DATA**
*(Math Masters, pp. 70 and 71)*

To explore analyzing data, have students answer questions using a census table about income and education levels. Remind students that although they can identify the changes between the data for 1980 and 1990, they cannot consider the pattern of change to be a trend without more data.

**Planning Ahead**

The results from the classroom census should be posted in your American Tour display. Make, or have students make, a table for the display like the one shown below. When all census forms have been collected, have students tabulate and record the results. Only the Number column should be filled in at this time. The Fraction, Decimal, and Percent columns will be filled in later.

<table>
<thead>
<tr>
<th>Classroom Census Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
</tr>
<tr>
<td>Total students in class</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>Born in this state</td>
</tr>
<tr>
<td>Born in another state</td>
</tr>
<tr>
<td>Born in another country</td>
</tr>
<tr>
<td>Speak a language other than English at home</td>
</tr>
<tr>
<td>Have telephone at home</td>
</tr>
</tbody>
</table>

1. **Reading for Information**
   - **How Much Schooling Did Students Receive in 1900?**
     - **Sample answer:** The average number of days students went to school, by region and by state, in the year 1900.
     - **Guide questions:**
       - Look at the tables and graphs on this page. Which tables or graphs would you use to find the mean number of days in school per student, by region?
       - The table that lists the states by region.
   - **Sample answer:** The average attendance for each state, by region.
   - **Sample answer:** The stem-and-leaf display.
   - **Write three questions that you could answer by reading this page, or by using the tables and charts on this page.**
     - Sample answers: Which region had the highest number of days in school? Which region had the fewest number of states? How many states had 90 to 99 days in school?

2. **Education and Earnings (continued)**
   - **Sample answer:** The more years of school completed, the higher the median income.
   - **Sample answer:** The number of households did not graduate from high school in 1980, and the number of households who did not graduate from high school in 1990 decreased by about 4,400,000.
   - **Sample answer:** The number of households who did not graduate from high school will be about 11,550,000 in 2010.
   - **Sample answer:** In 1990, about half as many householders did not graduate from high school as the number who did graduate from college.
High-Number Toss: Decimal Version Record Sheet

Circle the winning number for each round. Fill in the Score column each time you have the winning number.

Player 1 ___________________________  Player 2 ___________________________
(Name)                                  (Name)

<table>
<thead>
<tr>
<th>Round</th>
<th>Player 1</th>
<th>&lt;=, &gt;=</th>
<th>Player 2</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>0.6 5 4</td>
<td>&lt;</td>
<td>0.7 5 3</td>
<td>-0.654&lt;br&gt;0.099</td>
</tr>
<tr>
<td>1</td>
<td>0. __ ____</td>
<td></td>
<td>0. __ ____</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0. __ ____</td>
<td></td>
<td>0. __ ____</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0. __ ____</td>
<td></td>
<td>0. __ ____</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0. __ ____</td>
<td></td>
<td>0. __ ____</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0. __ ____</td>
<td></td>
<td>0. __ ____</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Score</td>
</tr>
</tbody>
</table>