2006
Count Yourself In!
May 16, 2006

Activity 2:
Add! Don't Subtract! —
A Complete Count

Suggested Level: **Elementary**
Subjects: **Mathematics, Social Studies, Geography**

Overview

This activity shows students how the answers to the census are useful in decision making when they are totalled and associated with geographic areas.

Students will engage in activities which use a neighbourhood map, summarize data about persons in households, and make decisions based on the results of their calculations. (2 class periods)

Note: See the **Teacher's Guide** for general background on the census and census vocabulary.

Learning Objectives

- Define the term census.

- Summarize and verify a set of data.

- Use a simple model to make a decision.

- See how important decisions are affected when census information is not complete.

- Describe how people depend upon each other by seeing how the individual behaviour of some can affect everyone.

Vocabulary

Census, dwelling, population

Materials

- Teacher's Guide

- Handout 1: *Map of Centreville Neighbourhood*

- Handout 2: *Counting a Centreville Neighbourhood*

- Red pencils/markers (not included)

Getting Started

1. Introduce this activity by having a discussion of the vocabulary. Tell the students that they are going to be learning some important words. Begin with the word *census*. Ask the students if they know the meaning of this word.

2. Tell the students that a census takes place every five years in Canada. Ask them if they know when the next census will take place. As a follow-up question, ask why a census is taken every five years in Canada. (ANSWERS: May 16, 2006; to provide accurate and up-to-date information.)

Statistics Canada   Statistique Canada

Canada

3. Explain the words *population* and *dwelling*. Ask the students why these are important words to know. Tell them that these words describe what is counted in a census. The census also collects information about people (such as age and sex).

4. Tell the students that they will see how census totals are used in making decisions.

Census Activity

1. Distribute Handout 1: *Map of Centreville Neighbourhood*. Go over the map with the students so that there is no confusion about the different shapes and their meanings.

2. Present the following story to the class:

   The mayor of Centreville wants to build a new park in the vacant block in the centre of your map. The park would be used by people in the surrounding neighbourhood. The mayor has posed this question: Is at least one-half of the population of the neighbourhood children and seniors? If yes, she would propose building the park. If no, she would agree to build a shopping mall for adults.

   You are the town planner. The mayor has given you a table that shows results from the census describing the ages of people in the neighbourhood. She has asked you to help her decide whether or not to build the park.

3. Distribute Handout 2: *Counting a Centreville Neighbourhood*. Tell the students that they will be totalling the numbers of children, adults and senior citizens living in Houses A to T.

4. Familiarize the students with the table. Emphasize that in order for the mayor to make her decision, the information must be totalled. A decision cannot be made just by looking at the information about the people in the neighbourhood.

5. Have the students calculate the total number of people in each house by adding across each row. Next, ask them to determine the total population of the neighbourhood by adding down the column titled *Total Number of People in Each House* (Answer: 55).

   Have students calculate the totals for each of the columns marked *Children, Adults, Senior Citizens* (Answers: 20, 25, 10). Have them write in their answers at the bottom of each column.

   Have the students cross-check their calculations by adding the total of the three columns together. The sum should equal the figure for the total number of people in the neighbourhood.

6. Ask the students which of their totals will answer the mayor's question. Ask them how they will arrive at their answer.

   The students only need to use the figures in the columns *Children* (20), *Senior Citizens* (10) and *Total Number of People in the Neighbourhood* (55). The question they must answer is: Are the number of children plus the number of senior citizens greater than or equal to one-half the total number of people in the neighbourhood, or is 20 + 10 equal to or greater than 55 divided by 2? The answer is yes. The park can be built on the centre block of the map.

Now Take Away Some of the Data

7. Explain to the students that they are now going to learn what happens when some people are not counted. They will repeat the process in steps 5 and 6, except this time, the census information they have to work with will not be complete.

8. Using the red pencils/markers, have the students put an X over Houses A, D, E, I and M on the map and cross out all the information from these houses on the table of information presented in Handout 1.

   Ask the students to imagine that in the census some people did not fill in their census questionnaires. The people in Houses A and E did not think they had to fill in their forms. The people in Houses D and I did not care about the census and the people in House M refused to return their form.
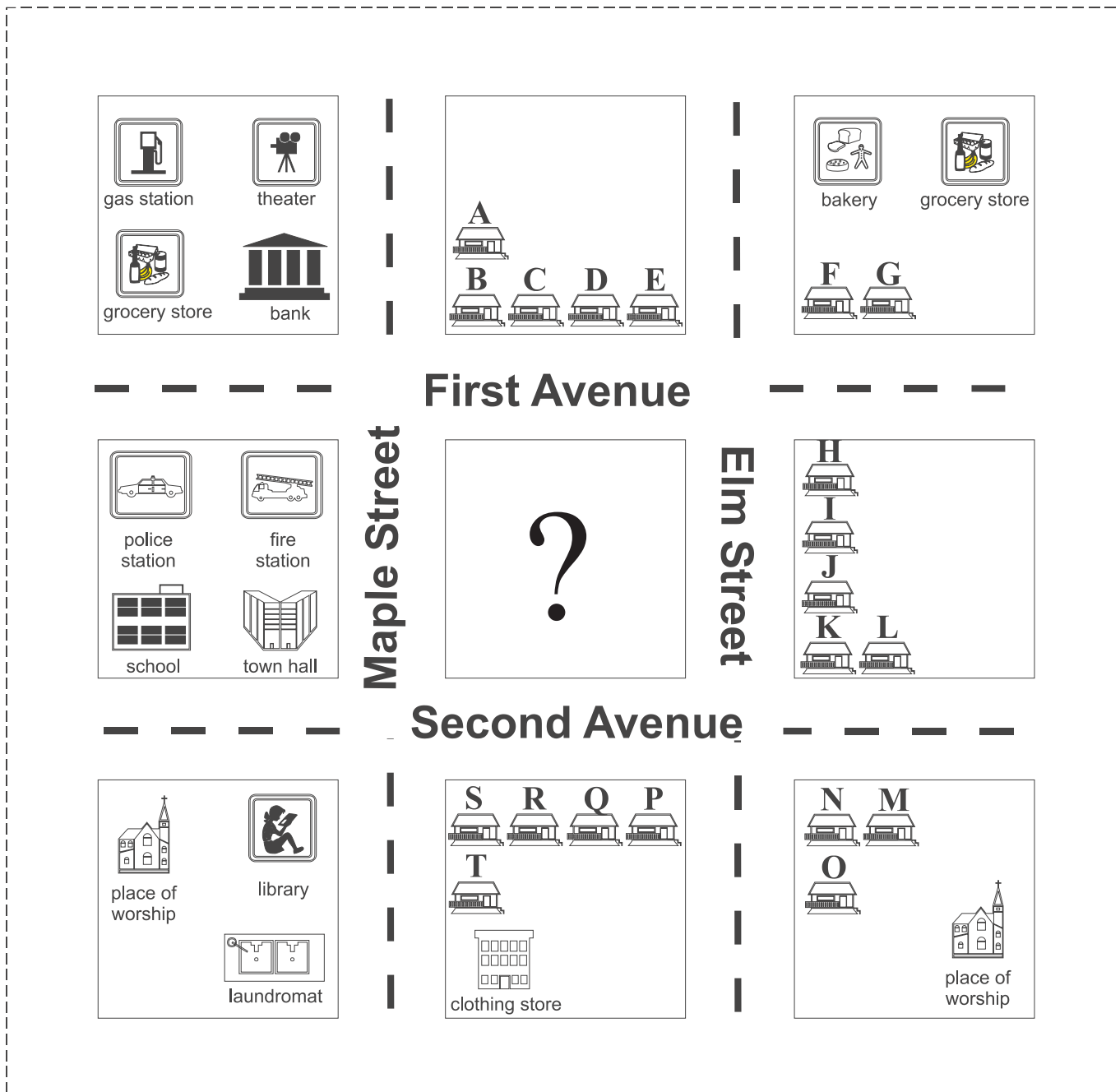
   Because people were left out of the census, the numbers describing the neighbourhood have changed. Ask the students to find out how much the information has changed. Ask them if the changes in information will change the mayor's decision.

9. Have the students repeat the calculations they did for the complete count. The new figures are: children (14), adults (21), senior citizens (5) and total number of people in the neighbourhood (40).

   Now the question is: Is 19 greater than or equal to 20? The answer is no. Because some people were not counted in the census, the mayor will build a shopping mall instead of a park, when in fact the park was needed.

   Discuss with the students how the decisions of a few people who left themselves out of the census affected the whole neighbourhood. See if they can apply the concept to their own community.

Map of Centreville Neighbourhood showing a grid of streets.

Top-left block:
- gas station
- theater
- grocery store
- bank

Top-middle block: houses A, B, C, D, E

Top-right block:
- bakery
- grocery store
- houses F, G

First Avenue

Maple Street

Middle-left block:
- police station
- fire station
- school
- town hall

Middle-centre block: **?**

Elm Street

Middle-right block: houses H, I, J, K, L

Second Avenue

Bottom-left block:
- place of worship
- library
- laundromat

Bottom-middle block: houses S, R, Q, P, T; clothing store

Bottom-right block: houses N, M, O; place of worship

	Number of:			Total Number of People in Each House
	Children	**Adults**	**Senior Citizens**	
House A	0	0	3	
House B	0	1	0	
House C	3	1	1	
House D	3	2	0	
House E	0	1	0	
House F	0	2	0	
House G	3	2	0	
House H	1	1	0	
House I	2	1	0	
House J	0	1	1	
House K	2	3	0	
House L	0	2	1	
House M	1	0	2	
House N	3	2	0	
House O	0	0	0	
House P	0	1	0	
House Q	1	1	0	
House R	1	1	1	
House S	0	2	0	
House T	+ 0	+ 1	+ 1	
Total People By Age				
				Total People in the Neighbourhood