Count Yourself In!
May 16, 2006

Activity 3: Important Decisions Don't Just Happen! Using Data to Plan Your Services

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

Overview

This activity gives students hands-on experience with census data, introduces them to data for small geographic areas, refines decision-making skills and demonstrates some of the actual uses of census data.

Accordingly, students will examine sets of imaginary data associated with several community services, decide which neighbourhoods would benefit most from each service, and illustrate their findings on a grid map. (1-2 class periods)

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

Learning Objectives

- Interpret a statistical table and a grid map.
- Sort and rank numeric values.
- Graphically display information on a grid map.
- Name at least one piece of information collected in a census.

Vocabulary

Census, census data, grid

Materials

- Teacher's Guide
- Handout 1: *Important Decisions Don't Just Happen!*
- Transparency of Handout 1 and coloured markers (not included)

Getting Started

1. Ask your students to imagine that they are the advisors to the town council in a community where three-quarters of the families have children younger than six years. What do they think would be the special concerns of residents in this community?

   Ask your students what special services they would advise the town council to include in its plans. The answers will vary but will probably include schools, day-care centres, playgrounds, libraries and health centres.

   Have students explain their recommendations. Point out that their decisions were influenced by the number of families with young children.

2. Explain to the students that real-life decisions also require this type of statistical data. The Census of Canada is an important source of such data. The census is conducted by Statistics Canada every five years and the next census will take place on May 16, 2006.

Spend time discussing the upcoming census with the class, especially how census data are used in the everyday life of the community. Census data are used at the local, provincial and federal government levels as well as by community organizations, businesses and individuals. (See Teacher's Guide, pp. 6-7)

3. Tell the students that they are going to have a chance to make some decisions for another imaginary community using the type of data that is produced in a census.

Census Activity

1. Distribute the **handout** and have a student read aloud for the class the three paragraphs under the first question: *How many school-aged children are there in your community?*

2. Explain to the students that they are going to be researchers at Data-R-Us. Their task will be to select the best neighbourhood in the town of Petunia for some new community services.

3. The length of this activity may warrant conducting part of it aloud. You may also want to take the students through the tables.

   It helps to copy **Table 2** and the **map** with its legend on the chalkboard or on overhead transparencies.

   Students could link the patterns in the legend with the numbers selected from Table 2 by using different coloured markers.

4. This exercise lends itself to group work. Divide the class into groups of three to five students and have them determine where to locate the services on the map.

Note: The selection of the medical centre area is both the hardest and the easiest for the students to locate. They must look for high numbers in two table categories (*People - 15 years and under* and *People - 65 years and over)* at the same time. By solving the playground and seniors' centre sections of the exercise and overlapping the patterns where appropriate, the medical centre area magically appears.

5. Once your students have correctly identified the best group of neighbourhoods for each service, ask them to pinpoint (within that group) where the service should be located (using the letters A to D and a solid line for the bus route).

   The location should be the spot that makes the service most accessible to all the people in the selected group of neighbourhoods. These locations have been identified for you on the answer sheet's map (p. 3).

Extension/Enrichment

1. Have your students discuss other census data that would be important in researching the best location for these services. Of course not all other important data are necessarily census-related. Availability of land, land prices in the community, existing street patterns and the present locations of similar services will be considered in the selection of a site.

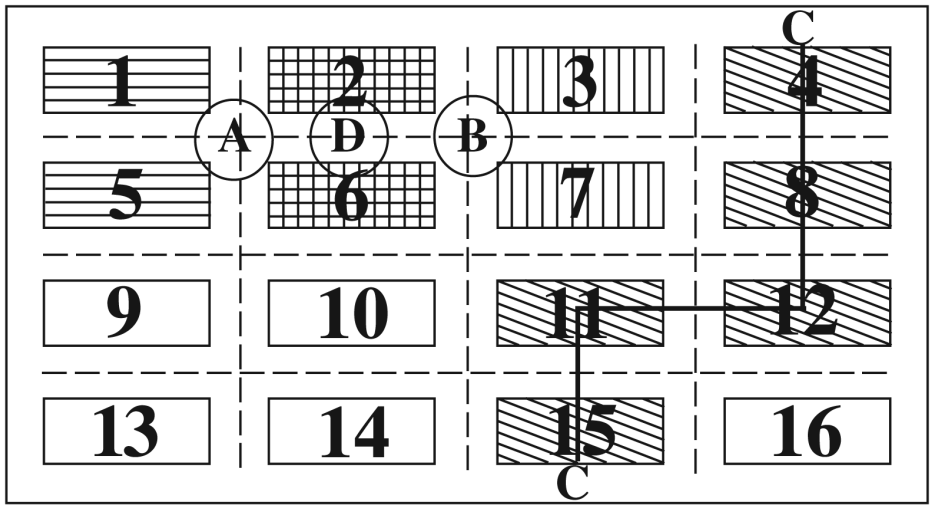
2. Ask your students to visit the Statistics Canada Web site (www.statcan.ca) and research census data on the age distribution of their own community and province under the "Community Profiles" button. Then, have the students report on any new services that have become established. Why are these new services located where they are? Municipal offices, chambers of commerce and provincial development agencies are good sources of current information. Local businesses that have moved away or that have not succeeded could also be investigated.

TABLE 2: CENSUS DATA

Neighbourhood	(Playground) People - 15 years and under	(Seniors' Centre) People - 65 years and over	(Bus Routes) Total Population
1	**175***	79	334
2	**170***	**190***	450
3	5	**250***	312
4	95	145	**520***
5	**171***	94	470
6	**150***	**201***	440
7	65	**220***	335
8	84	98	**522***
9	20	100	207
10	27	5	171
11	90	78	**568***
12	75	43	**608***
13	17	76	192
14	15	22	169
15	120	11	**632***
16	20	1	163

* highest number of people in each category

Census Map of Petunia



Legend - Best Locations

playground (A)

seniors' centre (B)

bus route (C)

medical centre (D)

How many school-aged children are there in your community?

Your community is growing and more young families are moving in. Are there enough schools to look after the extra children, or should your school board think about building more?

This kind of decision is made every day using census data. Decisions can be made by guessing; sometimes the guess would be right but more often it would be wrong.

In today's world, millions of dollars can be lost on a guess. That's why people need facts to make decisions. For example, retail businesses use data, to help choose new locations or add new products. More and more often they turn to data that have been gathered by the census.

What if you wanted to find a location for a sailboard store?

Your choices are: Vancouver, British Columbia; Montreal, Quebec; or Toronto, Ontario. How would you choose? You would want to find out which city has the most days that are sunny, the best winds, and available waterfront. And once you have chosen the city, what spot would you pick for your store? Who buys sailboards anyway?

The following exercise asks you to make some choices.

In your job at Data-R-Us, you help clients make decisions using census data. Your boss comes into your office with requests from two clients who want to find the best location in Petunia for some new services. You have the job of researching the best areas in the city for each service.

The first request is from the town council, which has been given money to build a new playground and a new seniors' centre. As well, the council has the money to buy a new bus and start a new bus route.

The second request comes from the Get Well Medical Clinic. This company wants to expand into Petunia and is looking for a location close to large numbers of children and seniors.

Imagine that you have looked at the census report on Petunia and have picked the data that best describe the people who will use the services. **Table 1** is the result of this effort. Take a moment to study the table.

TABLE 1

Service	Who needs the service	Census Data
playground	children	people - 15 years and under
seniors' centre	seniors	people - 65 years and over
new bus route	workers	total population
medical centre	children and seniors	people - 15 years and under people - 65 years and over

You have census data for different parts of Petunia. The city is divided into 16 parts or neighbourhoods. They are numbered 1 through 16. You also have a **census map** of the city showing you where the 16 neighbourhoods are located.

Imagine that you have now made a second table from the census report on Petunia.

On this table you have listed census data for each of Petunia's 16 neighbourhoods. For each neighbourhood you have listed ONLY the census

data you felt were needed to help the town council and the Get Well Medical Clinic set up their new services. **Table 2** is the result of this effort.

For your research you decided that the best location for each service would be determined by finding the neighbourhoods with the largest number of people who need the service.

TABLE 2: CENSUS FACTS

Neighbourhood	People - 15 years and under	People - 65 years and over	Total Population
1	175	79	334
2	170	190	450
3	5	250	312
4	95	145	520
5	171	94	470
6	150	201	440
7	65	220	335
8	84	98	522
9	20	100	207
10	27	5	171
11	90	78	568
12	75	43	608
13	17	76	192
14	15	22	169
15	120	11	632
16	20	1	163

For example, Table 1 tells you that children need the playground. By looking at the *People - 15 years and under* column in Table 2, you will see that Neighbourhood 1 has the most children. Neighbourhood 1 will be one of the best locations for the playground.

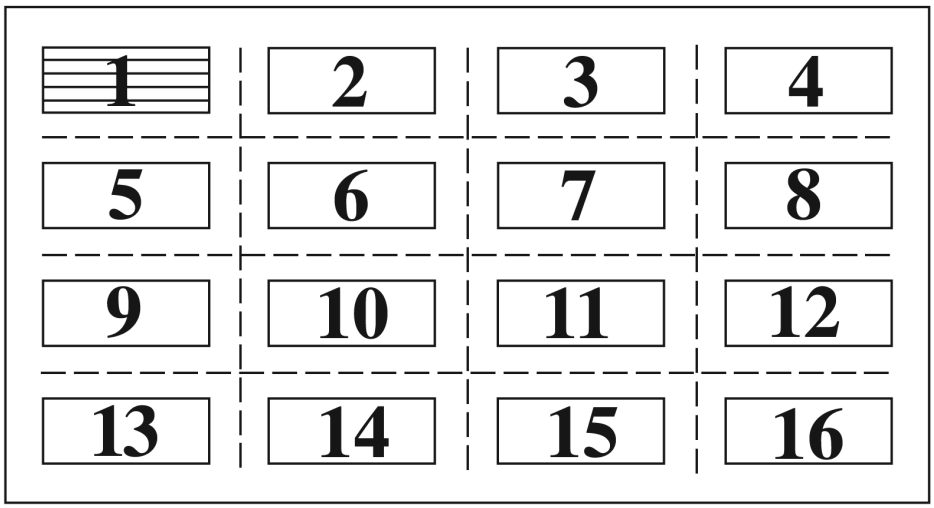
Once you have decided which neighbourhoods a service should be located in, mark them on the census map. Do this by filling in the squares for each neighbourhood with the pattern for the service. (The patterns for each service are shown in the legend.) Neighbourhood 1, one of the choices for locating the playground, has already been marked for you.

Now find the next best neighbourhood for a playground. Mark it on the census map. Complete your job of finding the best locations for the remaining services using Table 1, Table 2, and the map.

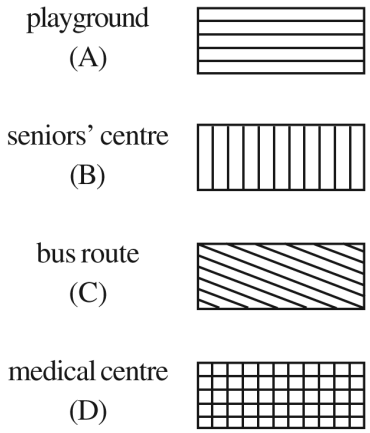
In addition to the **two** best neighbourhoods for the playground, you must find:

- the **two** best neighbourhoods for the seniors' centre
- the **five** best neighbourhoods for the bus route
- the **two** best neighbourhoods for the medical centre.

Census Map of Petunia



Legend - Best Locations



Census Day: May 16, 2006

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