



Activity 7: That's easy for you to say! — survey project

Suggested level: **senior**

Subjects: **mathematics, social studies, data management**

Overview

This activity uses hands-on experience to demonstrate many aspects of planning, conducting and reporting the results of a survey.

Students will learn what goes into the production of statistical information, how individual responses on a questionnaire are merged to create summary data, and how the summarized information is used.

This activity could take the form of a full count of the student body. If this is too ambitious, a small survey or an opinion poll of a sample of the student population or specific class may be more appropriate. Use topics of interest to students and teachers.

Since the census takes place in May 2011, schedule the completion of this activity or parts of it (data collection) in May. If you intend to have the students conduct a survey or census, remember to allow yourself enough lead time.

Duration

Two or three class periods if students use the prepared questionnaire in **Handout 2**.

or

Four or five class periods if students create their own survey using the information provided in **Handout 1**. This would include:

- two class periods before conducting the survey;
- one period collecting the data; and
- one or two periods after collecting the data.

(Times will vary with the complexity of the questionnaire and the size of the group surveyed.)

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

Learning objectives

- Understand the stages of designing, conducting and processing a survey.
- Learn how to design, conduct, process and report on a survey.
- Learn how to write a report analysing the results of a survey.
- Learn how to work as a team to reach mutually agreed decisions and to resolve issues.

Vocabulary

census, complete count, confidentiality, data, enumeration, questionnaire, sample, survey, undercount



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Materials

- **Teacher's Guide**
- **Handout 1:** That's easy for you to say!
- **Handout 2:** Student survey on future plans

Getting started

1. Ask your students to write down what they think the population of Canada was in 2006. Give them a moment to do so and then write the figure on the chalkboard. (Answer: In 2006, the population of Canada was 31,612,897.)
2. Ask several of the students to comment on how their estimates compared to the actual figure.
3. Ask students how they think the 2006 population figure for Canada was determined. (Answer: Every five years Statistics Canada conducts a census — a complete count of the country's population.)
4. Ask the class to concentrate again on the 2006 population figure. Ask them to estimate the time it took to produce this figure. Now distribute **Handout 1** for all to read.

Note: The 2006 Census took place in May 2006. The population counts were available in March 2007.

Census activity

1. Discuss the stages of the survey process listed on **Handout 1**. You may wish to show a flow chart such as the one below, listing the questions from the handout underneath each stage.

Define → Design → Collect → Process → Report

2. This is the point at which the class should decide whether they want to plan and conduct their own survey or use the questionnaire in **Handout 2**. If the class decides to use the prepared questionnaire in **Handout 2**, continue with the rest of item 2 and end the lesson. If the class decides to create their own survey, skip to item 3.

(a) Distribute **Handout 2:** Student survey on future plans.

(b) Before students answer the prepared questionnaire, have them discuss how they will tabulate their results and what they will want to report. Ask them to consider what summary information they would like to analyse and what their tables (columns, rows, etc.) will look like.

Ask students to identify interesting questions that summary data could answer. For example: "Do male and female students in the class have the same career goals?" To answer this question they must be able to cross-tabulate question 2 with question 7. This can be a long job if the tabulating is done by hand. Manual tallying may limit them to looking at the simple frequencies for single questions, such as "How many



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hours did you spend last week working for pay." Access to a computer will provide greater flexibility.

(c) Have the students answer the prepared questionnaire. Ask the class to follow through on their processing and reporting strategies for **Handout 2**.

(d) The class may wish to conduct the same survey with a larger group to learn how the data compare with the whole grade or the whole school. How students process the data, what they report, and how much time they have will dictate the response here.

3. (a) If the class is conducting their own survey, have them re-examine the full range of questions in **Handout 1**. Some key questions to consider are:

- How big will the project be?
- Who will be surveyed?
- What will they be surveyed about?
- How much time will the class invest in conducting, processing and analysing the survey?
- Will the results be shared?
- How will you protect confidentiality?

(b) Distribute **Handout 2**: Student survey on future plans. This prepared questionnaire may be used as a model for the survey form that the class will design.

(c) Ask students to consider the merits of the prepared questionnaire by taking note of its concise questions, its multiple-choice format, and the low number of open-ended questions.

Teacher hints

If the students design their own survey, limit the number of questions to about 10.

Avoid fill-in-the-blank (open-ended) type questions in favour of questions where answers may be checked or circled.

Include several "demographic background" items so that students can correlate data and make statements such as "Female students are most likely to say..."

Try to focus the survey on student and school concerns.

Take time to test the questionnaire through role-playing or a small sample test to ensure that the questions make sense and provide useful answers.

Try to make the survey part of some larger event such as a display, special assembly or open house so students can see that other people are interested in the survey results.

Note: Be sure that the survey has been approved / registered in advance by your school's administration.



Handout 1: That's easy for you to say!

The population of Canada in 2006 was 31,612,897. That was easy to say wasn't it? In a few breaths you have just stated what took years to produce. Have you ever tried to count 31,612,897 people? It's a big job!

It is difficult to describe how big a job it really is to take a census in Canada. In 2006, 25,000 temporary employees were sworn in under the *Statistics Act* to work for the census. These people were trained, equipped and supervised so that the portrait of Canada from the 2006 Census would be as accurate as possible.

Once all the completed census forms were received in the data processing centre, information from the questionnaires had to be scanned and the long task of analysing, interpreting and publishing the data could begin.

A good way to understand the many aspects of planning, conducting and reporting a survey is to take one yourself. If you want to conduct a survey in your school, take a look at the checklist of questions that must be answered before you can get it off the ground. Once you've answered these questions, it will be easy to walk up to someone and say, "Hi! I have a few questions to ask you."

Defining the task

- Do you have permission to conduct a survey?

- How much time do you have for the whole project? (days, class periods)

- Will this be a class project or something larger?

- Will this be a census covering the entire school or a survey of a portion of the school population?



Handout 1: That's easy for you to say!

- Will you collect facts or is this an opinion poll?

- When and how will you collect the information?

- What are the major topics you will research and why? (for example, youth issues, school issues)

Designing the questionnaire

- What type of questions will you use? (for example, multiple choice, fill-in-the-blank)

- How many topics do you want to include?

- How many questions will you ask? (If two topics, how many questions per topic?)

- How many possible answers will there be for each question?

- Are the questions concise and easy to understand?





Handout 1: That's easy for you to say!

- Do you want to include background questions like name, age, sex, grade, or where the person lives?

- Will your questions provide the data you are seeking?

- How are the questions arranged on your form?

- How will your forms be printed? (Could the school newspaper / office print them?)

Collecting the data

- Who will answer the questions?

- Is this a personal interview or is it a self-completed survey?

- How will you deal with the privacy of the respondent's information if you ask for their names?

- How will you get everyone to respond?

- Do you need publicity?

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Handout 1: That's easy for you to say!

- What will you do if someone is away or does not answer?

- How will you make sure that everyone is counted only once?

- How will you know that all the forms were returned?

Processing the data

- How will you check the returned questionnaires for completeness?

- How will you summarize the data? (For example, will you use tables, graphs, or charts?)

- Is the questionnaire designed to make this easy?

- Will you be using a computer or tallying by hand?

- How does the use of one or the other affect the amount of time you need or how much you can ask?





Handout 1: That's easy for you to say!

- How will you check to make sure there are no errors in the processing?

- If processing is done on a computer, how will you construct the database?

- If it is done by hand, how will you record the data (on a form, on the chalkboard, something else)?

Reporting the data

- How will you report the data?

- What tables do you want to make?

- Do you want to include graphics, like a bar or pie chart?

- Would percentages help you communicate the data better?

- Do you want to write a report about the findings?



Name:

Date:



Handout 2: Student survey on future plans

Directions: For each question, mark the circle next to one choice. Your answers will be completely confidential; only summary data will be reported.

Thank you for taking the time to complete this survey. Getting your answers and those from others is important in producing accurate data.

1. How old are you?

- less than 12
- 12 13
- 14 15
- 16 17
- 18 19
- Older than 19

2. What is your sex?

- male female

3. What languages do you speak well enough to have a conversation? Write in the "other" language on the line provided.

- English only
- French only
- other(s) _____
- English and French
- French and other(s) _____
- English and other(s) _____
- English, French and other(s) _____

4. How many hours did you spend last week working for pay?

- under 5 hours
- 5 to 9 hours
- 10 to 19 hours
- over 19 hours
- none (go to question 6)

5. In what type of business, industry or service did you work? Write in your answer on the line provided. (Give details. For example: food service industry, childcare, retail sales)

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Handout 2: Student survey on future plans

6. After high school, which of the following do you plan to do?

- attend a trade school
- attend a college or university
- join the police / firefighters / member of the military
- get a full-time job
- travel
- none of these

7. Rank the top three occupations you would MOST like to pursue after school. Enter "1" beside your first choice; "2" beside your second and "3" beside your third.

- | | |
|---|--|
| <input type="checkbox"/> truck driver | <input type="checkbox"/> salesperson |
| <input type="checkbox"/> teacher | <input type="checkbox"/> administrative assistant |
| <input type="checkbox"/> nurse | <input type="checkbox"/> social worker |
| <input type="checkbox"/> farmer | <input type="checkbox"/> tradesperson — carpenter / mechanic / electrician |
| <input type="checkbox"/> web designer | <input type="checkbox"/> childcare worker / babysitter / nanny |
| <input type="checkbox"/> doctor | <input type="checkbox"/> homemaker |
| <input type="checkbox"/> fisherperson | <input type="checkbox"/> police officer / firefighter / member of the military |
| <input type="checkbox"/> stockbroker | <input type="checkbox"/> computer analyst / programmer |
| <input type="checkbox"/> lawyer | <input type="checkbox"/> artist / cultural worker |
| <input type="checkbox"/> engineer | <input type="checkbox"/> civil servant |
| <input type="checkbox"/> businessperson | <input type="checkbox"/> forest ranger |
| <input type="checkbox"/> chef | <input type="checkbox"/> hairdresser / esthetician |
| <input type="checkbox"/> writer | <input type="checkbox"/> other |





Handout 2: Student survey on future plans

8. Rank the top three occupations you would LEAST like to pursue after school? Enter “1” beside your first choice; “2” beside your second and “3” beside your third.

- | | |
|---|--|
| <input type="checkbox"/> truck driver | <input type="checkbox"/> salesperson |
| <input type="checkbox"/> teacher | <input type="checkbox"/> administrative assistant |
| <input type="checkbox"/> nurse | <input type="checkbox"/> social worker |
| <input type="checkbox"/> farmer | <input type="checkbox"/> tradesperson — carpenter / mechanic / electrician |
| <input type="checkbox"/> web designer | <input type="checkbox"/> childcare worker / babysitter / nanny |
| <input type="checkbox"/> doctor | <input type="checkbox"/> homemaker |
| <input type="checkbox"/> fisherperson | <input type="checkbox"/> police officer / firefighter / member of the military |
| <input type="checkbox"/> stockbroker | <input type="checkbox"/> computer analyst / programmer |
| <input type="checkbox"/> lawyer | <input type="checkbox"/> artist / cultural worker |
| <input type="checkbox"/> engineer | <input type="checkbox"/> civil servant |
| <input type="checkbox"/> businessperson | <input type="checkbox"/> forest ranger |
| <input type="checkbox"/> chef | <input type="checkbox"/> hairdresser / esthetician |
| <input type="checkbox"/> writer | <input type="checkbox"/> other |