



Teacher's Guide to Data Discovery

Introduction

This guide was written to support both elementary and secondary teachers in helping students develop basic statistical skills. It provides teachers with specific instructions on:

- finding interesting and grade-appropriate Canadian datasets
- choosing appropriate graphs for different kinds of data
- calculating basic statistical measures, with or without statistical software



Essential skills for Canadian students

Partners in Canadian education no longer question that we live in an information society. Teachers and parents recognize that students need to develop skills in a variety of technology-related areas in order to become well-educated citizens and contributing members of the work force. Indeed, skills in using computers, finding data and communicating with a high degree of numerical literacy are essential for Canadian students.

Teachers are finding that basic statistical skills – reading and creating tables, constructing graphs and calculating measures of central tendency (mean, median and mode) – are required across the curricula. Students practise these skills not only in the traditionally number-based subjects like mathematics and economics, but also in history, geography and other subjects. School boards across Canada are fostering these skills by allotting significant time for computer technology courses at the elementary level and offering new data management courses at the secondary level.

Many teachers already rely on Statistics Canada data to assist with these goals by accessing data in **E-STAT** and **Census at School**. They find that when students use Canadian data or data about themselves, they are drawn more deeply into thinking critically about the information. They compare their findings against their own experience; they question, draw conclusions and ultimately construct their own learning. With the growing availability of interesting data management software, students can quickly proceed to the analysis of the data, the step in which critical thinking takes place.

Statistical investigation

Teachers use data in the classroom for a variety of purposes. Sometimes, the goal is primarily to learn to work with data and draw conclusions from it. Sometimes, data are needed for exploring topics in the sciences, social sciences, or other subject areas. In both cases, two things are required to begin the process of statistical inquiry: a **question** to be answered and a **set of data**.

Whether students wish to first choose a question and then try to find data to support it or whether they work the other way around will depend upon the curriculum being explored.

The job of determining the question will be left to the teacher and students. However, to help with selecting suitable data, the following section presents various types of datasets available on the Statistics Canada website.

You need to use the free [Adobe Reader](#) to view PDF documents. To view (open) these files, simply click on the link. To download (save) them, right-click on the link. Note that if you are using Internet Explorer or AOL, PDF documents sometimes do not open