

AP Stats

Chapter 1 Introduction Outline

VOCABULARY

Statistics: The science of DATA

Data Analysis: The process of organizing, displaying, summarizing & asking questions about data.

Individuals: objects described by a set of data. May WHO be PEOPLE, ANIMALS OR THINGS [ROWS]

Variable: any characteristic of an individual [COLUMNS]

Categorical Variable: Places individuals into one of several categories can be numeric - Zip code, room #

Quantitative Variable: takes numerical values for which it makes sense

Distribution: tells us what values a variable takes [②] to take an (graphical) [how often avg.]

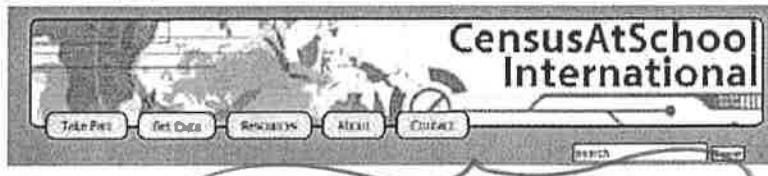
Inference: drawing conclusions that go BEYOND the data given

EXAMPLE

Census at School

Data, individuals, and variables

CensusAtSchool is an international project that collects data about primary and secondary school students using surveys. Hundreds of thousands of students from Australia, Canada, New Zealand, South Africa, and the United Kingdom have taken part in the project since 2000. Data from the surveys are available at the project's Web site (www.censusatschool.com). We used the site's "Random Data Selector" to choose 10 Canadian students who completed the survey in a recent year. The table below displays the data.



Columns
variables

Rows are individuals

There is at least one suspicious value in the data table. We doubt that the girl who is 166 cm tall really has a wrist circumference of 65 mm (about 2.6 inches). Always look to be sure the values make sense!

Province	Gender	Language spoken	Handed	Height (cm)	Wrist circum. (mm)	Preferred communication
Saskatchewan	Male	1	Right	176	180	In person
Ontario	Female	1	Right	162.5	160	In person
Alberta	Male	1	Right	178	174	Facebook
Ontario	Male	2	Right	169	160	Cell phone
Ontario	Female	2	Right	166	65	In person
Nunavut	Male	1	Right	168.5	160	Text messaging
Ontario	Female	1	Right	166	165	Cell phone
Ontario	Male	4	Left	157.5	147	Text Messaging
Ontario	Female	2	Right	150.5	187	Text Messaging
Ontario	Female	1	Right	171	180	Text Messaging

PROBLEM:

- Who are the individuals in this data set?
- What variables were measured? Identify each as categorical or quantitative.
- Describe the individual in the highlighted row.

- The individuals are the 10 randomly selected Canadian students who participated in the CensusAtSchool survey.
- The seven variables measured are the province the student lives (categorical), gender (categorical), number of languages spoken (quant), dominant hand (cat), height (quant), wrist circum(a) & preferred communication method (cat)
- The student lives in Ontario, is male, speaks 4 languages, is left handed, is 157.5 cm tall (\approx 62 in), has a wrist circumference of 147 mm (\approx 5.8 in) & prefers to communicate via text messaging.

From Data Analysis to Inference

