



## Teaching with Data.Org : A Guide for Political Science

Teaching with  
Data.Org

Teaching with Data.Org is a web site devoted to providing faculty with tools to use in courses. This site gives you links to datasets, lesson plans, theoretical examples, charts, learning modules, sample assignments and more. These materials are useful in any course where you would like to incorporate digital materials into lectures (in-person and virtual), assignments, and active learning.

Teaching with Data.Org also promotes quantitative literacy based on the key competencies undergraduates should develop in the political science major, endorsed by the American Political Science Association.

Learn More

*TeachingWithData.org* is intended to infuse quantitative literacy throughout the undergraduate social science curriculum. By making it easier for faculty to include data analysis activities in introductory and other non-methods courses, we aim to:

- improve quantitative literacy among students, particularly students in undergraduate social science courses;
- expose students to the creativity and excitement of empirical research;
- assist instructors in the development of content by providing easier access to data, tools for analysis and visualization, and pedagogical resources;
- attract instructors in the social sciences to the National Science Digital Library (NSDL) where they will find resources provided by other pathways and affiliated services;
- collaborate with the NSDL, other libraries, and service providers as a representative of the social science fields.

We view these as transformative changes in undergraduate instruction that not only improve the teaching of quantitative reasoning but also change the way that students understand content and research in the social sciences.

- [Inquiry-based Learning Slides](#)
- [2010 ASA Annual Meeting](#)
- [Inquiry-based Learning Webinar](#)
- [Outreach Team](#)

# How to use TwD.Org



First, go to the TwD.org website at: <http://teachingwithdata.org>

Here are examples of resources you can find for various types of materials.

## Two ways to search



There are two ways to search the site. Use the **Find Resources** search box (right hand side of website) or choose between **Data or Instructor Resources**.

## Simple “Find Resources”

The screenshot shows the 'Find Resources' search interface. It features a search input field with a green 'Search' button to its right. Below the input field are three radio buttons: 'Higher Ed' (selected), 'K-12', and 'All'. At the bottom of the interface are two links: 'Help' and 'Advanced Search'.

In this example, using the Find Resources search tool, the “Higher Ed” button is clicked and the search is focused on the subject “government.” Then click the “Search” button. You can use the “Advanced Search” option to narrow your search by :

- Title
- Contributor
- Resource type
- Interactivity type
- Author
- Language
- Education level
- Typical learning time

Below are the results of this search. On the left hand side is a list of the subjects, material type and resource types retrieved; the number of items is in parenthesis. On the right hand side is an example of the description on two possible resources. Clicking on the [Go to Resource](#) button will take you externally to the resource.

The sidebar displays search filters with the following categories and counts:

- Subject**
  - economics (4)
  - government (4)
  - budget (3)
  - more »
- Type**
  - list/table (6)
  - Database (3)
  - annual (1)
  - more »
- Resource Type**
  - Data Source (3)
  - Tables (2)
  - Events (1)
  - more »
- Discipline**
  - Political Science (3)
  - Sociology (2)
  - Economics (1)
  - more »
- Education Level**
  - (-) Higher Ed
    - Undergraduate (Higher Division) (8)
    - Undergraduate (Lower Division) (7)
  - more »

The search results page shows 8 items found for the query 'government'. The first result is:

**National Science Foundation Surveys of Public Understanding of Science and Technology, 1979-2006** [Go to Resource](#)

Longitudinal National Science Foundation survey taken twelve times over the period 1979-2006 asking members of the public about their levels of understanding of the state of science and technology and the places in which they get their science information.

**Creator:** Roper Center at the University of Connecticut  
**Submitted On:** 10/01/2010  
**Subject:** attitudes, technology  
**Access rights:** Free Access with Registration  
**Type:** list/table, Database  
**Relevance:** [redacted]

The second result is:

**Total Tax Revenue of State Government and Local per \$1,000 of Personal Income** [Go to Resource](#)

Chart ranking states by state and local revenue per \$1000 dollars of personal income – essentially the aggregate non-federal taxes paid by citizens of the state. Could prompt discussion about what causes tax rates as there seems to be little correlation between tax revenues (per income) and the wealth, population, size or political ideology of the state. When compared to the income for state governments alone ([http://www.dof.ca.gov/html/ls\\_data/stat-abs/documents/PSP10.pdf](http://www.dof.ca.gov/html/ls_data/stat-abs/documents/PSP10.pdf)) can provide insight into the distribution of responsibility between local governments.

**Creator:** California Department of Finance  
**Submitted On:** 05/18/2010  
**Subject:** taxes, budget, economics, government, local government  
**Access rights:** Free Access  
**Type:** list/table  
**Relevance:** [redacted]

# Searching by Resource

## Data Resources

- Tables
- Maps
- Charts and other visualizations
- Exercises with data
- Extracts for educational use
- Data for online analysis

## Instructor Resources

- Lessons/Lectures
- Activities/Exercises/Assignments/Modules
- Syllabi/Reading Lists
- Tools for analysis, visualization, and course development
- Events (conferences, webinars, etc.)
- Pedagogical resources
- Data providers

Search found 26 items  
{} Tables

Go to advanced search

Fulltext search:  Results per page: 10

**North American Border Crossing/Entry Data** [Click to download PDF](#)

North American Border Crossing/Entry Data with time series and entry type for North American parts.

Creator: Research and Innovative Technology Administration (RITA)  
Submitted On: 06/10/2011  
Subject: transportation, economics  
Access rights: Free Access  
Types Database: Report  
Relevance:

**The Stanford Center for the Study of Poverty and Inequality** [Click to download PDF](#)

This is a beta test version of a data presentation tool to support the Center's mission which is to monitor trends in poverty and inequality, to support scientific analysis of poverty and inequality, to develop science-based policy on poverty and inequality, to disseminate data and research on poverty and inequality, and to train the next generation of scholars, policy analysts, and politicians.

Creator: Stanford Center for the Study of Poverty and Inequality  
Submitted On: 06/03/2011  
Subject: children, poverty, infant mortality, income, occupations  
Access rights: Free Access  
Relevance:

**Topics of a Global Poverty** [Click to download PDF](#)

Above is an example of a search of tables. Notice the left hand side provides links for more filtering and for browsing other resource types.

# Using a Resource

## North American Border Crossing/Entry Data

[Go to Resources](#)

North American Border Crossing/Entry Data with time series and entry type for North American parts.

### Metadata

Subject	Transportation, economics
Abstract	From the web site: The Bureau of Transportation Statistics (BTS) Border Crossing/Entry Data provides summary statistics for incoming crossings at the U.S.-Canadian and the U.S.-Mexican border at the port level. Data are available for trucks, trains, containers, buses, personal vehicles, passengers, and pedestrians. Border crossing data are collected at border ports by U.S. Customs and Border Protection. The data reflect the number of vehicles, containers, passengers or pedestrians entering the United States. Customs and Border Protection does not collect comparable data on outbound crossings. Users seeking data on outbound vehicles may therefore want to review data from individual bridge operators, border state governments, or the Mexican and Canadian governments.
Creator	Research and Innovative Technology Administration (RITA)
Discipline	Economics, Geography
Contributor	ASU
Type	Database, Report
Resource Type	Charts, Data Source, Maps, Tables
Language	English
Education level	Undergraduate (Lower Division), Undergraduate (Higher Division)
Interactivity Type	Static
Interactivity level	Medium
Typical Learning Time	30 to 60 minutes

Click on the title of the resource will result in a set of metadata elements you can use to evaluate whether or not the source is right for your course. Highlighted items will link you to more resources using the same term; for example, clicking on Tables will display all tables in TwD. Below the metadata description are links to the resources available for downloading or viewing.

# Quantitative Literacy

Teaching with Data.Org was built to provide resources for incorporating quantitative literacy (QL) into social science disciplines and into coursework as a whole; not just in methods courses. Even if you are not a quantitatively focused instructor, you can still use these materials to build students' skills in becoming numerate and able to use quantitative reasoning in understanding political theory.

## What is Numeracy?

By the term "numeracy" we mean:

"ability to reason and solve sophisticated quantitative problems, ... basic understanding of the scientific method, and ... ability to communicate at a substantial level about quantitative issues in everyday life."

*National Numeracy Network* (<http://serc.carleton.edu/nnn/resources/index.html>)

## What is Quantitative Literacy?

By **Quantitative Literacy** we mean to build students' abilities in:

"comfort, competency, and "habit of mind" in working with numerical data ... as important in today's highly quantitative society as reading and writing were in previous generations."

*National Numeracy Network* (<http://serc.carleton.edu/nnn/resources/index.html>)

## What is Quantitative Reasoning?

**Quantitative Reasoning** is a competency that is part of QL:

"higher-order reasoning and critical thinking skills needed to understand and to create sophisticated arguments supported by quantitative data."

*National Numeracy Network* (<http://serc.carleton.edu/nnn/resources/index.html>)

## What are QL/QR competencies?

- Read and understand graphs, tables, etc.
- Interpret quantitative information and make appropriate inferences
- Solve problems using logic, math and statistics
- Communicate verbally, graphically and numerically
- Recognize limitations and bias
- Discriminate between association and causation; probability and chance

<p>How will using TwD.Org build QL/QR competencies?</p>	<ul style="list-style-type: none"> <li>• Demonstrate how social science applies to everyday life</li> <li>• Chance to “work like a social scientist”</li> <li>• Underscore importance of research methods using statistics</li> <li>• Strengthen quantitative literacy skills in all courses</li> </ul>
<p>Information and Resources</p>	
<p>Project Partners</p>	<p><a href="#">Inter-university Consortium for Political and Social Research</a></p> <p><a href="#">Social Science Data Analysis Network</a></p> <p><a href="#">Social Science Research and Instructional Council</a></p> <p><a href="#">National Science Digital Library</a></p>
<p>Readings</p>	<p>1991. Wahlke, John C. Liberal Learning and the Political Science Major: A Report to the Profession</p> <p>2001. Bennett, Stephen Earl and Linda L.M. Bennett. What Political Scientists Should Know about the Survey of First Year Students in 2000.</p> <p>2010. Parker, Jonathan. Undergraduate Research Methods Training in Political Science: A Comparative Perspective</p>
<p>Quantitative Literacy</p>	<p><a href="#">National Numeracy Network</a></p>

