Lesson Plan 8:

How Typical or Atypical Is Your Community?

Grades

6-8, 9-12, College 100 level

Description

When the Lynds went to Muncie, Indiana in 1924 they were looking for a typical American community. They were looking for an average, ordinary community. The fact that Middletown was ordinary, made it extremely valuable as a scientific research site. Middletown was (and is) representative of the United States. For many measurements, Middletown was (and is) near the national average.

How typical is your community? Do people in your community have more or less education than the national average? What about incomes? Family size? House prices? In this lesson, students will research and use available data to find out the answers to these questions.

Learning Objectives

By fully participating in this lesson, students will be able to:

(1) explain the concepts of "typical" and "representative";

(2) measure how typical a community is by comparing its characteristics to those of the nation as a whole;

(3) assess whether results from a "typical" community can be used as knowledge about the larger country;

(4) present an analysis of how typical their own community is.

Time Required

This lesson is expected to require approximately 5 hours of class time.

Materials and Resources

NOTE: You will need to have Adobe Acrobat installed on your computer to access the Student Worksheets. You may download Adobe Acrobat free of charge at http://www.adobe.com/products/acrobat/readstep.html.

For this lesson you will need:

1. Computers connected to the internet for conducting research and to access"The First Measured Century" website.

2. Television, VCR, and videotape of the first hour of"The First Measured Century," which can be purchased at http://www.shop.pbs.org , ordered by phone by calling 1-800-PLAY-PBS, or recorded during the broadcast:

> **The First Measured Century Premieres on PBS Wednesday December 20th, 2000 from 8:30 to 11:30 PM Check your local listings at: http://www.pbs.org/whatson/index.html**

Schools are permitted to tape The First Measured Century and use the program for educational purposes for one year following each PBS broadcast. Additional information about teacher taping rights can be found at PBSTeachersource:
http://www.pbs.org/teachersource/copyright/copyright_trights.shtm

3. Other information can be found in reference books at your school or local library.

Teaching Strategy

Class Session 1

1. Prepare for this lesson by queuing"The First Measured Century" to the Middletown segment of the program. You will find this segment about 47 minutes into tape 1 where the Ford Model T comes on the screen.

2. Lead a discussion about the notion of"typical-ness."

- What does it mean to say something is typical?
- What are other words that mean similar concepts? [for example,"representative" and "normal"]
- How can this "typical-ness" be measured?
- What if something is atypical? What would that look like?
- What is typical of students in your school?
- Can a characteristic be typical even if not everybody has it?

3. Show the Middletown segments of the video, The First Measured Century.

4. Explain the purpose of the activity to the students: The purpose of this assignment is to compare a county or city of your choice to the norms of the country provided by*The First Measured Century* book provided in its entirety on this website. Using some of the same variables that the FMC book and theLynds used, you are to come up with a profile of your county or city of choice and then compare it to United States.

5. Have the students pick five variables in topics such as land area, population, housing, health, money, or education.

Class Sessions 2, 3 and 4

1. Have the students gather recent information about their community from websites and

reference materials. For example, find out the average selling price of homes in your community in a recent year. The years used for the data should be fairly recent, nothing earlier than 1990. (Remember that they can be broken down into sub-variables. For example, population can be broken down, into races, foreign born, age groups, and so on. Make sure not to end up with too much data, and too little time to analyze your findings).

2. Have the students find out the national average on the 5 variables you discovered about your local community. The students organize their findings in tables then compare it to the data on the same variables in the FMC book.

Class Session 5

1. The students compare and contrast their community with the national averages.

- Does the county or city fit the norms given by the book, and how?
- Does it differ, and in what ways?
- Can the students generalize that most counties or cities would fit in this norm? Why, or why not?
- Is the community typical of America? Why or why not?

Assessment Recommendations

1. Evaluate each student for participation in gathering data, making the comparison between local and national data, and organizing and presenting the data.

Related Links

http://www.census.gov (Bureau of the Census)

http://fisher.lib.virginia.edu/ccdb (Geospatial and Statistical Data Center)

http://www.cdc.gov/nchs/default.htm (US National Center for Health Statistics)

http://www.fedstats.gov/regional.html (several links to other web pages with statistics)

http://www.norc.uchicago.edu (National Opinion Research Center)

http://crs.uvm.edu (Center for Rural Studies)

http://www.isr.umich.edu/src (Institute for Social Research)

Extensions

1. Pick more variables and find out if the local community is similar to the nation as a whole.

2. Instead of or in addition to comparing to the nation, compare the local community to the state.

Additional Resources

The book, *The First Measured Century*.

Relevant Standards

Standards for School Mathematics
From the National Council of Teachers of Mathematics (http://www.nctm.org)

Data Analysis and Probability

> Instructional programs from prekindergarten through grade 12 should enable all students to—
>
> - formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them;
> - select and use appropriate statistical methods to analyze data;
> - develop and evaluate inferences and predictions that are based on data;
> - understand and apply basic concepts of probability.

Communication

> Instructional programs from prekindergarten through grade 12 should enable all students to—
>
> - organize and consolidate their mathematical thinking through communication;
> - communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
> - analyze and evaluate the mathematical thinking and strategies of others;
> - use the language of mathematics to express mathematical ideas precisely.

Connections

> Instructional programs from prekindergarten through grade 12 should enable all students to—
>
> - recognize and use connections among mathematical ideas;
> - understand how mathematical ideas interconnect and build on one another to produce a coherent whole;
> - recognize and apply mathematics in contexts outside of mathematics.

Representation

> Instructional programs from prekindergarten through grade 12 should enable all students to—
>
> - create and use representations to organize, record, and communicate mathematical ideas;
> - select, apply, and translate among mathematical representations to solve

problems;
- use representations to model and interpret physical, social, and mathematical phenomena.

National Science Education Standards
From http://www.nap.edu/readingroom/books/nses

Science as Inquiry

CONTENT STANDARD A: As a result of activities in grades 5-8 and 9-12, all students should develop:

- Abilities necessary to do scientific inquiry
- Understandings about scientific inquiry