

Analyzing Population Trends

The population of the United States is steadily on the rise. In addition, the existing population is constantly shifting. This trend requires city, county, and state governments and the federal government to adjust to new demands for resources, transportation, school systems, employment opportunities, and social services. In order to improve the chances of success, governments and the responsible citizen must understand the amount and geographic distribution of population change.

Key skills are required to understand population change. A primary skill is knowing how to use maps, models, tools, and technologies to acquire, process, and report information from a spatial perspective. One such tool is the choropleth map. A choropleth map is a map that shows regions or areas that have the same characteristics.

In this activity, you will create a choropleth map to illustrate the population growth rate of your state. You will use this map to analyze the regional trends in growth rates and identify ways in which these trends can impact your state. Finally, you will write a proposal to your local government officials regarding changes that you feel should be made in providing community services.

OBJECTIVES

Create a choropleth map showing population changes in the counties of your state and incorporate a regional analysis.

Predict regional trends in your state population over the next 10 years.

Communicate the results of your study to government officials and propose changes to community services.

MATERIALS

- graph paper, sheet (1)
- map, your state, outline of counties
- marker, black
- pencils, colored, assorted

Procedure

1. Obtain a copy of an outline map of your state from your teacher. The outline map contains outlines of all of the counties and their names. Depending on which state you live in, your map may have parishes instead of counties, or it may have cities in addition to counties.
2. Prepare a data table similar to Table 1 for your state. Lay out the table on a separate sheet of graph paper. Label the sheet, "Percent Change 1990–2000, Counties of [your state]."

Analyzing Population Trends *continued***TABLE 1: PERCENT CHANGE 1990–2000, COUNTIES OF RHODE ISLAND**

County	1990 Total Population	2000 Total Population	Percent Change, 1990–2000
Bristol			
Kent			
Newport			
Providence			
Washington			

- 3.** Gather the *1990 population* and *2000 population* data required by your table for each county in your state. Obtain printouts of data from The U.S. Census Bureau's Web site or from your teacher.

Analysis

- 1. Organizing Data** Calculate the *percent change 1990–2000* for each *county* and record the calculations as percentages on your data table. The *percent change 1990–2000* for each *county* is the quantity of the *1990 population* minus the *2000 population*, divided by the *1990 population*. Your number will be negative for population reductions.

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- 2. Constructing Maps** Prepare your choropleth map. Using the color codes in Table 2, color inside the boundary of each county according to the value of its *percent change 1990–2000* on your data collection and calculation table.

TABLE 2: CHOROPLETH MAP COLOR CODES

Percent Change, 1990–2000	Color
25.0% or greater	Red
10.0%–24.9%	Yellow
5.0%–9.9%	Green
0.0%–4.9%	Blue
Less than 0.0%	Purple

Conclusions

- 3. Interpreting information** Incorporate groups of counties into the standard geographical regions for your state by using a black marker to draw regional boundaries. Geographical regions are usually defined by their common landscape characteristics (e.g., farmland, marsh, foothills, etc.). Write the name of each region on the map. Which regions are growing the fastest? Which regions are growing the slowest?

- 4. Drawing Conclusions** Imagine that the geography of your state is homogeneous (the same everywhere). Does the shifting of populations on the choropleth map indicate effects that do not fit your state's standard geographical boundaries? Explain.

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5. Making Predictions Predict what the trends of population change will be in each region over the next 10 years.

6. Evaluating Results Evaluate the results of your study. Does your study agree with what you know about the counties and regions in your state? Explain.

Extension

1. Research and Communications Formulate an argument on how these trends can impact your state. Write a mock open letter proposal to officials of your local and state government regarding changes that should be made in the amounts and types of community services that the local and state government provides.