

Math TODAY™

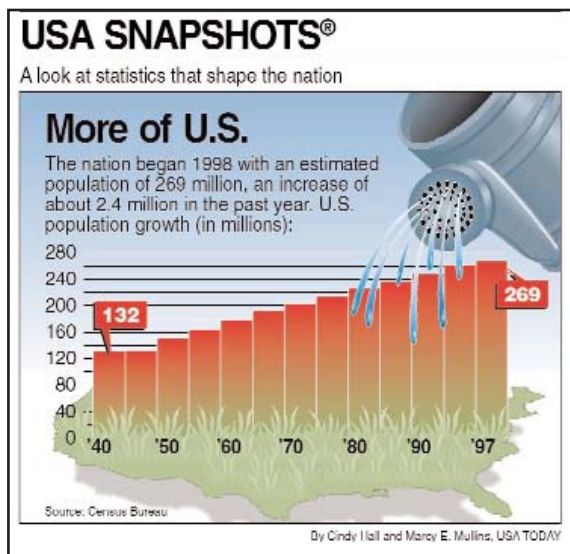
Student Edition

USA TODAY

NO. 1 IN THE USA



Population on the Move



Focus Questions:

- What is the rate of change in population per year? What would be the appropriate units for this value?
- Determine the linear model that would represent the growth in population over the time period.
- Based on the data, what will be the estimated population of the United States in 2010?
- Is there a correlation between years and population growth?
- Look through USA TODAY and find an article on which Census data would have a bearing. Explain why this information would be useful or important and how it could impact the outcome of the topic.

Activity Overview:

This USA TODAY Snapshot® shows the U.S. population for the years 1940 - 1998. Examining the rate of population growth can influence many decisions.

What is the fastest growing city in the United States? Which regions are gaining population? The growth or decline in the population is an important trend that governments and businesses are interested in knowing about. This information is an important resource for data about the people and economy.

In this activity you will determine the rate of growth of the U.S. population and find a linear model from the data to predict the population in the future if these trends continue.

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This activity was created for use with
Texas Instruments handheld technology.

Population on the Move

Procedure:

- Using the USA TODAY Snapshot and data provided, enter the population in the data table for each of the years listed. (The population for 2000 came from the Census Bureau data.)

| Year | Population U.S. (millions) |
|------|----------------------------|
| 1940 | |
| 1950 | 151 |
| 1960 | 179 |
| 1970 | 203 |
| 1980 | 227 |
| 1990 | 249 |
| 1998 | |
| 2000 | 281 |

- Enter the data from your table into the List Editor of the TI handheld.
 - Enter year in L1 and population in L2.
 - Create a scatter plot for the data.
 - Press **WINDOW** and set the appropriate values for the independent and dependent variables.
 - Press **GRAPH**.
 - Describe the correlation you observe between the independent and dependent variables.
- Determine the linear model using the regression capabilities of the handheld. Record the linear model _____
- In the linear model, what does the independent variable represent? _____ The dependent variable? _____
- Using the model from step 3, predict the population of the U.S. in 2010. Predicted population _____
- The population over this time period can be modeled by $y = mx + b$. In this model, what does the value for m represent? Include the appropriate units.

Data Source:

U.S. Census Bureau

Materials:

- TI-83 Plus or TI-83 Plus Silver Edition

Additional Information:

Look at the U.S. Census Bureau web site, www.census.gov, to find information about data that is gathered from each census.

Explore the Census section on the News section of the USA TODAY Web site at www.usatoday.com for related stories and interactive national and state demographic data.