Math TODAY™
Student Edition
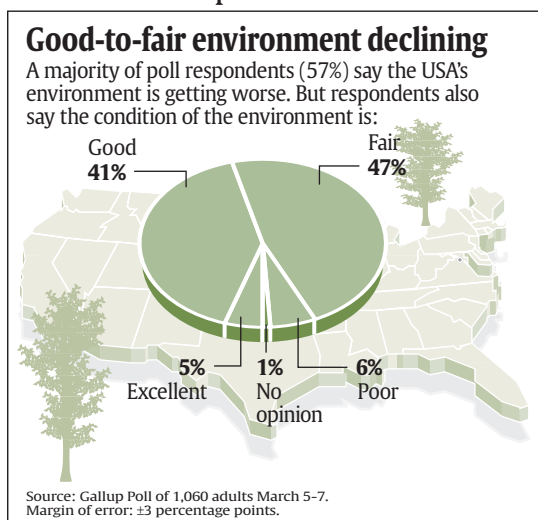
USA TODAY
NO. 1 IN THE USA
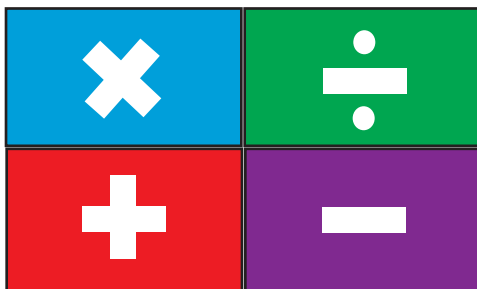
Good-to-fair environment declining

USA TODAY Snapshots®

Good-to-fair environment declining
A majority of poll respondents (57%) say the USA's environment is getting worse. But respondents also say the condition of the environment is:

Good
41%

Fair
47%

5%
Excellent

1%
No opinion

6%
Poor

Source: Gallup Poll of 1,060 adults March 5-7.
Margin of error: ±3 percentage points.

By William Risser and Keith Simmons, USA TODAY

Focus Questions:

- What decisions could be made based on the information found in the USA TODAY Snapshot?

- How can a poll consisting of 1,000+ people represent the opinion of the entire U.S. population?

- How do you think the environment is doing?

Activity Overview:

The USA TODAY Snapshot "Good-to-fair environment declining" is a circle graph based on a Gallup Poll survey. You will calculate the actual number of those surveyed who believe the environment is in "fair" condition. Using the margin of error you will calculate a range of percents for the "fair" condition category and translate that into a range of the actual adult population. You will calculate the percent of the overall population the survey represents. Finally, you will recreate the circle graph to write a persuasive argument for or against increased provisions for the environment.

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

Good-to-fair environment declining

Procedure:

Step 1

Read the USA TODAY Snapshot carefully. Then, enter the headings and per-cents from the pie chart into the CellSheet™ App in your handheld. Using the TI Keyboard will help with this process.

Step 2

Recreate the pie chart as presented in the USA TODAY Snapshot. You will be adjusting these numbers in order to answer a question on the Assessment Sheet.

Assessment and Evaluation:

Q. How many adults participated in the poll? How many responded that they considered the environment in "fair" condition? Round your answer to the nearest person.

A.

Q. According to the survey, 47% of the adults interviewed believe the environ-ment is in "fair" condition. If the survey is representative of the entire adult pop-ulation, using the margin of error in the graphic, what is the range of percents and what is the number of adults who feel the same as the respondents? Assume there are approximately 187 million adults in the U.S.

A.

Q. The formula for calculating the margin of error is $\%\ of\ error = \dfrac{2\,(.5)}{\sqrt{sample\ size}}$ How many adults would need to be surveyed to decrease the error to +/-2%?

A.

Q. What % of the adult population was actually polled? How many U.S. adults does each person surveyed represent? What insures that this is a sufficient number to create an accurate poll of the entire adult population in the U.S.?

A.

Q. You are a lobbyist and want to convince key senators to vote for or against a more stringent environmental protection law. How could you present the data from this survey to persuade them. Adjust the numbers in the CellSheet™ App and using the handheld draw a new circle graph to support your argument. Sketch your graph on the back of this page.

Data Source:

Gallup Poll

Materials:

- TI-83 Plus family or TI-84 Plus family
- TI Keyboard (optional)
- Colored pencils
- Protractor

Additional Information:

- To insure the integrity of their sur-veys, Gallup Poll uses a selection approach based on a fundamental principle of statistics called equal probability of selection, which states that if every member of a population has an equal probability of being selected in a sample, then that sample will be representative of the population.

- Gallup Poll selects survey respon-dents by using a random phone number generator.

- Once a Gallup Poll interviewer reaches a household, they ask for a list of adults and based on an arbi-trary attribute (such as month of birth). The interviewer will then ask for a specific family member based on that specific attribute. If that per-son is not there, the interviewer will call back and ask specifically for that person.