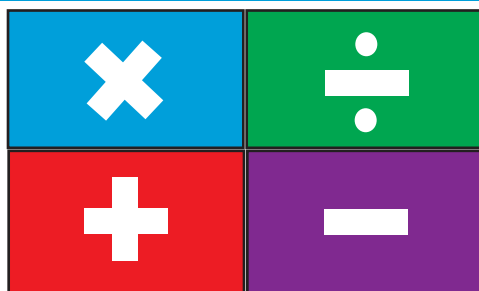


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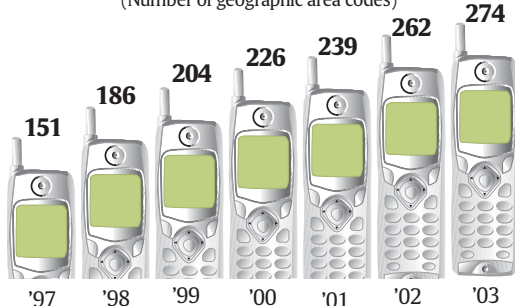
More 10-digit dialing

USA TODAY Snapshots®

More 10-digit dialing

With America's increased use of faxes, pagers and cellphones, 123 new area codes have been created over the past six years, in 34 states.

(Number of geographic area codes)



Source: NeuStar, Inc.

By Steven Snyder and Adrienne Lewis, USA TODAY

Activity Overview:

It used to be that a household had only one phone number, which easily accommodated everyone in the family. But today, with personal faxes, pagers and cellphones, the typical contemporary family has several "phone numbers." The USA TODAY Snapshot "More 10-digit dialing" displays the affect that all of these communication devices have on our need for additional area codes to accommodate the technology.

In this activity, you will graph the data and determine the line of best fit. You will write the equation of your line and use it to make predictions about the number of area codes needed in the future.



Life

Colleges catch cellphone wave

LIFE SECTION - WEDNESDAY - OCTOBER 29, 2004 - PAGE 5D

By Mary Beth Markein
USA TODAY

Sure, there may be students among the 15,000-plus undergraduates at Miami University in Oxford, Ohio, who don't carry a

cellphone. But "I haven't seen them," says campus telecommunications director Tom Walsh.

Indeed, cellphones have insinuated themselves into campus life in a relatively

Focus Questions:

- Has your area code changed recently?
- Name some different devices that use phone lines?
- How many different phone numbers does your family have?

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More 10-digit dialing

short time. Some 78% of college students had one last spring, says market-research company Student Monitor, based on a survey of 1,200 four-year full-time students on 100 college and university campuses. Three years earlier that number was 34%.

That's light-years away from his day, Walsh says, when a pay phone at each end of the residence hall was the link to the outside world.

But as students have migrated to cellphones, colleges and universities face a problem. In the 2001-02 school year, for instance, Miami University logged about 130,000 fewer long-distance calls from on-campus land-line phones and 273,000 fewer long-distance calls from students off campus. It lost about \$300,000 in phone revenues, which primarily paid for the land-line system.

Now, many schools are trying to cash in on the cellphone craze by negotiating service plans of their own as a way to meet student demand, save money and, perhaps, create a new revenue source.

This fall, for instance, Miami University began offering a plan, including an option that includes a free phone, which it negotiated with Cincinnati Bell Wireless. For \$15 a month and a \$25 set-up fee, students can get 300 anytime local minutes, plus 3-cents-a-minute rates beyond that. They also get features such as caller ID and voice mail. Long-distance charges out of the area range from eight to 12 cents a minute.

"A huge user can probably find a better deal," Walsh says, but "we think it fits most people."

A number of schools, including State University of New York at Albany, Denison University in Granville, Ohio, and San Diego State University, meanwhile, recently signed with CampusCell, a year-old New Hampshire-based company that offers schools rates of \$1.50 to \$2.50 a month for every enrolled user. All the school has to do is let the company distribute brochures through campus mail.

And this fall, Morrisville State College in New York eliminated land lines in dorm rooms altogether, handing out a cellphone to each of the 1,700 students living in residence halls. As part of their dorm services fee, each student gets free incoming calls and unlimited local calling, along with numerous features, including voice mail, caller ID and Nextel's new walkie-talkie service. They can buy long-distance plans starting at \$29.99.

(By comparison, students living off-campus can buy a Nextel phone and service plan that includes nationwide long-distance calling for a base fee of \$39.99 a month along with a start-up cost of about \$25.)

Economics aside, the reasons for the popularity of cellphones are clear: Parents appreciate being able to keep in contact with their kids, especially if there's an emergency. And students, many of whom spend little time in their dorm rooms or apartments, like the flexibility and convenience.

"I'm very busy on campus . . . so it's nice having that connection and not having to worry about all the calls I missed while I was at work or the computer lab," says Jamie Mikula, 22, a senior at St. Norbert College in DePere, Wis.

For service providers, the allure of snagging a contract with a college or university is access to a captive audience. "You can't imagine how big this industry is," says CampusCell CEO Donald Goodearl, referring to the nation's 9 million college-age students. Not only are they tech-savvy, "they're heavy talkers," he says.

His company markets directly to individual users, but universities that develop their own deals also can ask providers for a percentage of ongoing service revenues as part of the bargain.

"In exchange for our helping them to market to the students, we're certainly looking for something in return," says Carl Whitman, executive director of e-operations at American University in Washington, D.C. The campus is looking to develop long-

distance plans with a service provider as it moves closer to creating a wireless campus. "It's meant to be a win-win" for everyone, he says.

Not every deal has worked to the school's advantage. Last year, St. Norbert College gave cellphones to 50 students housed in a former assisted-living building, but found the plan cost nearly five times as much as traditional land lines: \$12,000 compared with \$2,500.

Students liked the perk, but "economically it was a no-brainer" to go back to land lines, says facilities director John Barnes.

Also, "an awful lot of students came with cellphones, so . . . we were being a little redundant."

Even so, technology's true believers say that, just as computers have revolutionized higher education, so, too, will cellphones.

Morrisville State College president Ray Cross, for instance, envisions a day when each cellphone will carry devices that allow a student to use it as an ID card, campus debit card and key to their residence halls.

With a press of a button, he soon could be sending a text message to the cellphones of every student on campus. Ultimately, he predicts, cellphone and laptop will converge "in a way we can't foresee right now."

For now, though, he's getting used to some of the unintended effects of those ubiquitous phones. Namely, the noise level, which he says has increased remarkably on campus with the walkie-talkie feature, because a bystander can hear both sides of the conversation.

"You walk around campus and these kids are talking to each other all the time. And it's beep-beep," Cross says. "In some ways it drives you nuts, but you have to smile because in some ways it's a reflection of what's going on socially with young men and women around the country. Instant communication is very popular."

More 10-digit dialing

Procedure:

Activity 1

Read the accompanying article and complete the article assessment and evaluation sheet.

Year							
Number of area codes							

Activity 2

Step 1

Collect the data from the USA TODAY Snapshot, "More 10-digit dialing" and enter it into the chart (be sure to use all four digits for the year i.e., 1997 not 97).

Step 2

Enter the year into L1 and the number of geographical area codes into L2 of your calculator.

Step 3

Create a scatter plot on your calculator. Remember to adjust your window to accommodate the data. Copy this onto your graph paper.

Step 4

Using a straightedge, determine the line of best fit and lightly draw it onto your graph paper. Choose any two points on your line (the points do not have to be data points and should not be directly next to each other) and find the equation of your line.

Step 5

Enter the equation of your line into the y= screen under y1.

Step 6

Graph it on your calculator to verify that it is the same as the line you drew on your graph paper. If it is not, verify your calculations.

Step 7

Complete the Assessment and Evaluation sheet.

Data Source:

NeuStar, Inc.

Materials:

- TI-83 Plus family or TI-84 Plus family
- Graph paper
- Straightedge

Additional Information:

- Slope Formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

- Slope Intercept Formula:
 $y = mx + b$

Student Notes:

More 10-digit dialing

Assessment and Evaluation:

Activity 1

Reading the Article

Q. What is the increase in percent of college students with cellphones over the last three years?

A. _____

Q. How much income did Miami University lose in revenue from long distance calls due to cellphones? Why was this significant to the university?

A. _____

Q. What is the cost to a university for a cellphone per student compared with the cost to an individual?

A. _____

Q. What is the allure for service providers?

A. _____

Q. Why didn't St. Norbert College's cell plan work?

A. _____

Q. How could cellphones revolutionize higher education?

A. _____

Q. What is one drawback of having so many cellphones on campus?

A. _____

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Assessment and Evaluation (continued):

Activity 2

Q. What is the independent variable? Dependent variable?

A. Independent: _____ Dependent: _____

Q. What is the window setting you used to graph the scatter plot on your calculator?

A. x - Min: _____ x - Max: _____ y - Min: _____ y - Max: _____

Q. List the two points you chose on your line of best fit. Mark them P and Q on your graph paper. Find the equation of your line. Show all work.

A. P (____, ____) Q(____, ____)

Q. What is the slope of your line and what meaning does it have in relationship to this problem?

A. _____

Q. What is the y-intercept of your line and what meaning does it have in relationship to this problem?

A. _____

Q. According to your equation, what is the number of area codes that were needed in the year 2000? Use either the trace or table feature of your calculator and round your answer to the nearest whole number.

A. _____

Q. According to your equation, in what year were 200 area codes needed? Use either the trace or table feature of your calculator and round your answer to the nearest year.

A. _____

Q. Predict the number of area codes needed in the year 2020.

A. _____

Q. Predict when a four-digit area code will be needed. In other words, when will there need to be over 1000 area codes? Do you think this is a reasonable estimate? Why or why not?

A. _____

