

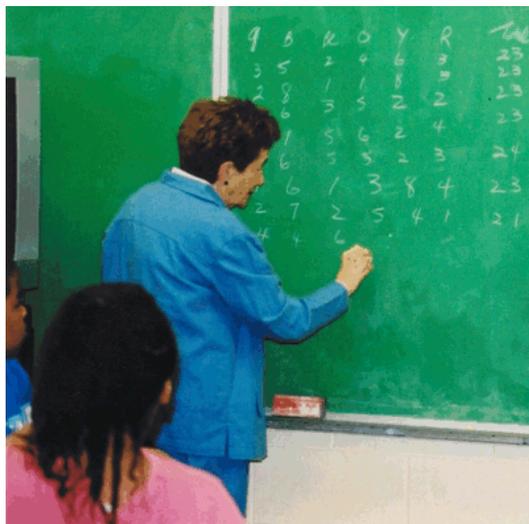
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NEWS FOCUS

Rolling the Dice

Jeffrey Mervis

Retired statistician Eva Jacobs uses dice to show a sixth-grade math class that what they are learning about probability has real-world applications--and also that math can be fun.



ReSET volunteer Eva Jacobs records student data on distribution of M&M candies by color.

Credit: Photo by Lyndi Schrecengost of Fluent Communications, provided by ReSET

Campbell, a 10-year veteran of private and charter schools, says Jacobs reinforces what he tells his students every day. "I like having another voice in the classroom talking about how math is important, from someone who's used it on a day-to-day basis," he says. "That's especially useful when they complain that they won't need to know this stuff once they grow up and get a job." In fact, one of Jacobs's lessons on understanding statistics includes a graph showing how lifetime earnings rise in step with a person's level of education. To make sure nobody misses the message, Jacobs gives them an assignment: "Take that chart home and show it to your parents and siblings so they can see how much more you'll earn with a college degree." She pauses, then adds quickly, "Of course, that's not the only reason to go to school. There's also the pleasure of learning."

Jacobs's presentation on the odds of coming up with a particular number from a pair of dice shows that learning can go both ways. It begins with a class consensus that there is a zero chance of rolling a one. Then she invites the class to yell out the combinations that produce a particular number, writing them down on butcher paper. When she gets to eight, she leads the way with "one and seven, two and six, three and five, four and four, ..." At nine she begins again with "one and seven. ..." At that point Campbell intervenes. "Mrs. Jacobs?" he queries her gently. "How high a number can we get on a die?"

After class, Campbell explains that even a teacher's gaffe can be turned into a teachable moment. "When you're an expert, you're allowed to make mistakes," he says. "I try to have them notice what's wrong and say how to correct it. They certainly try to catch my mistakes."

Eva Jacobs brought along three pairs of dice this spring when she visited a sixth-grade math class at the Shaw campus of the Center City Public Charter Schools in Washington, D.C. She wanted students to know that what they were learning about probability has real-world applications—and also that math can be fun.

Long retired from a 40-year career as a statistician with the U.S. Bureau of Labor Statistics, Jacobs has volunteered for the past decade with ReSET (Retired Scientists, Engineers and Technicians), an organization that sends members to Washington-area schools. At the age of 89, she still drives downtown once a week from her home just across the D.C. border in suburban Maryland, parks her car in the shadow of the city's massive, new downtown convention center, and climbs the steep steps of the renovated Catholic school that houses the K-6 charter school, lugging a tote bag filled with materials from sources that range from daily newspapers to a Web site from the American Statistical Association, of which she remains a member. Her only concession to age is taking the elevator to Donald Campbell's classroom on the fourth floor.

Jacobs is brimming with ideas about translating her expertise in statistical analysis and survey research to Campbell's 18 students, who are prone to do even the simplest calculations on their hands and whose grasp of the multiplication tables is tenuous. Barely 4.5 feet tall, Jacobs nevertheless commands their respect as she leads a lesson sprinkled with asides about their chances of winning at the casino and in the daily lottery. "The point of gathering statistics is to use the data," she explains at the end of the hour-long lesson. "I also want them to know that being a statistician is a wonderful career. These kids may have met lawyers and preachers and teachers, but they don't know what a scientist does."

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