

Education

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Beyond Counting Sheep. Why math is the hot new bedtime reading

By Bonnie Rochman

ONE RECENT EVENING IN WEST CALDWELL, N.J., a library hosted a pajama party. Twenty little kids in princess nightgowns and football flannels counted out glittery animal stickers and pasted them onto homemade dominoes. Then they raced a stuffed pink frog on a carabiner up and down a zip line, raising and lowering their arms to speed it up and slow it down—physics in motion.

Laura Bilodeau Overdeck, a Princeton-trained astrophysicist turned stay-at-home mom, watched the scene intently. This pajama party was her idea. She's the founder of the nonprofit Bedtime Math, and she wants kids to fall in love with numbers. As part of that mission, she wants to change the way parents put their kids to bed.

It's not that Overdeck, 43, is quibbling with the sacrosanct bath-then-book nighttime routine. She just wants parents to add a math problem, as she and her husband, investment-fund manager John Overdeck, have done with their kids, ages 4, 7 and 9. A year ago she launched the Bedtime Math website; an app and book are forthcoming. She's reached out to libraries across the U.S., offering gratis do-it-yourself kits for Bedtime Math pajama parties—dominoes, stickers and zip-line cord included. She is exploring partnerships with organizations like the Girl Scouts in Chicago and is hoping to reach science museums. "Everyone knows they should read a book to their kids before bed," she says, "but nobody knows they should be doing math too."

The core of Bedtime Math is pretty simple: a free daily math problem, geared to one of three levels of difficulty: "wee ones" (prekindergarten), "little kids" (kindergarten to second grade or so) and "big kids" (second grade and up). The subjects tend to be ones that especially appeal to children—candy, for example. A recent wee-ones calculation: "M&M's last 13 months, but Life Savers last only 9 months, despite their name. How many

months will those M&M's outlast the Life Savers?" States, weather and arcane holidays like International Pancake Day also play starring roles, as do animals; a recent problem asked kids to calculate how far a skunk can spray its scent.

Overdeck is hoping that candy and other child-friendly puzzles can be a remedy for math anxiety. Research shows that early math skills are a better predictor of academic success than reading ability. But the U.S. is in a numbers slump: America's students rank 25th out of 34 industrialized countries in math. Everyone from the Girl Scouts to *Sesame Street* has launched efforts to reverse the trend. "U.S. children are not performing up to the level one would expect," says Sian Beilock, author of *Choke*, about performance anxiety. Part of the problem might be cultural. "You never hear people walking around bragging that they can't read," she says, "but you hear people all the time saying 'I don't do numbers.'" Beilock, a psychology professor at the University of Chicago, will soon lead a study of the program's impact on two groups of preschool- and kindergarten-age children.

"Bedtime Math is part of a project that a lot of people are working on, which is, What is the cultural shift that will get kids coming into school already comfortable with math?" says Dan Finkel, a co-founder of Math for Love, a Seattle outfit that advises teachers on how to use games to spice up math education.

In contrast to Math for Love, Overdeck

States, animals and arcane holidays like International Pancake Day play starring roles in Bedtime Math problems

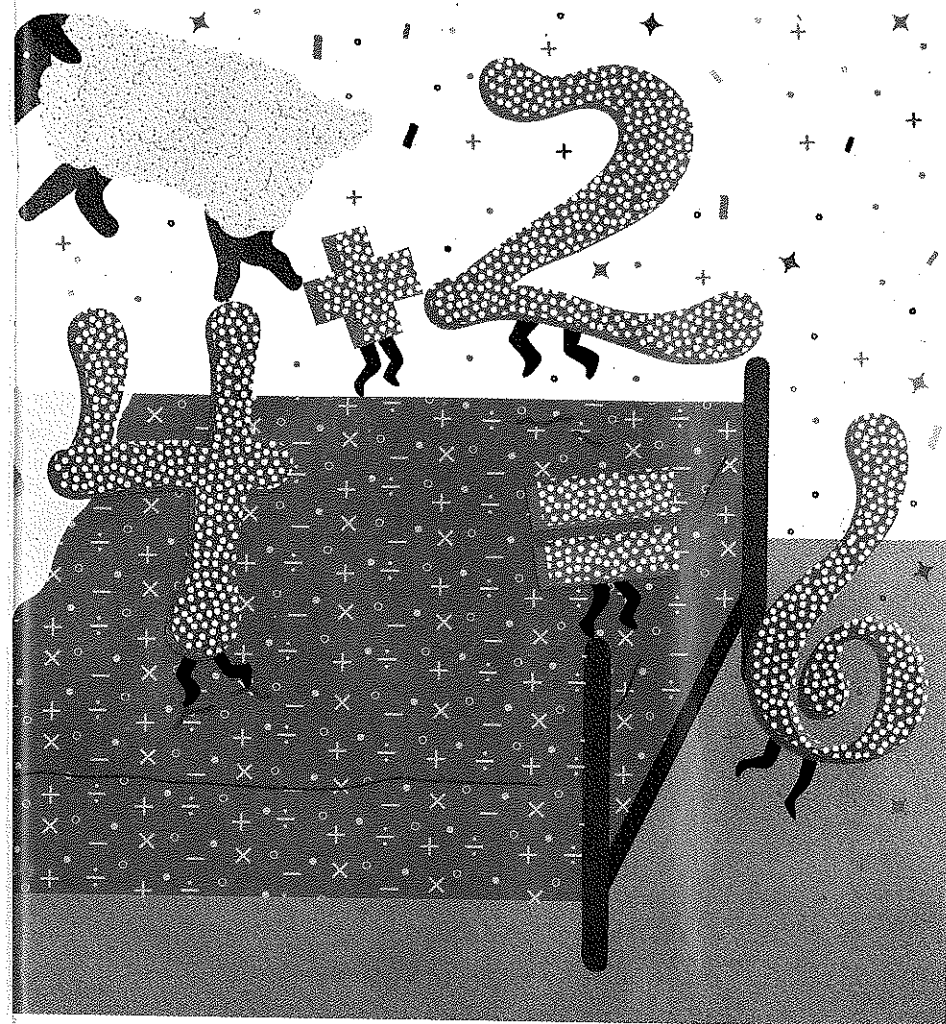


targets parents, not educators. "If it's related to schools, it sounds compulsory," she says. "We want kids to feel about math the way they feel about dessert after dinner."

The Overdecks have always done math—bedtime and otherwise—with their kids, beginning when their oldest was 2: they would count the appendages on the stuffed animals in her collection. Last February, Laura began to share her family's math habit, e-mailing a few friends and relatives a sample problem. Since then, 20,000 people have signed up to receive her daily messages. Bedtime Math now has a staff of five; Laura still designs the problems, with the help of a calendar of dates worthy of a challenge, such as Cookie Monster's birthday and the anniversary of Alaska's statehood.

It's hard to argue that





Bedtime Math isn't fun, but some are skeptical that it's a cure-all. "It won't be a slam dunk for everyone who uses it," says Finkel, who thinks math before bedtime revs kids up when they should be winding down. With the University of Chicago study yet to start, the strongest evidence that Bedtime Math can change children's skills comes from data collected from Snacktime Math, a program of Bedtime Math problems given to kids attending summer camp at a New Jersey Boys & Girls Club: more than 70% of the largely low-income students improved their skills after a six-week session.

Most of the other data in support of Bedtime Math are, for the time being, anecdotal. One mother told Overdeck that her child's zest for Bedtime Math enables her to use it as a threat: "If you don't brush your teeth now, no math tonight!" Sandy Smith, a Bedtime Math subscriber who attended the West Caldwell pajama party with her two preschoolers, says, "I always concen-

trated on the reading part, and I forgot to focus on the math." Her confession is all the more revealing because she is an elementary school teacher.

In early February, Bedtime Math threw a pajama party at Manhattan's brand-new Museum of Mathematics, where kids can do things like live out geometry by pedaling square-wheeled trikes over curved tracks. The Overdecks are major donors to the museum, where some 100 kids made their own card-stock clocks and tangrams while sipping hot chocolate. (Parents could opt for a splash of Kahlúa in theirs.)

"We want math to be warm and fuzzy," says Overdeck. Which isn't to say it should be easy. Thanks to popular demand, at the end of February, Bedtime Math is rolling out a new, Einstein-like level of difficulty, "the sky's the limit," for tweens, teens and even adults. When it comes to end-of-the-day problem solving, why should little kids have all the fun?

Caribou and Bubble Gum 2 Bedtime Math problems x 3 age groups

PROBLEM NO. 1

PRE-K Alaska was the 49th state to join the U.S. How many states had already joined?



KINDERGARTEN TO SECOND GRADE

Of the 20 tallest mountains in the U.S., 17 are in Alaska. How many of them *aren't* in Alaska? **BONUS:** There are 200,000 moose and 900,000 caribou in Alaska. How many more caribou than moose are there?

SECOND GRADE AND UP

Alaska covers 660,000 square miles. If Alaska cut itself in half, how much bigger than Texas' 268,000 square miles would each half be?

PROBLEM NO. 2

PRE-K If you've been chewing a stick of gum for 3 minutes and chew it for another 4 minutes before it loses its flavor, how many minutes do you chew in total?

KINDERGARTEN TO SECOND GRADE

- If you try 12 times to blow a bubble-gum bubble and succeed one-third of the time, how many bubbles do you blow? **BONUS:** The largest bubble ever blown was 23 inches wide. If your head is 7 inches wide, how much wider than your head was that bubble?

SECOND GRADE AND UP

Americans chew an average of 300 sticks of gum each year. If you chewed at that rate, how many sticks would you chew each month? **BONUS:** The record for continuous gum chewing is 135 sticks over 8 hours. Assuming he chewed 1 fewer stick during the final hour than each of the previous 7 hours, how many sticks did he chew each hour?

