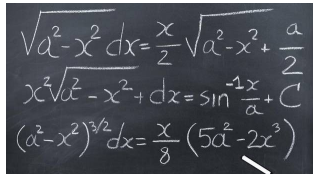


Solving the math-phobia problem – for both parents and kids

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(Tom Nulens/iStockphoto)
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To read about Christopher Danielson’s math chats with his six-year-old daughter and nine-year-old son, is to immediately feel inferior as a parent.

While grocery shopping with his daughter, a discussion about whether she can carry four cans of pumpkin to the cart becomes a lesson in two plus two. “What did we learn?” he writes of that exercise. “Decomposing numbers is fun.” A debate about how old his son will be when he can stay up to midnight on New Year’s Eve, turns into an algebraic algorithm based on the calculation that his bedtime gets later by half an hour each year. One morning, they guess the temperature, and then calculate how far they were off – presto, integers 101!

In my home, the last thing that bedtime negotiations afford is an algebraic math conversation. (Although, it might put them to sleep.) “Decomposing” numbers, for many math-phobic parents, will raise the spectre of a gone-but-not forgotten nightmare, otherwise known as high-school calculus.

Clearly, Danielson has an edge. He is a Minnesota college math teacher and curriculum developer with a PhD, whose online blog (talkingmathwithkids.com) is aimed at helping parents bring math into everyday conversations.

For those less-credentialed, algorithms are often best consigned to class, or, only when necessary, the kitchen table, where the “new math” textbooks baffle parents who never really got the “old math” the first time around.

(One late-night homework session at my house led to a humbling dispute with my 13-year-old about how to multiply mixed fractions; he was right.) Is it any wonder, under such duress, that so many families dread the subject?

But while the half-dozen math experts interviewed for this article were sympathetic, they also make a logical point: Our math-phobic culture is a factor in our children’s falling scores in international tests. Parents worry about math marks – and are even petitioning for a return to

basic skills and rote memorization – because, as research shows, knowing your numbers is linked not only to success in school, but also to good jobs in a high-tech age. A 2007 study, for example, based on U.S. longitudinal data, found that early math skills were a stronger predictor of future academic success than reading.

Parents who would never trash talk reading, freely diss math, as a subject they either loathed or flunked. “If you are afraid of a spider and you run around talking about your fears of spiders,” says Jo-Anne LeFevre, a psychology professor who specializes in math research at Carleton University in Ottawa, “should you be surprised that your kid is afraid of spiders?” Starting even before their kids can speak, parents buy into the public education campaign that reading is an essential foundation for learning. But, she asks, how often does math enter into everyday life? “Some families even turn off the TV, and say, ‘Now we are going to have reading time.’ But do we do it with math?”

Besides inadvertently passing down their own anxieties, parents also overemphasize the pencil and paper work, the root of so much tension at home. “We have trained rule followers, and some of us become good at memorizing the rules, and some of us don’t,” says Danielson. “But that’s not what we want. That’s the equivalent of someone who can read words, but can’t understand the story.”

A key to math success is what researchers call fluency – being able to work out calculations in your head, think critically about problems, make reasonable estimates, and assess whether the results on a calculator actually make sense.

Surprisingly, perhaps, fostering that kind of thinking at home looks a lot more interesting – and easier – than trying to jam those seven times tables into an eight-year-old’s brain. Scrabble isn’t just a word game, it also involves adding and multiplying scores, and mental math. Your son builds a Lego house. Can he guess how many pieces he will need to build a fence – “a perimeter” – around it? Your daughter needs to get to a 7 a.m. hockey practice; what time does she estimate she’ll have to get up?

A 2012 study published in the journal *Psychological Science* linked student success in high-school algebra to how well they understood fractions and division in elementary school – skills that can be developed by teaching your kids to cook. “Our job [as parents] can really be about talking about number relationships and the shapes we see in the world,” Danielson says.

Thankfully, that doesn’t require always finding the answer – that’s where school comes in. Sometimes it simply means asking the questions. If you are already racing to hockey, or playing Lego, there’s a math story (time estimations, spatial reasoning) in there somewhere, waiting to be told.