

The new 'new math' mystifies parents

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Thomas Terranova, 15, of Middletown works on factoring quadratic polynomials during a group session at tutoring company Mathnasium in Middletown.

PARENTS' VIEWS

We asked parents on Facebook whether their children's math work is much different than the math they remember. Have math homework nights occasionally become nightmares? Here's what they had to say:

Debbie Anne Dopko

: Yes, they certainly have. The only saving grace is internet links provided by the teachers themselves or places like www.algebrahelp.com/. My kids look at me with amazement

when I borrow and carry over. They do something quite unusual with a box that's divided into multiple squares and then cross sectioned. Very puzzling to me, but it seems to work for them.

Patrick Brennan

: Yes! And they don't borrow and carry over anymore, it's called something different. They need to send home math directions for the parents, too!

Bev Clancy

: The program is called Everyday Math, but it's hardly something anyone would use in everyday experience. They teach multiplication by breaking out the columns into boxes and arrays. There is no emphasis on memorization anymore. The end result is that (they) try to teach kids WHY $8 \times 7 = 56$ before they ever teach them THAT $8 \times 7 = 56$. Kind of like explaining the purpose of the foundation of a house and then building that house without pouring the foundation first. Our kids are being cheated.

Vanessa Kern

: Oh, my God. When my daughter tried to explain regrouping to me, I thought I had lost my last brain cell. I just kept saying, 'Why can't you just carry over?'

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Are you smarter than a sixth grader? Here's a typical sixth-grade math question, courtesy of the National Council of Teachers of Mathematics:

Utilizing knowledge of greatest common factors and least common multipliers: If my brother is on a Ferris wheel that has 14 seats, and I am on a Ferris wheel that has 21 seats, how many times do I have to go around before the Ferris wheel my brother is on goes around once?

Answer: Two-thirds.

What's going on in our schools? Visit our Home & School blog for more.

Navigating the charter school system

Tune in to APP.com at 7 p.m. Wednesday for our live chat with Learning Editor Alesha Williams Boyd and Carlos

Perez, New Jersey Charter Schools Association president and CEO.

Previously, guests from Save Our Schools New Jersey and the New Jersey Association of School Administrators joined us to discuss why New Jersey's charter schools have become such a hot-button issue. This week, we'll hear Perez's vision for the charter schools in our state.

Quick: What's 6 times 8?

The answer, of course, is 48. But how you get to that conclusion depends on whether you went to school decades ago or you're a child in school today.

A few decades back, students were taught multiplication tables — 6 times 8 is 48 and so forth; rote memorization and formulas were the order of the day.

Today, schools are focusing more on getting children to better understand why answers are what they are, that there are multiple routes to the answers and how to apply that understanding.

This isn't your mother's math, as plenty of parents struggling to help their children with homework will tell you. But as children head back to school this year and more districts incorporate common core curriculum standards, which are on the horizon for most of the nation, parents will find their children's math work shifting yet again — and that shift may move closer to the math parents remember, educators say.

Lois DeMarco said she doesn't remember being introduced to geometric concepts in second grade, like her son Patrick has been. Patrick, 8, a third-grader at Wayside Elementary School, had been called upon last year to find perimeters of objects, combine triangles to make a square, predict lengths and go around the house with a metric ruler to measure things, DeMarco said.

Nor does the 51-year-old Ocean Township resident remember being given as many word problems to solve at as young an age as Patrick was last year.

"I just remember adding, subtracting, dividing and multiplying, and reinforcing it over and over again," DeMarco said. "I don't remember geometry and word problems, trapezoids, rectangles and triangles."

"This is stuff I remember learning at a higher level," DeMarco said. "It's not two-plus-two anymore."

Connection of ideas

The "new math" of the 1960s, which DeMarco grew up with, emphasized abstract concepts like set theory and number bases other than 10. It befuddled many parents and eventually fell out of favor after being criticized for ignoring traditional topics like arithmetic.

But, "in the last 10 to 20 years, in light of technology, there's been a shift in focus from teaching kids to be human calculators, rote computational skills, to really having a deeper understanding, like what does it mean to multiply, what does a fraction mean, getting that deeper understanding," said Linda Gojak, president of the National Council of Teachers of Mathematics.

"It's not the new math," she said. "It's the same math, and it's trying to teach for a deeper understanding. It's different to parents, most who have learned very rotely."

Gojak said mathematics today is less about yesterday's rules and more about getting kids to see that mathematics is "a connection of ideas," for instance, that long division is the undoing of multiplication. Children learn that 6

times 3 is equal to six groups of three things, she said.

“They actually see what 6 times 3 looks like,” she said.

From skills to application

Sue Zielinski, math and science supervisor at Red Bank Regional High School, said she has seen math teaching go from being “more skills-based” to “application-based” over her career in education.

Zielinski said probability is taught by rolling dice or tossing a coin a number of times and seeing what happens. In multiplication, students are asked to make area models.

Mathematics is not just about applying a formula anymore. It entails thinking about the problem and talking about it, Zielinski said

Today’s children are learning there is not just one way of doing multiplication, and the new ways seem foreign to their parents. For instance, rather than multiplying and carrying over on paper, students learn that they can find a series of partial products and add them in their heads. For instance, 9 times 17 is equal to the sum of 9 times 10 and 9 times 7, Zielinski said.

'That's not how I learned it'

“Parents are often looking at you, saying, ‘That’s not how I learned it’,” Zielinski said. “But when (the kids) are out on the street, they can do it in their heads.”

Sylvia Blake of Neptune has been there with her 12-year-old son.

“Whenever he asks me to help him, I start doing it the old-fashioned way,” says Blake. “He’ll say, ‘No, Mom. We don’t do it that way anymore. See, Mom, this is how you do it’.”

Carla Scarabino of Middletown and her daughter, Kate, 12, say they, too, see the generation gap in the ways they approach math. Kate, a student at St. James Elementary School in Red Bank who takes private instruction at mathematics tutoring company Mathnasium in Middletown, says she actually prefers her mom’s methods.

“I think long division teaches you more, because you’re writing it all out, but I was just listening to the teacher,” says Kate, who said she was particularly challenged by word problems until she received instruction at Mathnasium. “At one point I couldn’t do my homework without yelling.”

“The good news is they do problem-solving, which I think is good,” Scarabino said. “When they start doing things with all these big numbers, I’m thinking, ‘Wow, we never have to do this in real life.’”

Critics: Kids not mastering skills

John Napoli, who owns two Monmouth County Mathnasium franchises, said with the way math has been taught in the past decade or so, children are not mastering the skills they need.

“Overall, you’re finding more of an attempt to dabble, teaching and moving on, and the child never masters anything,” said Napoli, whose tutoring centers are in Ocean Township and Middletown.

“I think of math as a progression, like building blocks,” Napoli said. “You need to understand the first step before you take the second step. You need to master a topic.”

Traditional math pushes back

Incorporation of the Common Core Standards, which have been adopted by 45 states, will address that, educators say.

Last year in New Jersey, the common core standards were implemented in kindergarten through second grade, and this year they will be introduced in grades three through five and at the high school level, said Melissa Axelsson, mathematics program manager for the New Jersey Center for Teaching and Learning.

“This is very traditional math, it’s pushing back,” Robert Goodman, executive director of the New Jersey Center for Teaching and Learning, said of the Common Core Standards and the curriculum the center has created to address them. “I wouldn’t say it’s back to basics, but it’s close to that.”

For example, common core standards will require students develop fluency in multiplication facts and what those facts are about, says Karen Kondek, director of curriculum for Marlboro Township Public Schools.

Students shouldn’t be able to move on to a new grade level without mastering benchmarks, Kondek said. As a result, there won’t be as much repetition and review of previous years’ work, she said.

“They’ve got to be able to do it quickly and fluently, so there will be some of the return to ‘One, two, buckle my shoe,’ and that kind of thing,” Kondek said.

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