

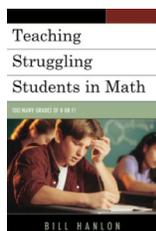
Nevada Public Education News



Math is still math!

Bill Hanlon

Too many parents are becoming concerned about the “new” math associated with the recent adoption of the common core standards. Let’s be clear, math is not new. Students are still



required to learn their basic facts and standard algorithms. So, as parents, you still should be able to assist your own child using your own knowledge. Don’t let the common core become an excuse not to be involved in your child’s academic education.

On the other side of the court, school administrators and classroom teachers need to keep families engaged in their children’s education by not blowing them out of the park with “impressive” looking alternative algorithms. That can be accomplished by ensuring that parents are informed of the methods and strategies being taught in class that the students will be sent home to practice.

Let’s take a peek at few examples. Many parents learned the math facts by pure memorization. That’s neither effective nor efficient. While not part of the common core, over the years we have suggested strategies to teach the facts to make it easier for students to learn and cause less frustration at home. So, we ask teachers to have students identify patterns to make learning the math facts easier. For example, when subtracting basic facts, if the number being subtracted in the ones column is a consecutive number larger, the answer will be 9. $13 - 4 = 9$, $15 - 6 = 9$, $17 - 8 = 9$ (see the digits written in red).

Another strategy to help students learn the subtraction facts is subtracting consecutive even or odd numbers. If the number being subtracted in the ones column is a consecutive even or odd number larger, that answer is always 8. $13 - 5 = 8$, $14 - 6 = 8$, $12 - 4 = 8$. If parents knew how we were asking students to learn those, they would be more able and apt to help them. Otherwise, they will use just memorization at home. These patterns help the students learn their facts.

If teachers are using these strategies, they might have the students write down the strategy at the top of the homework assignment so parents can augment what is happening in class. Otherwise, if parents can not help, they might look bad in front of their own kids.

An added benefit to including these strategies is the students should be able to explain, communicate, verbalize that information to their parents. That also helps the students learn.

The common core does push for development of “alternative” algorithms. I know this is going to cause issues for parents unless those strategies are communicated to parents in a way they understand will help their child learn. There are all kinds of ways to add, subtract, multiply and divide. Staying with subtraction, the Standard Algorithm will continue to be taught. Other methods will also be taught for subtracting. There is the Austrian, the Addition Method, Subtract from the Base Method, the Same Change Method, the Add-Subtract Method, the Count Up Method to name a few of the alternative algorithms

If students are sent home with these alternative methods without explanation, then parents will not recognize or be able to help their children with their homework. That will result in frustration. For many students, that translates to this: if my Mom can't do it, why should I have to do it?

As a classroom teacher, rarely did I teach the alternative algorithm as a competing algorithm to the standard algorithm. Typically, I would introduce those methods under the guise of what has been called “mental” math.

As an example, if I were asked to compute $93 - 48$, I would rewrite the problem in my head (takes a little practice) as $95 - 50 = 45$ using what some people call the Same Change Method.

I could not subtract 48 from 93 in my head, so I looked for a compatible (nice) number close to the 48 being subtracted - that was 50. Since I added 2 to get 50, I added 2 to the 93 to get 95. Now subtracting those equivalent arithmetic expressions is much easier $95 - 50 = 45$.

Another example of mental math, now deemed an alternative algorithm, is the Counting Up method that most of use when making change. For example, $122 - 87$. Given that problem, I would count up from 87 to 100 in my head, that's 13, then add the 22 to get from 100 to 122 for a result of 35. $122 - 87 = 35$

The big difference for me is I would typically develop concepts first, then teach the standard algorithm. After that, I used the Properties of Real Numbers to show the students how to manipulate expressions to make computations easier or be able to compute mentally.

My greatest fear is the interpretation of the common core will result in students memorizing competing algorithms at the direction of their teachers. In other words emphasis will be placed on learning alternative algorithms – not learning to subtract.

The primary authors of the common core have said they were not trying to tell teachers how to teach, but I think they really are doing just that.

Prior to the common core, students taking high school geometry were taking mainly Euclidean Geometry with chapters on Analytic and Transformational Geometry. The common core has pushed Euclidean and Analytical Geometry aside for the primary authors bias towards Transformational Geometry.

Now, what's important? In any of those forms of geometry, the math is the same. In other words; The Triangle Sum Theorem still states the sum of the interior angles of a triangle is 180° . So what is important, that they know that, understand where it came from and can apply it or do they have to learn it only through the prism of transformational geometry???

As we have seen, testing drives instruction. The primary authors of the common core wanted their bias heard to get their new common core books published, let's hope the testing people focus on what we want students to know, recognize, understand and are able to do.

Like the NCLB testing, these new tests will either shape what we expect of students or will result in another failed initiative - this time called the common core.

There are no shortcuts to increasing student performance. American students can achieve, but what we should understand is *what works is still work*. The simple fact of the matter is; math should be taught in ways that prepares students to be successful no matter what test is being used.

Many states have bought into the common core as the Holy Grail. While we ask students to question, to understand, policymakers have just bought into something very few understand. I don't know anyone who has ever bought into something that was 100% satisfied. But that is what is happening across the nation. Right now it is not politically correct to ask questions concerning the common core. I was an early supporter of the common core and continue to support those standards – but they do need to be tweaked ` and anyone who does not know that does not know the standards.

Parents will not support these standards if they don't know how to help their own children. For parents to complain that math has changed as a result of the common core is very disturbing. The idea behind the common core is to increase student understanding, being more able to answer the “why” behind the math being introduced.

Educators can help parents support their students by clearly communicating to parents the strategies and algorithms they are using – especially if they significantly different from the way they learned. But the emphasis has to be based on “what students know, recognize, understand and are able to do”, not doing it in a different way expressed by one of the primary authors of the common core.