

Clarkston School District's "Path to Math" a Success

Hundreds of parents, grandparents and community members filled the halls of Heights Elementary School Tuesday, January 30th to gain a better understanding of the Clarkston School District's approach to teaching math for 21st Century learning. Principal Samantha Ogden and her staff came up with the idea of having a math night to invite the community in to learn about how students are learning math through new strategies and the newly adopted Developing Math Thinking (DMT) curriculum in grades K-6. Principal Ogden stated, "Through our 'Path to Math' night we were hoping to communicate how connected the students are from kindergarten through 6th grade in their use of models and vocabulary. I adored seeing the parents enjoy "doing math" with the students across all grade levels."

The new adoption, aimed at addressing Washington State's learning standards and the Common Core, appears very different than the math that mom and dad grew up with and often leaves parents scratching their heads when kids come home with questions. The math night was part of the district's effort to help parents and families see that maybe different is better.

While most of us parents learned math through a heavy dose of math fact memorization, drilled practice, math tricks, and memorized steps (also known as algorithms), today's learning of math aims to go deeper and allow students to truly understand what goes on in the math problem. While observing 4th grade students teach how to add and subtract fractions with unlike denominators, one parent could be heard saying "Don't you just have to find the same bottom number (denominator)?" Exactly! Except do we really know why that works? Heights 4th grade students did as they explained, through the use of models, what is actually happening when you find a common denominator.

Moving around the Heights gymnasium, some two hundred parents and community members learned from students Kindergarten through 6th grade about this "new math" that so many are apprehensive about. Students taught, laughed, and drew model after model showing how the math works, how to compose and decompose numbers to show multiplication of numbers I don't recall being asked to multiply in 2nd grade (or even 4th for that matter). Parents listened intently, impressed with student skills, but still some were asking, "why not just do it the way that we were taught and the way we learned it?"

Historically, math instruction has focused on rote memorization and following only a specific set of steps that did not allow multiple routes to the right answer. At some point in a student's learning this led to frustration and a "dead end" in math learning. Ask most adults how they feel about math and they are negative. Why? Because, more than likely at some point they in school they just couldn't get it anymore because of lot of what they were doing was memorizing without understanding.

Dr. Jonathan Brendefur, President of DMTI (Developing Mathematical Thinking Institute) explains it this way, "when teaching mathematics, we need to have a balance among numbers sense (or flexibility with numbers), conceptual understanding (knowing how math works and connecting it to real-life situations) and procedural understanding, then most people who only memorize the mathematics have difficulty or become frustrated with mathematics at some point in high school." District Math Lead, Andrea Dale, adds, "We want kids to not only be able to understand how to solve computational problems, we want kids to have a deep understanding of how math is connected to real life. We hope to raise up a generation of kids who don't skip the story problems at the end of the assignment, but rather they think about how the math they are learning reflects their world every day."

Over time everything seems to change; so does the teaching and learning of mathematics. But $2 + 2$ still equals 4 and that hasn't changed. How students choose to model the problem has. That's what's scary to us parents and that is why it can be a challenge to help our kids. But finding multiple ways to find the right answer, multiple ways to show how you solved a problem? That's everyday life. Sure $2 + 2 = 4$, but it is also $1 + 1 + 1 + 1$ or  $2 + 0$  $= 0$ 

So, while this "new math" seems different and foreign to the ways we parents learned mathematics, its goal is to address the issue that math in the past did not; which is that a certain percent (approximately 20 percent) will be successful in math no matter what, but the other 80% will hit a dead end and become unsuccessful when memorization and "math tricks" fail them. The Clarkston School District's new math adoption aims to support 100% of students for today and in the years to come giving them a variety of paths to math success.