

Transforming Our School's Math Instruction with Marilyn Burns and *Do The Math*

Math educator Sara Liebert explains the positive impact Marilyn Burns and her instructional support have had on Title 1 students in San Francisco, California.



John Muir Elementary School in San Francisco, California, is a Title 1 elementary school. I work at John Muir as the Instructional Reform Facilitator, focusing on supporting teachers in math, and I teach a fifth-grade math class daily. This was my first year in the dual role; for the previous 10 years I was a classroom teacher for grades 3–5.

I had the opportunity to meet Marilyn Burns when she observed a guest teacher in my fifth-grade classroom during the spring of 2015. She reached out to me after she observed the lesson in my classroom and asked me, “What are you going to do tomorrow?” I had no idea! Luckily, she offered to chat and think through some next steps. From there, our collaboration around my math instruction continued, and Marilyn began to visit Muir to try out and model lessons for me with my own students. It was an extraordinary and beneficial learning experience for me.

The following school year, 2015–2016, I was assigned to teach fourth grade. I had spent the previous five years teaching fifth grade and had never taught fourth grade before. To prepare, Marilyn and I continued to collaborate throughout the summer around my new grade level. At the start of the school year, Marilyn and Lynne Zolli came to my classroom and individually interviewed students to assess their numerical reasoning abilities. This helped us gain an idea of what the students knew and helped inform me about how to begin their math instruction.

A Structured Approach to Help Close Learning Gaps: Number Talks and Math Menus

We were presented with a dilemma. All of my students had large numerical reasoning gaps and only had the math skills of beginning-of-the-year second-grade students. Marilyn and Lynne recommended that I look at the *Do The Math* modules and consider using them to meet the students where they were mathematically and provide intervention in order to help them catch up. As a result, I decided to try out *Do The Math* with my fourth graders to teach the math standards that relate to whole number addition, subtraction, multiplication, and division, and also fractions. Marilyn and Lynne were available to help me understand the progressions of the lessons and model lessons with my students. We spoke weekly by telephone, and they visited my classroom many times throughout the year. In early spring, they interviewed students again to assess their progress.

I structured my 70-minute math block with a combination of number talks, *Do The Math* lessons, and a math menu. Before meeting Marilyn and Lynne, I had been doing number talks daily, but using *Do The Math* and setting up a math menu were both new to me. I had used math

centers, but I had never been able to keep up with the organizational component that they required. (For information about math menus, two resources from Marilyn were helpful. One is an article she wrote for **Educational Leadership**. The other is her more recent **blog post**. I have found that the math menu provides time for students to engage with concepts and skills through games and lesson extension activities. Also, it provides me with a way to differentiate instruction and better meet all of my students' needs.)

A Professional Breakthrough: Understanding “Why,” “What,” and “How

After 10 years of classroom teaching, I felt that this year I was finally teaching math successfully. The structure of *Do The Math* gave me much needed support. Each five lessons in the Teacher Guide begins with a letter written by Marilyn in which she summarizes the learning the students will engage in and why. The “why” that she describes is what stood out to me—it was the first time a curriculum or math specialist had explained to me why the math was being taught the way it was, what the students had done previously to lead up to the new skill, and how these lessons were going to further students' understanding and skills. I felt as if I was learning alongside my students.

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teaching math successfully.

Another component that helped to change the way I was teaching math was the scripted questioning that is provided for teachers. *Do The Math* lessons provide teachers questions to ask students both about the math they are learning and their methods for solving problems. These questions aren't related to procedures but are questions that helped me understand what my students understand and their misconceptions. The questions also promote partner and group talk, which have long been a staple in my classroom.

Classroom Breakthroughs: Students Engaged and Confident

Within the first month of teaching my first module (Addition and Subtraction A), I began to notice changes in how my students interacted and engaged in math class. The first week of school, I had numerous students who wanted to put their heads down during math and completely disconnect. It was as if they had never felt a successful moment around math and decided that learning math just wasn't for them. However, as they noticed that they could be successful with the math, heads started to rise, backs straightened, and students became

engaged! Not only were they engaged, they were enjoying math class. As my students' confidence and willingness to learn math grew, so did their understanding. Using *Do The Math* with my class was incredibly successful. Based on the results from several assessments, my students showed significant growth.

The following school year I moved into the dual role of being the school math coach and also a math teacher. I taught math daily to the same class of fourth graders who were now fifth graders, and I spent the rest of the day supporting other teachers in the school. When our staff looked at our whole-school math data, we noticed that a vast majority of our students were in need of math intervention instruction. We made the decision to try to change the way we were teaching mathematics at our school. We knew that we needed to build students' number sense and place value understanding, and strengthen their ability to reason and understand mathematical concepts.

"Doing" The Math School-wide: Professional Learning, Collaboration, Modeling, Delivery

We decided to use *Do The Math* in our grades 2 through 5 classrooms to teach whole number and fraction concepts and skills. We created a

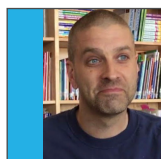
scope and sequence for each grade level based on recommendations in the **Response to Intervention Package for Grades K–5**. Teachers dove in with excitement at the start of the school year and used their grade-level collaboration time to plan with their colleagues and deliver lessons. As the school's math coach, I modeled lessons for teachers and attended their grade-level collaborations to offer support as they planned and learned to use the modules.

We provided teachers further support through professional development sessions that engaged them in understanding the math we're teaching, using *Do The Math*, and incorporating number talks and math menus into their math instruction. These sessions were an integral part in helping to support the math teaching in our school.

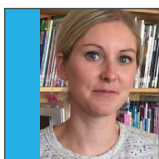
At the end of the school year, I asked teachers if they were willing to be interviewed about their experience using *Do The Math* with their classes. All were willing, and their comments provide a look into what they saw as particularly helpful about using *Do The Math* with their classes.



Lisa Alley, a second-grade teacher with 28 years of classroom experience, discussed what she appreciated about the *Do The Math* lessons.



Justin Stoddard, a third-grade teacher with 11 years of classroom experience, also reflected on what he appreciated about *Do The Math*.



Kristin Matthews, a second-grade teacher with 9 years of classroom experience, commented on the features of *Do The Math* that she found particularly helpful.



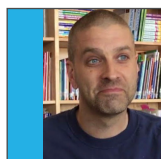
Lisa Cowles, a second-grade teacher with 10 years of classroom experience, was skeptical at first, but then was surprised at her experience using the lessons.



Joe Mannarrino, a first-year teacher teaching fifth grade, had a different view of the scripted lessons.



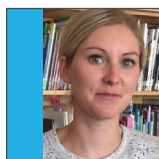
Rashida Carter, a first-year teacher teaching fourth grade, especially liked the timeliness of these assessments.



Several of the teachers made general comments about the benefits they experienced from using *Do The Math*. Justin Stoddard talked about the engagement of his students.



John Flores, a third-grade teacher with 5 years of classroom experience, referenced his own difficulty teaching math.



Kristin Matthews commented on the technology tools that come with *Do The Math*.

A Note from Marilyn Burns

It's been wonderful to have the opportunity to work with Sara and with the entire John Muir Elementary School staff. It's a way for me to stay connected with classrooms and continue to learn from students. And it's wonderful to see how much the teachers are invested in and enjoying teaching math. I look forward to continuing to share my experiences this year on my blog and through Twitter @mburnsmath.

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