

Moving a School With Number Talks



At Shields Elementary School in Lewes, Delaware, we love our math curriculum, Investigations, but wanted to add discourse to incorporate speaking and listening standards into our math instruction. Our journey began after our building math specialist and fifth-grade lead math teacher came across the book *Number Talks: Helping Children Build Mental Math and Computation Strategies, Grades K-5*. Our number talk adventure has been a bit bumpy, but each year we continue to improve our practices. It takes a lot of time, reflection, and professional development, but it is well worth the results.

The Basics of a Number Talk

According to MathPerspectives.com, a number talk is a five- to 15-minute classroom conversation around purposefully crafted computation problems that students solve mentally. The basic format of a number talk involves three steps. First, the teacher poses a problem. Next, students mentally solve the problem, share their answers, and share their thinking while the teacher records it on the

board. The final step involves the class agreeing on the correct answer. These steps are repeated, and the problems get progressively harder.

At Shields Elementary, the purpose of number talks is twofold: They're an effective method for students to work on their computational fluency and mental mathematics, and they engage students in math discourse with their classmates to prove or disprove their mathematical thinking.

Number talks have become a staple in our math instruction for numerous reasons. The technique is a great way to build mathematical fluency through conceptual understanding without the typical “drill and kill.” Furthermore, the technique helps to build a classroom culture where students can make mistakes and share misconceptions. Lastly, number talks encourage student conversation because students are given the opportunity to share and explain their thinking verbally.

Our Journey

During our first year of implementation, we asked teachers to try number talks as a short part of their math class. This wasn't a mandate, but an opportunity to try out the new concept. A math specialist facilitated number talk professional development on Chapters 1 and 2, as well as number talk videos. The initial year was spent building a culture of learning.

In the second year, we committed to number talks with a change in our professional learning community structure and district-level professional development related to number talks. Also, our math specialist began modeling number talks for interested teachers, and lead math teachers modeled lessons for other teachers.

During this time, our school improvement team set classroom expectations that we were to begin incorporating number talks during our response-to-intervention blocks. We say that this was “really year one” because buy-in occurred during this year.

During the third year of implementation, number talks became a part of our school day and we began to improve our practices. That year, our math specialist advanced from primarily an interventionist to more of a coaching model, which allowed her to support our teachers by planning, co-teaching, and reflecting on our number talks.

Also during the third year, we grew in our practices by centering our

professional development around *Classroom Discussions in Math: A Facilitator's Guide to Support Professional Learning of Discourse and the Common Core, Grades K-6*, by Nancy Anderson, Suzanne Chapin, and Cathy O'Connor. With this book, we made "talk moves" universal from kindergarten to fifth grade, where students worked on repeating each other's answers, paraphrasing a classmate's idea, and adding onto an answer. Number talks became a mandatory part of our math time.

At the end of the third year, student achievement soared. The percentage of third-, fourth-, and fifth-grade students meeting or exceeding the standard on the statewide assessment rose from 85 percent to more than 95 percent. Furthermore, we saw a huge difference on our universal math screener and STAR math results from fall to winter.

Today

As we moved into our fourth year, we continued to advance our use of number talks. Our professional learning communities have now morphed into learning labs, and we have implemented a full-fledged coaching model where our math specialist plans, co-teaches, and reflects with grade-level teams on their number talks. Our talks are now seamlessly used as formative assessment, which enables teachers to see what students know and to use that information to drive instruction. Our veteran teachers are the leaders in their grade level for our new hires.

Number talks have now become integrated into our school culture and I consider our school a model for what math instruction should be. It always amazes me to see our students sharing what they know. The constant student engagement and amount of growth that has occurred during the past four years has surpassed my expectations. ■

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