

Setting Up the Mathematical Community

Building the Math Community: Setting Norms for Discussions

Creating a classroom culture that allows all students to share ideas, listen to, and learn from each other takes a lot of thought and work on the part of the teacher. Since these skills and practices develop over time, the first month of school is a time when teachers begin to establish the classroom atmosphere that they would like to see unfold throughout the year. An important component in developing an inclusive community is helping all students learn to participate in mathematics discussions, including those who don't feel confident about their math skills and those who opt to stay on the periphery.

During the first weeks of school, Leah Schultz, who teaches in a Grades 1–2 combination classroom, puts particular effort into communicating her expectation that everyone participates and shares ideas in math discussions and providing all her students with the elements they need to do so successfully.

Before I can talk with my students about what makes a good math discussion, they need to have some idea of what mathematics discussions will look and sound like. They must have some experiences on which to base their ideas. Consequently, I feel that students need to experience a good discussion before they can articulate what makes a good discussion.

I begin by making my expectations clear through my actions and words as we learn the basic mathematics routines of the classroom. For example, I expect that “everyone can and *should* participate in the math we do as a group.” In the morning during *Calendar*, we have a routine that helps the students think about breaking a number into two parts. I make a cube train to represent the day’s date, so if today is the 12th, I have a train of 12 cubes. I break off some and put them behind my back. The class counts how many cubes are still showing and tries to figure out how many are behind my back.

I have a multiage class, so when I teach this routine, the second graders who were in my class last year already know what to do. On our first days of this routine, I noticed that some of the new first graders were participating. Others were not, perhaps because they were not sure how to do it, because it was hard for them to pay attention, or because they already had the idea that they couldn’t or didn’t need to.

I made sure during those initial discussions that we shared strategies that all students could understand. In the beginning, the students most eager to share were the ones who knew what to do and got an answer easily. For instance, when no one talked about counting on their fingers or using the calendar to count, I specifically asked if anyone used those strategies. This question was an important one because several of my younger and more struggling students could use this strategy as a way into the math problems. I found getting this strategy into the conversation helped make the mathematics accessible.

In the next days when there were students still opting out of the sharing activity, I let my expectation be known by saying:

I know that *everybody* can figure out how many cubes are behind my back. Some people might count on their fingers; some people might use the calendar or a number fact that they know. I am going to wait for everyone to have an answer, so use a quiet ready sign to let me know that you have an answer.

Then I waited. Most of the students gave me the “thumb up” quiet ready sign, but there were a few students who, I could tell, had not engaged in the activity. I politely asked one student if he was ready and he said “No.” I told him, again politely, that we would wait. “We’ll wait until everyone has had enough time.” Since almost everyone was eager to share, they waited patiently. I cannot stress enough that this process was not a punitive one. Rather, by waiting, I was modeling for students the importance of waiting until each person had a strategy for solving the problem.

I watched myself and realized that in these first few weeks, I try to make it clear that we are a mathematics community

that includes everybody. When I say that I want everybody to engage in a problem and then give time to solve it, *I really do mean that everybody can solve it*. It is not easy to get that across to the struggling learners in the room who often do not include themselves in the group that can “do it.” I find myself working hard to let students know I expect them to find an answer without putting too much pressure on them or singling them out.

Some students are surprised when I wait for their answer. They are already expecting that they cannot do what others do, so they remove themselves from the expectations and are surprised when I plunk them right back into the group. Others feel discomfort and hope that I will forget them again so that they can slink back to the shadows. Over time, they realize that I will not, and they begin to rise to the occasion. I always accompany my expectation with strategies that make the math accessible to them. It is a two-sided deal: “You make sure you try to participate, and I will make sure that I give you the tools to do so.” I want the students to know that our math discussions require all our voices. So when I say, “Whom haven’t we heard from yet?” it lets the students know that I don’t want any voices missing from our discussions.

Later, we will have an explicit conversation about what makes a good math discussion. For now, we have these initial experiences that will enable students to have that discussion in the near future.

Ms. Schultz finds that being explicit about her expectations that all students participate in classroom discussions must be accompanied by actions that convey how serious she is about this commitment. She carefully builds experiences of participation among all her students so that everyone can feel and be an active member of the math community. If students can see themselves as contributing members of the community, they will continue to participate. If students exclude themselves, for whatever reason, and the teacher does not actively work to bring them into the conversation, they will continue to exclude themselves.

Questions for Discussion

1. What are the specific strategies that Ms. Schultz uses to make her expectations for class discussions explicit? What does she do to help her less experienced students, particularly the first graders who still rely on less developed counting strategies, feel confident about participating in these discussions?
2. In your class, how do you communicate through words and actions your expectation that everyone should participate? How do you help the least confident students develop and share their ideas?

Modeling, Molding, and Maintaining the Classroom Community

Carly Fredericks has two goals in mind as she begins the school year. The first is to get to know each of her first graders so as to foster and support the learning of each student throughout the year. Her second goal is to create a classroom community where students are able to learn and work together. These goals are closely related, and Ms. Fredericks recognizes that achieving them takes time. In this case, Ms. Fredericks shares how she lays the groundwork for creating a positive and supportive learning environment that is responsive to the needs of each learner and how she builds on that foundation throughout the year.

It is important to take time at the beginning of the school year to establish routines and expectations that help to build a safe and, hopefully, exciting environment for learning. Regardless of whether the focus is literacy, science, social studies, or math, my goal is to support each student’s own journey. I have come to realize that establishing a community that recognizes and meets the needs of each individual and fosters understanding of the subject matter takes time and needs to be modeled, molded, and maintained from the first day of school until the last.