

# Setting Up the Mathematical Community

## Happy New School Year!

*Building a math community involves adults and students working together to create a culture that will enable each person to be productive and become excited about mathematics. In this case, Tara Thompson reflects on her goals for her students as they develop into a classroom community—in particular her goal of creating a safe environment “that encourages the students to be (or become) risk takers.” Ms. Thompson recognizes that to take risks, students must feel safe about expressing their ideas about the mathematics they are working on.*

I want my students to know that we *talk* about math. I want to help my students see the importance of discussions—of participating in discussions and valuing the ideas of their classmates. I try very hard to let them know that I am interested in their ideas and that questions are important. I ask students what they think all day long. I model listening intently, and I often restate what I hear them say to provide an example of ways to engage in productive conversations.

Here are some strategies I use to encourage participation.

1. I am always asking questions:

**“Does anyone want to tell us what you think the answer might be? Even if you’re not sure or if it feels like a ‘guess’ right now, it’s okay to take a chance and tell us your idea.”**

As the year progresses, I want students to show how their ideas and solutions are based on evidence and reasoning. However, at the beginning of the year, I find that giving them permission to say what might feel to them like a “guess” frees up some students who would otherwise be reluctant to speak. Because many of these “guesses” are actually based on good mathematical thinking, I take the opportunity to point out how the idea or answer they expressed was based on what they knew.

2. After a discussion is underway, I ask if there is anyone who has not had a chance to say something out loud yet.

I tell them that I want everyone to have a chance to share their ideas.

3. Sometimes when many students have something to say, I ask the students to turn to their neighbors and share their ideas. Talking in pairs lets everyone have a chance to respond in a nonthreatening manner. It also serves as a kind of rehearsal by giving students a chance to try explaining their thinking to other students. They can practice clarifying their thinking in response to other students’ reactions. In addition, I have an opportunity to eavesdrop on the conversations and identify ideas that can be shared with the whole class.
4. During discussions, I ask someone to say in his or her own words what he or she heard another student say. Asking for a restatement helps the students know that they should be listening, since I might ask for this at any time. In addition, restating can help to slow a discussion down when an important idea is shared that I want to make sure is really heard by all. If an idea cannot be restated, I ask the class if they would like to hear it again. This strategy is also useful when I’m not clear on a student’s thinking! Hearing the idea explained by someone else can often clear it up for everyone.
5. We talk about the role of mistakes in our classroom and about being confused. I encourage students to think of mistakes as opportunities to learn something new. When I sense that confusion is in the air, I congratulate the class and tell them that they have found a really important idea: If it was a simple idea, we wouldn’t be confused. I assure them that we’ll work together to figure it out. We talk about what confusion feels like and how it feels to figure out something hard. It’s important to acknowledge the negative feeling that confusion can bring. At the same time, helping students have a more positive emotional reaction to confusion can turn a situation that could be frustrating and unproductive into something challenging and productive.

*Ms. Thompson begins the year aware that students enter her classroom with differing ideas, experiences, and fears related to participating in mathematical discussions. Through careful modeling of her own interest in their thinking and their questions, she helps her students learn to respond thoughtfully to each others' ideas. Through emphasizing that people's guesses can give us great new ideas to think about, that mistakes are opportunities to learn something new, and that confusion is an important part of learning, Ms. Thompson helps create a safe atmosphere for her students in which they can become risk takers in the mathematics classroom.*

### **Questions for Discussion**

1. What are some of the issues Ms. Thompson considers as she works with her students to create a safe and productive mathematical community?
2. As the year begins, what ideas, experiences, and fears might your students have about expressing their mathematical ideas? In what ways do you allow students to talk about these issues?
3. What strategies do you use to encourage participation and risk taking in mathematical discussions?