Classroom Norms to Support a Culture of Figuring Out

Science Classroom Norms

Classroom Norms	
Respectful Our classroom is a safe space to share.	• We provide each other with support and encouragement. • We share our time to talk. We do this by giving others time to think and share. • We critique the *ideas* we are working with, but not the *people* we are working with.
Equitable Everyone's participation and ideas are valuable.	• We monitor our own time spent talking. • We encourage others' voices who we have not heard from yet. • We recognize and value that people think, share, and represent their ideas in different ways.
Committed to our community We learn together.	• We come prepared to work toward a common goal. • We share our own thinking to help us all learn. • We listen carefully and ask questions to help us understand everyone's ideas. • We speak clearly and loud enough so everyone can hear.
Moving our science thinking forward We work together to figure things out.	• We use and build on other's ideas. • We use evidence to support our ideas, ask for evidence from others, and suggest ways to get additional evidence. • We are open to changing our minds. • We challenge ourselves to think in new ways.

Two common problems with the ways classroom norms are often implemented are 1) they tend to be focused on behavior rather than sensemaking and 2) they often align with dominant cultures.

OpenSciEd materials rely on students collectively figuring out science ideas through productive talk. This requires a classroom culture where all students feel like it is safe to participate and productively struggle together as we make sense of phenomena and build science ideas over time. The development and ongoing use of classroom norms focused on figuring out can support collaborative sensemaking.

We also know students come to our classrooms with a variety of cultural and linguistic experiences and ways of knowing. These resources are essential to the community and should be leveraged to help develop and push all students' learning forward. However, often particular modes of communication and demonstrations of knowledge are valued over others. Those modes are often associated with behaviors of dominant cultures (White, male, cisgender, English speaking, etc.).

OpenSciEd supports an approach to norm-building that encourages students to share ideas in the modes that work for them. As we develop norms with our students, we need to keep two key questions in mind:
- How can we co-construct norms that productively move our science ideas forward AND make all of our students feel respected and valued?
- How can we co-construct norms that reflect the experiences and values of all students versus only reflecting norms and values of dominant cultures?

Norms to Support Productive and Equitable Participation

OpenSciEd suggests four science classroom norms: 1. Respectful, 2. Equitable, 3. Committed to our community and 4. Moving our science thinking forward.

Respectful

For students to take the risk of making sense of complex ideas with their peers they need to feel safe and know that they will not be ridiculed or mocked. Establishing and enforcing norms that work to make the classroom a safe space to share is a prerequisite for productive talk. Providing each other with support and encouragement, sharing time to talk, and critiquing the ideas we are working with, but not the *people* we are working with are some norms that can support respect. One way to support students is to have a discussion with them about what might prevent someone from participating in a discussion. Then brainstorm together agreements the class can make that might help **all** students feel comfortable sharing ideas. Explicitly addressing the idea that disagreements are an essential part of making sense in science, that these disagreements can sometimes feel like conflict, and then brainstorming ways that we can disagree with others' *ideas* is also essential.

Equitable

If we are serious about the importance of discourse in helping us figure out science ideas together, then *all* students need to have access to the conversation. This does not mean that every student has to talk during every discussion, however it should be clear that they are welcome and expected to participate. Discussions are not equitable if a few students dominate the conversation or if they assume that certain students will carry the discussion. Norms to support equitable discussions include monitoring our own time spent talking, encouraging others' voices who we have not heard from yet, and recognizing and valuing that people think, share, and represent their ideas in different ways. One strategy to help students who may be reluctant to participate is to ask them to simply repeat what someone else has said, in order to help clarify a classmate's idea. This strategy, along with revoicing an idea allows students to begin to be involved and allows others to hear the idea again so that they can work with it.

Committed to our Community

We are working to "get smarter together". This means that WE learn together and it is not enough to just share our ideas without connecting to others. Establishing norms around being prepared and focused during the discussion are important. Developing the idea that we all have a responsibility to our learning community to come prepared, share our thinking clearly and loudly enough for all to hear, and that we listen carefully and ask questions is important. Encouraging students to contribute ideas even when they are not sure and celebrating ideas (both correct and incorrect) goes a long way in supporting these norms.

Moving our Science Thinking Forward

We engage in these academically productive discussions in order to deepen our understanding and make sense of complex science ideas. Here we are talking about rigorous conversations where the focus is on reasoning. Wrong or incomplete ideas are important resources and welcome opportunities to explore together as a community. Students will be asked to explain their thinking and say why they made a particular claim, regardless of whether their ideas are scientifically accurate or not. These types of questions can traditionally signal for some students that they are wrong. Consequently, it is important to establish norms around asking questions and working together to move our science thinking forward. We need to explicitly teach students how to use and build on others' ideas, the importance of providing and asking for evidence, and being open to changing our minds based on new evidence.

Strategies for developing community norms

When setting up community norms, students should understand how norms help everyone in the community understand what is expected of them. A rigid list of "norms" given to students with no student input simply becomes a list of "classroom rules" and not a shared set of norms. Two strategies for setting up norms include:

- **Co-construct norms with students.** Have students co-construct norms, first sharing ideas in their small group, and then sharing out with the whole class. Compile a list of agreed-upon community norms. As the teacher, you can suggest others norms but make sure to explain why you think they will be helpful.

- **Provide a set of norms as a starting point**. Hand out a set of community norms at the start of the year. Have students discuss what the norms mean in their own words and how these could support our figuring out. Provide space for students to edit or add to the norms.

References: Michaels, S. and O'Connor, C. (2014) Establishing Norms: Laying the Foundations for Academically Productive Talk. Next Generation Science Exemplar Program. Ngsx.org and O'Connor, C., Ruegg, E., and Cassell, C. (2017). Establishing Classroom Discussion Norms. Strategic Education Research Partnership (SERP), https://serpinstitute.org/.

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