If you’re anything like me, you’ve probably found yourself exhausted at the end of the day sitting in your classroom wondering what shifts to make to the learning environment to actually get students to talk more about mathematics. Reflecting, trying, coaxing and even the occasion pleading were several practices in my toolkit that I employed to try to move further into a student-centered learning space. Luckily, someone in my network had the wherewithal to guide me towards professional learning through the text *5 Practices for Orchestrating Productive Mathematics Discussions* by Margaret Smith and Mark Kay Klein. The first article in this series will describe the necessary conditions, or groundwork, for rich student-centered conversations to take place centered on this book.

As we consider the necessary conditions it is first important to anchor ourselves in why this work is important. Students engaging in mathematical discussions allows them to bring all of their schema and exercise its ability to solve a given situation or context. This not only is the most natural form of learning it also aligns with both state and national research. National Council of Teachers of Mathematics describes the importance of “facilitating meaningful mathematical discourse” and the need to “pose purposeful questions” as two Effective Math Teaching Practices. Furthermore, the Common Core Standards for Mathematical Practices identify students should be able to “Construct viable arguments and critique the reasoning of others” as they integrate mathematical concepts with effective communication practices. Dialogic classrooms are built on the foundations of problem solving, sequencing, and communicating findings in a way others are able to engage in the learning process alongside one another. I encourage you to explore connections to both the *Essential Instructional Practices in Early Mathematics (PK-3)* and *Disciplinary Literacy Standards (6-12)* as they state-level documents further support the need to shift further into creating socially constructed learning spaces.

One element that cannot be understated, and should be read as a
cornerstone to this article, is that learning goals and selecting appropriate tasks are at the center of quality conversations. The 5 Practices (outlined later) are significantly less effective if learning goals aren’t identified and a task don’t allow students multiple-entry points or clear connections to other math concepts. Considering the learning goals, what is it you want students to know or be able to do as a result of the day’s lesson? Be explicit – what does it look and sound like for them to meet this goal? Share it with them and allow them to ask questions and draw connection; engage schema. This creates a common target for students to strive towards and teachers to listen for and facilitate towards.

5 Practices for Orchestrating Productive Mathematics
Discussions provides a Task Analysis Guide (see right) to provide guidance on evaluating and selecting tasks. Selecting a task must align with the learning goal of the lesson. You should consider tasks that fall within “doing mathematics” or “procedures with connections” when engaging a new concept. These tasks allow students to exercise and apply their current schema to find a solution (albeit less efficient) or recognize a need for new mathematical learning. Allow time for student’s to engage in math during these stages, it is what makes mathematicians. Once conceptual understanding is developed it may then make sense later in the unit to select a lower-level demand task if it aligns with your learning goal. It may be worth mentioning here this process aligns with another Math Teaching Practice – “Build procedural fluency from conceptual understanding.”

If you are using a primary curricular resource, look for tasks within your resource that align with your learning goals by using the Task Analysis Guide. Evaluating the tasks within this resource raises your awareness of how to best use them as assets to
meet students’ learning needs. Additionally, the selected tasks give students experiences that frame how they see and feel about mathematics and I don’t know about you but I would like to hear a few more students say “I like math.”

As we build knowledge of orchestrating productive math discussions it’s pivotal we pay attention to our learning goals and tasks. The 5 practices – Anticipate, Monitor, Select, Sequence, Connect are all built on this premise. Upcoming articles will unpack what is meant by each of these practices and how they might be used in the classroom. I strongly encourage you to consider purchasing a copy of *5 Practices for Orchestrating Productive Mathematics Discussions* as my awareness and skillset has dramatically increased as a result. I now spend fewer days wondering how to get students to talk about math in the classroom.