5 Practices for Orchestrating Productive Math Discussions

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1. Anticipating

* Do the problem yourself in as many ways as you can (actively envision how the students might interpret the problem and approach the task)
* What are students likely to produce? What solution strategies might they pursue, and what possible errors or misconceptions do you expect to see?
* Which specific problems will be the most useful to assign in addressing the particular mathematics objective?

2. Monitoring

* Listen, observe, identify key solution strategies and misconceptions
* Keep track of approaches
* Ask questions of students to keep them on track, allow them to explain their thinking, or to get them to think more deeply

3. Selecting

* CRUCIAL STEP – what student work do you want to highlight, and why?
* Purposefully select those that will advance mathematical ideas and address misconceptions

4. Sequencing

* In what order do you want students to present their work samples?
* Do you want the most common? Present misconceptions first?
* How will students share their work? Draw on board? Put under doc cam?

5. Connecting

* Craft questions to make the mathematics visible
* Compare and contrast the work of various students. What are the mathematical relationships? Can students understand alternate solution strategies?
* What do parts of student’s work represent in the original problem? The solution? Work done in the past? Real world context?