Orchestrating Productive Discussions

Rules of Thumb for Selecting and Sequencing Student Solutions

- Keep the goals and essential understandings in mind and build the discussion so that more students can access these concepts and leave with rich understandings.
- There is more than one way to go about presenting the solutions - have a reason for what you are doing and a goal that your sequencing will lead to.
- Don't be afraid to address misconceptions if they are critical to the mathematics being discussed.
- Stay away from responses that show profound misunderstandings or that do not advance the mathematical discussion.
- It is okay to begin by showing incomplete work or work that is not completely clear in order to engage the class in a discussion regarding what else needs to happen to complete or clarify the solution strategy.
- Show most frequently used solution methods first to provide entry to all (or the majority) of students.
- Arrange solutions in order of increasing difficulty, with the most complex methods presented last.
- Move from concrete to abstract.
- Order solutions so that each solution builds (to the extent possible) on the solution that preceded it.
- Pair solutions that can build on each other.
- Present solutions that show a range of representations (e.g., graphs, tables, equations, diagrams).
- Present solutions that show different methods for solving the task.
- Share at least one completely correct response.
- Make sure you get to the generalization (if there is one).
- Select solutions that illustrate both efficient and inefficient methods so that you can discuss circumstances in which one may be preferable over the other.
- Consider individual accomplishments of students (e.g., is there a student who has not presented in a few days? Is there a student who has done something that is quite unique that would give the student a chance to shine in front of their peers?)