

Orchestrating Productive Discussions: Overcoming the Challenges



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Five Practices



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Challenges

0. Setting Goals and Selecting a Task	<ol style="list-style-type: none"> 1. Identifying learning goals 2. Identifying a <i>doing mathematics</i> task 3. Ensuring alignment between task and goals 4. Launching a task to ensure student access
1. Anticipating	<ol style="list-style-type: none"> 5. Moving beyond the way you solve a problem 6. Being prepared to help students who cannot get started on a task 7. Creating questions that move students toward the mathematical goals
2. Monitoring	<ol style="list-style-type: none"> 8. Trying to understand what students are thinking 9. Keeping track of group progress—which groups you visited and what you left them to work on 10. Involving all members of a group
3. Selecting 4. Sequencing	<ol style="list-style-type: none"> 11. Selecting only solutions that are most relevant to learning goals 12. Expanding beyond the usual student presenters 13. Deciding what work to share when the majority of students were not able to solve the task and your initial goal no longer seems obtainable 14. Moving forward when a key strategy is not produced by students 15. Determining how to sequence incorrect and/or incomplete solutions
5. Connecting	<ol style="list-style-type: none"> 16. Keeping the entire class engaged and accountable during individual presentations 17. Ensuring key mathematical ideas are made public and remain the focus 18. Making sure that you do not take over the discussion and do the explaining 19. Running out of time

The materials in this packet are drawn from Smith, M. S., Bill, V., & Sherin, M. G. (2019). *The 5 Practices in practice: Successfully orchestrating mathematics discussions*. Thousand Oaks, CA: Corwin Mathematics. (Co-published by NCTM).

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Ms. Stastny's Learning Goals

Ms. Stastny's students had been working on understanding what it means for fractions to be equivalent. As a result of engaging in the lesson, she wanted her students to understand that

- a fraction describes the division of a whole or unit (area/region, set, linear/measurement) into equal parts. The size of the fraction is relative to the size of the whole or unit.
- a fraction in which the number of parts you have (numerator) is the same as the size of the parts into which the whole is divided (denominator) is called one whole. So $\frac{4}{4}$ means there are 4 parts each of which represents $\frac{1}{4}$ of the whole.
- two fractions are equivalent if they represent the same area of the same size whole, even though the number of parts and the size of the parts are different.

Ms. Stastny's Task



Name _____

Date _____

Lasagna Task

There were two pans of lasagna at the school picnic. The parents cut each pan of lasagna into equal portions.

Tanesha had 2 portions from one pan, while David has 4 portions from the other pan. They both received the same amount of lasagna. How is this possible?

1. Show how the lasagna was divided into portions so Tanesha's 2 portions are equal to David's 4 portions.
2. Shade in the portion of lasagna eaten by each child.
3. Write fractions that describe each student's portion of the pan of lasagna?
4. Explain how you know that Tanesha and David each received the same amount of lasagna. Explain your thinking by referring to the pictures, symbols, and words.