



Consolidating a Divergent Task Recipe

Adapted From:

- *Chapter 10 in Building Thinking Classrooms by Peter Liljedahl*
- *Young Mathematicians at Work Series by Fosnot, Dolk, and Jacob*
- *5 Practices for Orchestrating Productive Mathematical Discussions by Smith & Stein*

Consolidation provides students an opportunity to evaluate the thinking of others, build upon their ideas, and justify their thinking to their peers. It serves as a reifying experience and is thus indispensable to learning. When consolidating a divergent task, meaning a task where students could have gone about solving it using many different strategies, or that could even have more than one answer, the aim is to expose students to the disparity in thinking represented, and then to challenge them to make connections in the thinking across the selected boards; with the goal being to build collective knowledge.

Pre-work:

1. Review each group's work and decide which boards to highlight and in what order.
2. Use a red marker to create a box around the parts of each selected board on which you would like to structure the discussion. (Boxing work you want to use in the consolidation should be done as students are still working on the task so they don't erase it.)
3. Use the marker to number the selected boards (top right corner) in the order you wish to debrief them with the class.
4. Based on student thinking, decide on the focus of the discussion. The focus you choose will largely depend on the task itself, as well as what thinking students made visible. Regardless of how you choose to structure the debrief, always consolidate from the bottom up. In other words, start with a board where the thinking will be accessible to everyone in the class and gradually move to boards that represent more sophisticated thinking.
5. Possible ways to structure the consolidation include:
 - a. Begin with the presentation of an inefficient but easily understandable strategy to provide an entry point for all students into the discussion. Link this thinking to related but more sophisticated strategies.
 - b. Choose work samples that are all related to a specific big idea.
 - c. Base the discussion on the different representations students utilized.
6. If an idea, strategy, or model is not emerging as students work through the task, you can work to directly plant a seed for it. Seeding is slightly different from giving a hint because it is intended to move the whole class to the next level of thinking during the consolidation discussion, whereas a hint is meant to move the thinking of a particular group in the moment.
 - a. *Note: The soil has to be fertile in order for the seed to take hold. If the idea you are trying to plant is too disconnected from the collective thinking of the class it is unlikely students will be able to make sense of it.*

Process:

1. Gather students to a meeting area or the center of the room and briefly have them restate the task (This serves to protect anonymity and sever group attachment to the work. By doing this before going to the first board the discussion becomes about the work and not the students who were at that board).
2. Have students walk and loosely gather around the vertical surface you labeled 1.
3. Focus student attention on the part of the board you have put a red box around and prompt the students who did not work at the selected board to figure out the thinking of the group to which the board belongs. This may be done using a prompt like, "Can someone not in this group tell me what this group was doing here?"
4. Engage the class in the [Think-Pair-Share](#) routine to discuss the thinking highlighted.
 - a. If the class is unsure of what the group did on the board, provide an opportunity for them to ask questions to the group whose work is being analyzed. This is not a time for the teacher to take over and explain the thinking of the group, but rather an opportunity for the group whose work is being discussed to clarify their thinking to the class. However, the class should be pressed to make sense of the thinking of their peers (the more students thinking the better) so this move should only be used as a last resort to spark the start of a class dialogue.
5. Facilitate a discussion where students explain the thinking represented. As students share, be intentional about creating a clear throughline from the idea, strategy, or model you are targeting, by asking the class follow-up questions, annotating the student work as students share key insights, and creating an anchor chart of relevant big ideas, strategies or models. (The anchor chart can be added onto throughout the unit and function as an artifact of what was learned. It can also act as a support for students as they deepen their understanding of key ideas, strategies, and models as the unit progresses.
6. Repeat steps 2-5 with the rest of the boards selected.