

Board Organization

Board Organization (20 minutes)

A well-organized board can help students in several ways (Yoshida, 2005). The board creates a record of the lesson, so that students can:

- Revisit each element of the lesson as they need to—for example, refer back to the problem, related prior knowledge, pictures, etc.;
- Compare different approaches to the problem, and consider how their own thinking relates;
- See the mathematical expression associated with each picture or verbal description;
- Experience a model for organizing their own note-taking and reflection.

In Japan, board writing may *seem* spontaneous, because it typically includes students' work and ideas that emerge during the lesson. In fact, teachers carefully plan board writing in advance of the lesson, thinking about the key ideas and pictures on the board that will spark and advance students' thinking. The board provides an overall record of the lesson. International comparisons reveal that Japanese mathematics teachers use the board more frequently than do teachers in Germany and the U.S., and that Japanese teachers tend to keep the board writing throughout the lesson, rather than erasing parts of it during the lesson (Stigler et al., 1999).

You can examine board photographs to identify aspects of board organization you might want to work on, such as supporting:

- Student work that is easily visible to classmates, and uses color, arrows, etc. for visual clarity
- Mathematical expressions to go with each visual or verbal representation
- Writing conventions that help students become metacognitive and organized in their own journal writing—such as particular colors to designate key learnings or to correct mistakes, thought bubbles to show student thinking, etc.
- A consistent organization that shows the whole flow of the lesson, so that students always know where to look for the problem, classmates' solution methods, what was learned by comparing solution methods, etc..

[Download this file \(PDF, 92KB\)](#)

You can examine a sample board plan (above) for a lesson on the area of the L-shaped figure. The problem posed to students is shown at the upper left of the board, so students can refer back to it. The “task” captures the problem as we hope students will pose it themselves. The “ideas” section of the blackboard captures student thinking as the class initially considers the problem (for example, that the shape is complicated but that previous learning about rectangle area might be useful), and the “work” shows the student solution methods you plan to select for presentation, in the order you want to discuss them. The “summary” includes the mathematical points you hope to draw out of *neriage* and the “what we learned” section includes how students might express what they learned in their journals or discussion.

A [blank version](#) of a board plan is available to create your own board plan, which you can then add to your [unit plan template](#) (under item 9).

Ideally, writing a board plan provides an opportunity to think through the whole lesson, from posing the problem to anticipating student solution methods to figuring out the key ideas of the *neriage* discussion.