Representation Reflection

Format: Students working in groups of three.

Materials: Copies of a solution using a visual or physical representation to a math problem (enough for each group to have one representation). *Note:* There should be different math problems (and accompanying representations) so not every group works on the same problem.

Step 1: Read the problem aloud to students. Encourage them to visualize the story in their mind's eye while you read the story.

Step 2: Use What Do You Hear? or an I Notice, I Wonder brainstorm (both in Chapter 4) to quickly hear students' initial thoughts about the problem.

Step 3: Hand out one of the representations to each group (different groups will receive different representations). Encourage the groups to read their representations and do an I Notice, I Wonder brainstorm together.

Step 4: Give groups the task of making sense of how the representation was used to solve the problem. Circulate and listen to how students make sense of the representations.

Step 5 (*optional*): If more than one group had the same representation, bring the groups together to compare their thinking.

Step 6: Expose students to additional representations for the same problem. Here are three variations on how that might be done.

Presentation version: Have group members present to the class how the method they studied worked.

Problem-solving version: Have each group solve the problem again using a different manipulative or picture. This can be done outside of class time if needed.

Representation station version: Have the groups rotate their papers to the right and repeat the I Notice, I Wonder brainstorms and sense making with each representation until each group has seen all of the different representations.