

Final Project

<<Your name>>

Step 1

<<Title of math activity you are choosing>>

Grade(s): <<Grade(s) for which this lesson is intended>>

If this activity is not taken from the course or the **Fostering Algebraic Thinking** book, please briefly describe the activity. If it is taken from the course, list the session or page number from the book. Please write your descriptions clearly enough that someone else could make use of it.

<<description of activity>>

Step 2

Describe the potential misconceptions or areas of difficulty that your students may have with the activity you selected.

<<Description>>

Step 3

Describe the goal of your discussion:

- a) What do you hope students will gain from the discussion?
- b) How will you decide when the discussion is “done?”

<<Type response here.>>

List 4-6 possible discussion questions that you might use during the discussion. Your discussion questions should try to target some of the areas of misconception that you described in Step 3.

Refer to the framework for Categories of Teacher Questions on p. 6 of Fostering Algebraic Thinking.

<<List questions here.>>

Step 4

Several Models for Conducting Your Discussion

There are many ways to conduct your discussion. The following are three possible models.

Small Group to Whole Class

Begin by having students work together in small groups on a particular math activity. After groups have had some time to work on the activity, give each group a blank overhead transparency and marker. Instruct groups to write down a summary of how they tried to solve the problem, including any unsuccessful ideas. You may want to instruct them to write it in such a way that other students can follow along and that includes “headlines” rather than details, which they can fill in when they

present it to the class. Some teachers have shown students a sample overhead that they created with bullet points or “headlines” of the group’s solution ideas.

Call on several small groups to come up to the overhead to share their group’s work with the whole class.

After several groups have presented their thinking, conduct your discussion.

Think/Pair/Share

Give students 1-2 minute to think about a particular discussion question you’ve posed. You may want to ask students to write down one or two thoughts individually. Then, put students in pairs to share their thinking about the question, and give them 3-4 minutes to talk about the question. Then gather the whole class together and call on various students to share their own and their partner’s thinking.

Whole Class

You may choose to conduct a whole-class discussion in which you pose your questions to students and call on students to respond. If you choose this method, think about several possible ways to include as many students as possible to expand the discussion.

- a) Ask other students to respond to what one student has said: “Rebecca, what do you think about what Josh just said?”; “Who else agrees with Rebecca? Kevin, why do you agree? Katie, why do you disagree?”
- b) Ask students to reflect on what others have said: “Janaé just said something pretty important to what we’re learning. Why do you think that might be important?”

Step 5

Write a reflection on your discussion:

- a) To what extent do you think you reached your goal for the discussion? How satisfied were you with the discussion?
- b) What happened during your discussion? What questions did you ask? What new questions came up?
- c) What evidence of algebraic thinking did you notice in your students’ responses?
- d) What will you do differently next time?

<<Write your reflection here.>>