MathMemos Contributor Template

Each MathMemo involves three important stages: planning, analyzing student work, and reflection. Below, you will find several sets of questions for each of these three phases. You should type your responses to these questions directly into this template and then return the completed file to info@mathmemos.org.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Program Affiliation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**We like to include a brief bio for our contributors. In the space below, please write a few sentences about yourself.**

Each MathMemo involves three important stages: planning, analyzing student work, and reflection. Below, you will find some directions and several sets of questions for each of these three phases.

**Instructions for Contributing a MathMemo**

1. Find or create an open-ended, challenging math problem. The problem should allow for multiple solution methods and, ideally, will not have a clear path to the solution. It should be a problem that your students will struggle with for an extended period of time.
2. Before you give the problem to your students, answer each of the Planning Questions below.
3. Use the problem in class.
4. Collect several samples of student work.
5. Choose three or four samples of student work and complete the Questions about Student Work section below.
6. Complete the Reflection Questions.

Planning Questions

1. **Why did you choose this problem? What do you like about it?**
2. **Describe how you solved the problem.**
3. **Can you think of any other ways to solve the problem? What methods do you think your students might use?**
4. **What do you want your students to get from working on this problem?**
5. **Identify and describe a few specific challenges that your students will have in solving the problem? Describe how you might support the problem-solving efforts of struggling students without giving too much away.**
6. **What extension questions could you ask if students finish early?**

Questions about Student Work

For each student:

1. **Explain the student’s method/thinking. What did this student struggle with? How did you help them when they were struggling?**
2. **Why did you choose to talk about this sample of student work?**
3. **Any additional comments?**

*Note: If possible, try not to focus only on students who got the correct answer. Teachers can often learn more from student mistakes/misconceptions, and solution methods that are interesting but incomplete.*

Reflection Questions

1. **What did you learn from using this problem with your students (about math, about individual students, about your class, about student thinking in general, etc.)?**
2. **What, if anything, would you do differently if you used this problem again?**
3. **Comment on how your class (individual students, or as a whole) may have benefited from their work on this problem?**
4. **Did students get what you wanted them to get from the problem? How do you know? What strategies/solution methods/questions came out that seemed helpful to students?**
5. **What challenges came up for your students that you didn’t expect?**
6. **What advice would you have for a teacher who is considering using this problem with their class?**