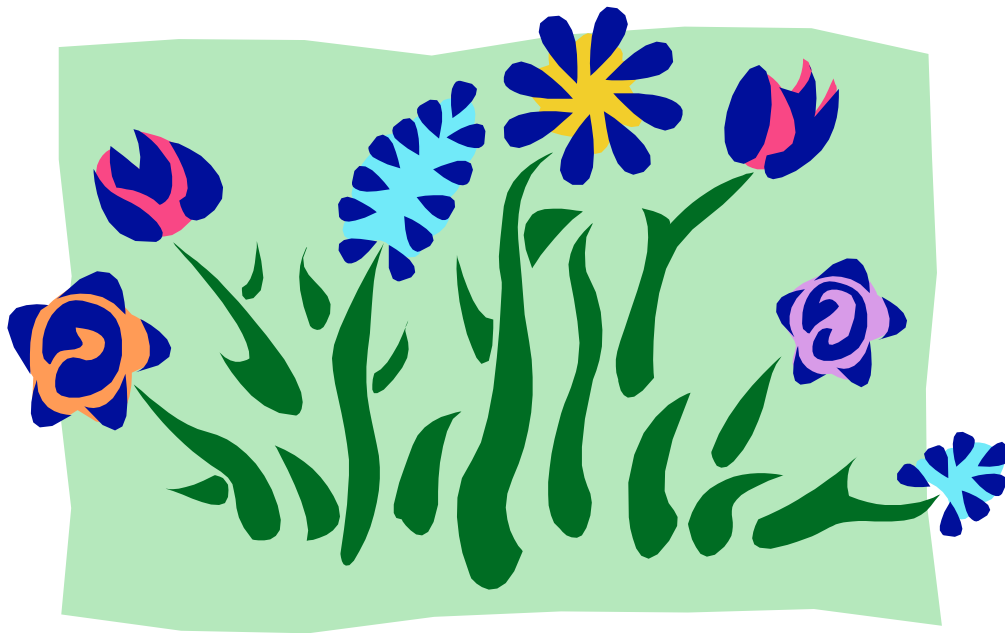


# *Figure This!*



*April 2003*

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# Getting to the Point of Promoting Quality Student Writing

Source: *Mathematics Assessment – A Practical Handbook*, NCTM, 2000, p.76 - 79

## HOW CAN I PROMOTE QUALITY WRITING IN MATHEMATICS FROM MY STUDENTS?



Students who have regular opportunities to write about their mathematical thinking become better writers and better thinkers. One

good writing task is to have students explain strategies and solutions using words, mathematical symbols, graphs, diagrams, or other representations. Here is an example of writing instructions that promote communicating about mathematical thinking (from *They're Counting on Us*, California Mathematics Council [1995]).

### Directions from the teacher:

Your math writing assignment has two parts. First, you are to restate the problem in your own words. Then you are to show your solution. Remember, you are to show all your work as well as your final answer.

### Be sure to—

- ✍ Write your solution as if the reader knows nothing about the problem.
- ✍ Show all your math work, including all calculations.

- ✍ Organize your work into either a step-by-step plan and solution or some kind of chart or table that is easy to read and follow.
- ✍ Proofread your work so you are sure you have not left out any important words or calculations.
- ✍ Make sure this is your best work. Make sure it is neat and legible.

### Promoting Quality Writing

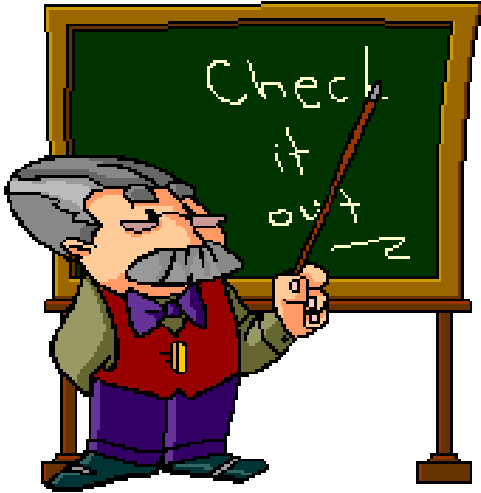


Getting our students to write about mathematics is often challenging. As with any skill, the more experiences students have, the greater their proficiency will become. Writing about mathematics is an ability that can be taught. Below are suggestions from teachers to help develop better student writing:

I try to improve my students' writing about mathematics by breaking down the writing process into several components and teaching it through a step-by-step process. I write comments on their work and have them work in groups to revise it.

## Tips From Teachers:

- ‡ I intentionally used a task that was easy for my students so they could focus on writing about their thinking.



- ‡ I have students write to a variety of audiences, such as a younger child, a best friend, the principal, a parent or caregiver, or the president of a company.
- ‡ I have students write directions that involve a sequence of ideas. For example, I might ask students to write about going from my classroom to the school office. I check the writing by having other students follow the instructions and suggest revisions.
- ‡ I offer written comments on students' first drafts or have other students give suggestions about how to clarify the writing.

## Below is an example of the guide my students' use.

- ✓ Do all your math work on a separate sheet of paper. Include all of your work, even strategies that did not work. Work until you have exhausted all the possibilities.
- ✓ Write the process paragraph. In your paragraph, you need to explain how you solved or tried to solve the problem. Connect what you are doing to the clues in the problem. Even if you did not find a solution, write that process in your paragraph. Remember, successful problem solvers look for other solutions or explain mathematically why only one solution exists.
- ✓ Next, write a short solution paragraph. This paragraph must prove your answer is correct. Convince someone that your answer is correct but do not retell the process. Make sure to refer to the clues in the problem. Please don't tell me it is the right answer because you checked it or it fits all the clues.





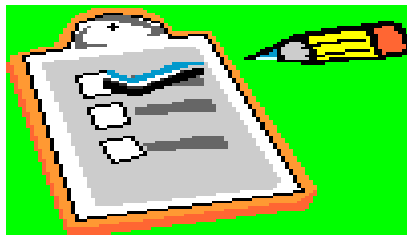
# Writing Prompts

Source: *Mathematics Assessments – Myths Models Good Questions and Practical Suggestions*, NCTM, 1991.

**Here are some prompts to help students start writing for journals, portfolios, or other forms of assessment:**

(Blanks are for topics chosen by the teacher. Open statements (...) are for students to finish.)

- ✓ Explain in your own words the meaning of \_\_\_\_\_.
- ✓ Explain what is most important to understand about \_\_\_\_\_.
- ✓ Explain your reasoning about \_\_\_\_\_.
- ✓ Something I would really like to know about mathematics is....
- ✓ What was the most difficult {or easiest) part of \_\_\_\_\_.
- ✓ Describe any patterns or parts that are alike in this investigation.
- ✓ Write a letter of advice to a student who is going to take this class next year.
- ✓ Write a short plan for what you will do tomorrow on your project.
- ✓ If math could be a sound (or shape, or animal), it would be... because....
- ✓ Describe any places you became stuck and how you became unstuck when solving the problem.
- ✓ How would you explain \_\_\_\_\_ to a student who doesn't understand?
- ✓ How do you know your solution is correct?
- ✓ Design two mathematical bumper stickers, one funny and one serious.
- ✓ Please draw a picture or build a model to illustrate \_\_\_\_\_.



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