

How to Get the Most Out of Short Writing Tasks
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Writing makes students' thinking visible especially with regard to their misconceptions about mathematical ideas, knowledge of vocabulary, and self-assessment. We present five types of writing tasks that have been effective in promoting students' deeper understanding of mathematical ideas and providing important information to teachers. For each type, we will share at least one idea we have used in courses, such as Intermediate Algebra, College Algebra, and Mathematics for Elementary School Teachers. We will offer insights about characteristics of tasks that made some more, or less, successful.

Features to look for in our tasks

- Purposeful choices for prompts
- Balance of open and guided
- Deliberate choice of wording to reduce confusion and lack of focus
- Guidance to students about how to make their thinking clear
- Some information about expectations

1. Writing to justify conclusions

Example: Every line in the rectangular coordinate system has an equation that can be expressed in slope-intercept form. Does this statement make sense or not make sense? Explain your answer. (Gay & Peterson, 2014)

2. Writing to summarize main ideas

Example: A general focus of (the unit just completed) might be stated as “making new functions from known functions.” Discuss what this statement might mean. Give at least 3 examples in your discussion.

3. Writing to conduct error analysis

Example: After working with some spinners, James concludes the following: **If a spinner has 3 colors on it, then the probability of landing on one of those colors is one-third.** Is he correct? Explain. You may provide your explanation to James or you may provide an explanation you would present to his parent or another teacher.

Adapted from: Musser, G.L., Peterson, B.E., & Burger, W.F. (2014). *Mathematics for elementary teachers: A contemporary approach* (10th ed.). Hoboken, NJ: John Wiley & Sons, Inc.

4. Writing to describe mathematics concepts

Example: The graph of a parabola opens upward and has a vertex at (1, 2). Describe as much as you can about the parabola – either the graph or the related equation – based on this information. (Gay & Peterson, 2014)

5. Writing to reflect on mathematical progress

Example of self-reflection: Write about your performance on the exam, focusing on mathematics, identifying personal strengths and weaknesses.

How to Get the Most Out of Short Writing Tasks

- Good writing prompts are open-ended but also include guiding parameters.
- Use a deliberate choice of wording to reduce confusion and lack of focus.
- Frame the task to suggest more than a single reply to encourage more complete and informative responses.
- Students need feedback on content and quality.

Reference

Gay, A. S. & Peterson, I. (2014). Writing to promote and assess conceptual understanding in College Algebra. *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, 24(7), 637-646.