

Logistics of Mathematics Journals: Frequently Asked Questions

by
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1. *How often do students write in math journals?*

Students' first experiences with journals often spans several days so that they can become familiar with the range of prompts. After this introduction, we usually use the journals twice a week—sometimes more, sometimes less. Students also write about selected homework problems in their journals. About once a month, students use their journals to keep records of an in-depth experience that lasts 2–3 consecutive days.

2. *How often do teachers read the students' journals?*

Usually we read students' journals once a week. When the class is involved in an in-depth project, we read them daily. Sometimes while the students are working, we write a comment or question about their in-process writing.

3. *How can teachers respond to journals?*

Most often, we respond in ways that suggest extensions or reflection. A sample extension response might be, "I wonder if your strategy will work with other numbers." Reflective responses encourage students to review their thinking processes or styles of explanation such as, "Your diagram with the arrows really helps me understand your solution." At other times we advise students to review their work for inaccuracy, lack of clarity, or lack of effort: "Check the circled part again and show me what you find out," "I'm confused here. Say more," or "I can't see your thinking here. Say more." We also refer students to each other: "Your solution is like Catherine's, but your picture is different. Can you show yours to her?"

4. *Are journals graded? How?*

The main point of journals is to encourage students to reflect on, represent, and explain their thinking; and to promote positive attitudes and dispositions toward mathematics. When solutions or reasoning are inaccurate, we use the journals to plan review for individuals, small groups, and the whole group as necessary. Even when a solution is inaccurate, a student can receive credit for "giving a window into thinking." We use a simple 4-point scale to mark each entry:

+	for an entry that is thorough and thoughtful, that provides a "window into thinking," and that makes new connections or shows insight
✓ +	for thorough, thoughtful entries that provide a "window into thinking"
✓	for adequate entries (shows thinking, may be too brief, may have inaccuracies, but effort is shown)
✓ -	for entries that are incomplete or inadequate

At the end of a grading period, we convert the collective entries to a letter grade (e.g., all or mostly + entries receive an "A," etc.). The journal grade comprises a portion of the overall mathematics grade.

5. *What about grammar, spelling, and other conventions?*

We do not count off for grammar, spelling, or conventions. However, as we read the journals, we make notes of errors and use the information for further instruction. For example, we might add *angle* versus *angel* to our "mathematical vocabulary" wall chart or review possessives/plurals in a language arts mini-lesson.

6. *What are ways to make time for math journals and follow-up extensions?*

Having students write about selected problems on homework gives them extra practice in communicating their reasoning. For example, if students have a sheet of 20 computational problems for homework, we ask them to circle one problem and explain their reasoning for the solution, using words and/ or pictures. We give an overhead transparency to one student, who shares this solution with the class during our homework review. (Students love taking turns with the “traveling overhead.”) Extensions from long-term investigations can also spill over into homework assignments.

When we are involved in an extended project, we often shift some of the writing to another subject block, such as writers’ workshop. Students revise and publish their findings, thus legitimizing technical writing as a genre. Sometimes the entire class works on extensions during writers’ workshop, and sometimes a small group of volunteers summarizes the major findings of the class.

Extensions can also be set up as a center for students who finish their work early. We try to provide time for them to share their discoveries with the class.

7. *How can journals be used with a textbook?*

The homework description above is one way to extend written communication to work from a textbook. A related idea is for students to complete a page from the textbook and then compose a similar problem. We choose several of these problems to create a sheet of homework problems for the whole class. We especially try to include problems from less confident students. When we review the homework in class, the author of the problem chooses a classmate to explain the thinking behind the problem and solution. This strategy encourages writing as well as oral communication.

Another adaptation from textbook problems is to invite students to create new problems by switching the known and the unknown. For example, a textbook problem might be: “Dean has 3 model cars and 4 model motorcycles in his collection. How many wheels are there?” Students can revise it to read: “Dean has a collection of motorcycles and cars. If there are 20 wheels in his collection, how many cars and motorcycles could he have?”

Reference:

Whitin, Phyllis and Whitin, David. (2000). *Math is Language Too: Reading and Writing in the Mathematics Classroom*. Urbana, IL: National Council of Teachers of English; Reston, VA: National Council of Teachers of Mathematics.