

Mathematics Writing

Information collected and annotations written by Julie Schwarz.

Articles

- Anonymous. "Journal Writing in the Mathematics Classroom: A Beginner's Approach" The Mathematics Teacher Vol. 93 Iss. 2 (Feb. 2000): p. 132.
Summary: This is an article explaining the introduction of journal writing in the mathematics classroom. The studies are from high school classes, but the basic idea is universal in that the journal "helps reinforce students' mathematical knowledge and reasoning." (ProQuest)
- Elliott, Wanda Lee. "Writing: A Necessary Tool for Learning." The Mathematics Teacher Vol.89. Iss. 2 (Feb 1996): p. 92.
Summary: Emphasizes that writing is "an excellent tool for evaluating conceptual understanding." The author argues that writing can help students understand what they are learning by encouraging them to write a summary of the day's lessons. The main argument is that since writing is an unusual aspect to math classes, the novelty will make the students less resistant to try. (ProQuest)
- Goldberg, Dorothy. "Integrating Writing into the Mathematics Curriculum" The Two-Year College Mathematics Journal Vol.14. Iss. 5 (Nov. 1983): p. 421-424.
Summary: The use of writing in the math classroom aids the student in both the classroom (in the use of logic, proofs, etc.) and is helpful in the long run in honing their basic writing skills. Includes tips on getting writing started in the classroom. (JSTOR)
- Gopen, George D.; Smith, David A. "What's an Assignment Like You Doing in a Course Like This?: Writing to Learn Mathematics" The College Mathematics Journal Vol 21, Iss. 1 (Jan 1990) p. 2-19.
Summary: This article shows work handed in by actual students and the direction an instructor should take in order to get the student on track. The first part of the article is really helpful as it explains the initial difficulty students encounter when they start to write in math classes, when they have to start thinking about the math process in ways other than just solving a problem.
- McIntosh, Margaret E.; Draper, Roni Jo. "Using Learning Logs in Mathematics: Writing to Learn." The Mathematics Teacher Vol. 94. Iss. 7 (Oct 2001): p.554.
Summary: This is a small article that talks about the benefit of learning logs. While it is geared toward K-12 teachers, the arguments they present are valid for all learning levels. Includes tips for making effective learning logs. (ProQuest)
- Price, J.J. "Learning Mathematics Through Writing: Some Guidelines" The College Mathematics Journal Vol. 20. Iss. 5 (Nov. 1989) p.393-401.
Summary: The guidelines in the title refer to the homework guidelines that

make up the majority of the article. Price is very precise in explaining the purpose of written homework, faculty responsibility in the homework process, and shows some common errors on homework. (JSTOR)

Pugalee, David K. "Connecting Writing to the Mathematics Curriculum" The Mathematics Teacher Vol. 90 Iss. 4 (Apr. 1997) p. 308.

Summary: Writing helps the student and the teacher understand their progress, as it keeps them both in the know as to what the student is missing and/or the teacher is not explaining.

Books

Griffin, C. Williams, Editor. Teaching Writing in all Disciplines, Washington, D.C. Jossey-Bass Inc., 1982. **Call# PE1404.T42.1982**

Summary: While this book is old, it is still considered one of the best all-around faculty guides, showing inventive ways of having students write frequently. Chapter four is specifically for writing in the mathematics class.

Connolly, Paul; Vlardi, Teresa, Eds. Writing to Learn Mathematics and Science. NY: Teachers College Press, 1989. **Call# PE1404.W75 1989**

Summary: While the writing in general is a little on the dry side, this book is considered the premiere anthology of Writing Across the Curriculum for Math. Chapter content ranges from "Writing *Is* Problem Solving" to "Writing as a Vehicle to Learn Mathematics" to "A Mathematician's Perspective." The few chapters devoted to math and science combined are less useful.

Countryman, Joan. Writing to Learn Mathematics: Strategies That Work. Portsmouth, NH: Heinemann, 1992. **Call# QA11.C69.1992**

Summary: Countryman is one of the foremost writers of WAC and is actually a math teacher. This book is geared towards K-12 teachers, but don't discount it because of that. Her suggestions for the use of "journals, learning logs, letters, autobiographies, investigations, and formal papers" all jibe with any writing to learn curriculum in math classes. A terrific jumping-off point for new teachers and learners.

Crannell, Annalisa; LaRose, Galvin; Ratliff, Thomas; Rykken, Elyn. Writing Projects for Mathematics Courses: Crushed Clowns, Cars, and Coffee to Go. Washington D.C., The Mathematical Association of America, 2004.

Summary: The title and author list may be a mouthful, but note that this is a terrific book. Recently written by college professors who really know what works best in the classroom, the projects are well thought out and vary in degree of difficulty. There is no need to cull over the contents for useable material as all of the information is pertinent. The book includes complete lesson plans for specific math courses, like Calculus I.

Illowsky, Barbara Sack. Writing in the Math Class? Let's Add Some Pizzazz!. Cupertino, CA: DeAnza College Reprographics Dept., 1990.

Summary: This is a thin book, but useful nonetheless. It was written specifically to integrate writing into the math curriculum of "junior high school through college level math courses" so there are a lot of helpful tips,

activities and exercises. The first 15 pages are dedicated to WAC info and pro-arguments. The rest of the book is all in-class projects, of note: “One minute papers” and “cartoons.”

Lamm, Kathryn. 10,000 Ideas for Term Papers, Projects, Reports, and Speeches (5th edition), New York, NY: MacMillan, 1998. ISBN: 0-02-862512-9
Summary: True to its name this book is full of ideas. Symbols by the topics indicate if the idea is difficult, may require prior knowledge, needs examples, etc. Topic ideas specific to Math can be found in both the Mathematics section (300) and in the Computers section (97).

ON-LINE RESOURCES

<http://www.mathforum.org/> The math website for Drexel University, addresses K-12 mathematics teaching. Articles, book recommendations, free quizzes, ask Dr. Math, many other tools and resources -- some require a paid membership to access.

<http://www.dean.usma.edu/math/pubs/primus/> The US Marine Academy mathematics journal, “Primus,” is directed towards mathematics teaching in higher education exclusively. Covers teaching issues well beyond writing, but significant numbers of articles do address writing. My search pulled up 50 articles related to mathematics and writing.

<http://www.maa.org/pubs/cmj.html> The Mathematics Association of America’s journal, The College Mathematics Journal, posts abstracts of all articles published since 1970. They also include indexes and abstracts of Mathematics Magazine dating from 1974. My quick search yielded significantly fewer writing-related articles than Primus, but this is still a potentially useful resource.