

2013 Focus Issue

Mathematics in a STEM Context

Principles and Standards for School Mathematics emphasizes the importance of students being able to recognize and apply mathematics in other subject areas and disciplines as well as to daily life. Fostering development in the integrated fields of science, technology, engineering, and mathematics, or STEM, “is a priority, not only because we need today’s students to become tomorrow’s leaders in innovation and help our economy, but also because we need to increase STEM interest and skills overall for everybody” (eSchool News 2009). As a key component of their STEM experiences, students must “develop a depth of understanding and ability to apply mathematics to novel situations, as college students and employees regularly do” (Common Core State Standards 2010).

The Editorial Panel of *MTMS* invites you to share your ideas on pursuing the goal of providing STEM experiences for middle school students. Articles should address the philosophy, research, or practice of effective mathematics teaching as an integrated component of STEM. Authors are encouraged to consider the following questions:

- What engineering, science, or technology contexts are useful for creating intellectual need in students to learn certain mathematical concepts? How can those contexts be incorporated in mathematics classrooms?
- How can mathematics standards be effectively

addressed in other STEM-related classrooms, for example, in a school science laboratory or a summer engineering camp?

- Describe successful examples of teaching math as an integrated component of STEM. What works? In what areas did you struggle? How can an effective collaboration among multidisciplinary team members be fostered?
- Estimation, observation, and communication are shared in the practices of science and mathematics (AAAS 2009). How are mathematical ways of thinking related to the scientific method and the engineering design process? What instructional strategies are most successful in fostering these ways of thinking among students?
- Beyond graphing calculators, how can other technologies—modeling tools, programming languages, simulations, digital videos, or social networks—be implemented to support student decision making, reflection, reasoning, problem solving, and assessment?

The manuscript should be no more than 2500 words. Include figures and photographs at the end. To submit manuscripts, access mtms.msubmit.net. On the tab titled Keywords, Categories, Special Sections, select the 2013 call from the Departments/Calls section. The due date is **January 9, 2012**.



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