

## From the Editor

Attempts to reform mathematics and science in the schools is not an activity for the timid. Reports in *Science* (16 October 1998, p. 387-9; 29 August 1997, p. 1192-5) are about people talking past each other.

Third graders in California will be taught about the periodic table, and sixth graders will learn about Earth's "lithospheric plates" under the standards approved by the state Board of Education. The presidents of the National Academy of Sciences and of the American Physical Society think that the standards focus too much on detailed knowledge and too little on concepts. Rote learning is substituted for understanding.

A high school chemistry teacher who helped draft the document thinks that it is perfect. "The average student with a caring teacher can get through this."

The president of the NAS complains that, "When you start teaching first and third graders about abstract things like atoms and molecules, what we actually do is not have kids understand anything...My hope is that the next governor takes care of this by commissioning a major overhaul of the standards."

According to *Science*, one major hindrance to the reform of mathematics in the schools is the vast number of teachers who took few math or science classes in college and have had no additional training. There are other pressures against reform. The 1992 California framework, based on the NCTM standards, called for teachers to question more and explain less, to group higher and lower ability students together, and to assign more projects and fewer workbook drills. By 1994 the radically new textbooks started appearing in classrooms.

The reaction was swift. Parent groups organized to fight what they called "fuzzy math" and "new New Math." They said the curriculum used untried methods and replaced basic skill drills, such as multiplication tables and long division with projects such as writing. In California, with support from Gov. Wilson, anti-reformist activists constitute the majority on the panels that are drafting both the new content and performance standards and the 1998 framework.

The new framework relies heavily on standards from Virginia and North Carolina. Shelley Ferguson, an elementary school teacher in San Diego who has been involved with the reform effort observes, "It's back to a laundry list of topics to know. Conceptual understanding and problem solving are pretty absent."

Whatever the outcome, reformers elsewhere say that the California math wars have taught them the importance of educating parents as well as teachers.