SAC BEE EDITORIAL
Fear, loathing and algebra --
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Schools must open this math gateway for all For too many of us, this was the spinach, the peas and the broccoli of secondary school. So many California middle and high school students have despised and rejected the subject of algebra. So many have graduated from high school bereft of its skills, without even a good grasp of how much they've missed. Today, The Bee begins a five-part series on algebra by staff writer Deb Kollars that attempts to unravel some of the discipline's mystery.

The series makes a powerful case for California's new insistence that all students master the subject before graduation. This is true because algebra skills are about much more than just solving for X and Y. Algebra teaches abstract thinking and cultivates the patience needed to pick through a complex problem. It is the basic language of science and computers, and the backbone for the study of higher mathematics. Its principles pervade the fields of engineering, architecture, medicine, marketing, finance, economics and agriculture.

Students who have mastered it are far more likely to attend college than those who don't. In short, algebra is a gateway to opportunity and too many California students -- disproportionately poor and minority -- haven't been given the keys. To its credit, the state is trying to change that.

New academic standards call on schools to begin exposing students to fundamental algebraic principles in the primary grades, and to begin algebra instruction in earnest in eighth grade, as many other countries with stronger student math achievement have long done. Last year, the Legislature passed and the governor signed a law requiring all public school students to pass Algebra 1 before graduation. And the high school exit exam, passage of which will be required for a diploma by 2004, may ask students to prove their algebra skills.

But before any of these important advances can be made, California must take care of a fundamental -- and, until recently, neglected -- piece of business: making sure teachers know the subject well enough to teach it. Statewide, an astonishing 40 percent of math teachers in grades seven through 12 have neither a major nor a minor in math. In poor and urban neighborhoods the percentage runs even higher.

Math classes are more likely than any other subject except science to be taught by a teacher without a proper credential. Thousands of teachers from lower-performing California secondary schools have begun cycling through new state-sponsored
"professional development institutes," summer boot camps run by the University of California designed to build teams of capable math teachers at schools statewide.

The program is in its second year and needs sustained attention and funding to continue its promising work. Districts and local teachers unions should consider pay differentials to attract math experts who have so many other lucrative options in this economy. The teacher preparation programs of the California State University system must play a stronger role in readying new teachers for the algebra challenge.

To scale that challenge, students will need decent textbooks, which the state is on the way to giving them. But more important, they'll need gifted teachers to lead them by the hand.

*The Sacramento Bee*