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Proposed math standards unteachable

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California's proposed new mathematics content standards would gut the state's successful program, which has put 60 percent of the state's children in Algebra I by eighth grade. Most importantly, the proposed new algebra course is so overburdened in eighth grade that only an elite few students will be able to succeed. Unfortunately, students also will not be adequately prepared for algebra in eighth grade, under the proposed plan.

We were the two dissenting commissioners when the California State Academic Content Standards Commission voted July 15 on the math standards proposed for California's children. We dissented because the proposed math standards do not meet or exceed – particularly in kindergarten through grade seven – the level of academic rigor in the content standards that California already has. (Academic standards are grade-by-grade compilations of the subject-matter topics that students are expected to learn.)

This denial of opportunity to all of California's children is a tragedy that could have been avoided. Our fellow commissioners made these tragic mistakes because of their fetishistic devotion to a set of national academic content standards called the "Common Core," which was unveiled June 2. These national standards, as adopted by our fellow commissioners, will destroy California's program of algebra in eighth grade.

Because of the distortions the proposed standards will cause, the Algebra I course in eighth grade will be burdened with an unteachable and unlearnable number of topics (about 70 standards in one year). Topics like the Pythagorean theorem and scientific notation (how scientists write large numbers in a simplified form using exponents) will now be taught in Algebra I. Yet these and many other algebra-prep topics have been part of pre-algebra courses both in California traditionally and in high-performing countries.

The proposed standards impose an experimental way of teaching similar and congruent triangles – a way that has never been successfully used in K-12 education in any state, province or country in the world.

Worse, because the proposed standards do not teach algebra-prep topics early enough, students will hit a wall when they arrive in eighth grade, and that wall will be too high to climb for all but an elite few, who will necessarily get their support outside what the regular school program provides. California's children will learn topics, like negative numbers, much later than children in high-performing foreign countries. Percentages are likewise introduced much too late.

Scores of topics that for the past 12 years have been learned by California's children have been dropped. For instance, the proposed standards drop altogether teaching the concept that "equals added to equals stay equal" (for example, on both sides of an equation).

The proposed standards also drop altogether the similarly fundamental: "Equals multiplied by equals are equal." The proposed standards drop from Algebra I the manipulation of rational expressions that is needed for typical "real world" work problems. The proposed standards drop altogether learning the definitions of equilateral, right-angle, scalene and isosceles triangles.

Algebra I is taught in eighth grade in high-performing foreign countries, and this is also recommended by America's 2008 National Math Panel. California has made immense progress in this direction in the past decade, and we now lead the nation in the percentage of algebra-takers in eighth grade. Regrettably, all these gains are in danger of being reversed because of these ill-advised standards recommendations.

The California State Board of Education will meet Aug. 2 to decide on this issue: Should it adopt these poorly crafted new standards and spend an additional \$2 billion on implementing them, or should it stick to the current content standards which are rated as among America's best?

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