

## 6 Simple Ways to Improve Education in Maryland

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→ **Recommendation 1.** Schools in poor neighborhoods could have a school pediatrician, school dentist, school psychological counseling in addition to the school nurse.. A student with a toothache, or an illness or who cannot see the board clearly is a student not ready to learn. Medicaid might fund some of this.

→ **Recommendation 2:** Only students who exceed the expectations on the PARCC Math 7 exam will skip Math 8 and take Algebra I in Grade 8?

\* 9,000 (43% of) Grade 8 Algebra I students scored less than "proficient" on the 2017 PARCC Algebra I exam ". But, students studying Algebra in Grade 8 are supposed to be exceptionally good ones.

\* 8,000 students, who scored less than proficient on the 2016 PARCC Math 7 exam took Algebra I in 2016-2017. This suggests social promotion into Grade 8 Algebra.

→ **Recommendation 3. Intervention** needed for the almost four out of five (78%) Grade 9 Algebra I students who scored less than proficient on the PARCC Math 8 exam. **Example.** They will study Algebra over two years (Algebra I Part I, which will largely be Arithmetic and Algebra I Part II).

**Example.** They will study Arithmetic in a second Math class simultaneously with Grade 9 Algebra I.

→ **Recommendation 4.** Provide good textbooks. For the elementary grades, use the Singapore Math textbooks (which were written in simple English for Singapore students for whom English was not their native language.) See Appendix.

In 2007, I was a duly sworn official of the state of California. I was a Content Review Panel (CRP) member charged with review of four Grades 4-7 Math textbooks series, which are supposed to help students, who are a year behind in Math, to catch up. What jumped out at me was that the textbook writers had little training on how to write mathematics coherently, clearly, comprehensively, logically, accurately and precisely without being cryptic, vague, ambiguous, or obscure as well as how to distinguish a correct mathematical argument from an *incorrect or incomplete* mathematical argument.

→ **Recommendation 5.** Fill in the loopholes in the Common Core middle school math curriculum.

**Example.** If the state wants high school students to know that 50 % is a half, the state needs to add it to the middle school math curriculum. It is not in the Common Core math curriculum.

**Example.** If the state wants students to learn how to do the many Arithmetic problems on the Math SAT, the state needs to add Math SAT Arithmetic problems to the middle school math curriculum. Teaching the Common Core math curriculum is not sufficient.

→ **Recommendation 6.** Raise the standards on the teacher licensing tests so that passing the tests will ensure that all teachers (not just some teachers) are knowledgeable in the subjects listed on their licenses. If the state wants that all classes (not just some classes) will be taught by a teacher knowledgeable in the subject, then the state needs more demanding teacher licensing tests and requirements to ensure this.

If the state wants that all teachers (not just some teachers), will write and speak coherently, clearly, comprehensively, logically, accurately and precisely without being cryptic, vague, ambiguous, or obscure, then the state needs to add teacher licensing tests which will require this.



## Appendix

### Singapore Primary Mathematics Texts & Guidance of a Mathematics Professor Jump Scores at an Inner-city Title 1 School

Ramona Elementary School is an inner-city school (in the Los Angeles Unified District). "Ramona easily qualifies for federal Title 1 funds, which are intended to alleviate the effects of poverty. Nine of every 10 students at the school are eligible for free or reduced-price meals (FARM). For the most part, these are the children of immigrants, the majority from Central America, some from Armenia. Nearly six in 10 students speak English as a second language." (The Los Angeles Times, March 9, 2008)

Let's look at Ramona Elementary School's Grade 5 results on the California Standards Math Test for the three years before and after using Singapore Primary Mathematics Texts under the guidance of Mathematics Professor Yoram Sagher. (About one teacher in four chose to ignore the guidance):

**2003-2005:** Percent of Students scoring Proficient and Advanced: **43%-56%**  
**2006-2008:** Percent of Students scoring Proficient and Advanced: **71%-76%**

<b>Before:</b> Percent advanced:	<b>15%-26%</b>	Average Scaled scores (all students)	<b>349- 378</b>
<b>After:</b> Percent advanced:	<b>35%-43%</b>	Average Scaled scores	<b>395- 412</b>

Data from the California Department of Education's (CDE) website.

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<sup>1</sup> "Proficient" means at least met PARCC standards.

<sup>2</sup> Based on data in MSDE 2017 PARCC results August 2017 presentation to Maryland State BOE at

<http://www.marylandpublicschools.org/stateboard/Documents/08222017/TabG-PARCCResults.pdf>