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Math Now: Advancing Math Education in Elementary and Middle School

February 2006

To compete in the global economy, you must know math. Therefore it is more important than ever that our students receive solid math instruction in the early grades to prepare them to take and pass Algebra and other challenging courses in middle school and high school.
– U.S. Secretary of Education Margaret Spellings

Increased global competition makes it imperative that our children receive a solid foundation in math.

- To compete in the global economy of the 21st century, knowledge of math is critical. Today's high school graduates need to have solid math skills— whether they are proceeding directly to college, or going straight into the workforce. In today's changing world, employers seek critical thinkers and practical problem-solvers fluent in today's technology.
- U.S. Students are currently performing below their international peers on math and science assessments:
 - Only 7% of 4th and 8th graders achieved an advanced level on the 2003 Trends in International Math and Science Study (TIMSS) test, compared to 38% of Singaporean 4th graders and 44% of Singaporean 8th graders.
 - On the most recent Program for International Student Assessment (PISA), American 15-year-olds performed below the international average in mathematics literacy and problem solving.
- Today, only 22 States and the District of Columbia require high school students to complete at least three years of math and three years of science, the minimum *A Nation At Risk* recommended more than 20 years ago.
- An applicant for a production associate's job at a modern automobile plant has to have the math skills equivalent to the most basic achievement level on the National Assessment of Educational Progress (NAEP) math test to meet company proficiency requirements, a threshold that almost half of 17-year-olds do not meet.

As part of his American Competitiveness Initiative, President Bush is proposing \$260 million for math programs that will focus on strengthening math education in the early grades and middle school so that students enter high school ready to take challenging coursework. The Math Now program includes the following:

➤ National Mathematics Panel

- The creation of a National Mathematics Panel will be the basis for the entire Math Now program. Based on the influential National Reading Panel, the National Mathematics Panel will convene experts to empirically evaluate the effectiveness of various approaches to teaching math, creating a research base to improve instructional methods for teachers.
- The panel's recommendations will help teachers teach all K-7 students pre-algebraic concepts so that every student can take and pass more rigorous courses in middle and high school, particularly Algebra I in middle school and Algebra II in high school.

➤ Math Now for Elementary School Students

- In order for students to develop the critical thinking skills necessary to pass Algebra, it is important for them to have a solid math foundation in the early grades.
- Modeled after the successful and popular Reading First program, the Math Now for Elementary School Students program would promote scientifically based research and promising practices in mathematics instruction to prepare students for more rigorous coursework in middle school and high school.
- Math Now for Elementary School Students would provide competitive grants to improve instruction in mathematics for students in kindergarten through 7th grade. Grantees would use funds to expand the use of proven practices in math instruction, including those recommended by the National Mathematics Panel, to help teachers to prepare all students in algebraic concepts so that every student can take and pass Algebra in middle school.

➤ Math Now for Middle School Students

- It is crucial that middle school students who are significantly below grade level in math receive appropriate and effective interventions so that they will be prepared to take challenging math courses in high school.
- The Math Now for Middle School Students program would make competitive grants to improve math instruction for students whose achievement is significantly below grade level.
- Similar to the current Striving Readers Initiative, Math Now for Middle School Students would diagnose students' deficiencies in math proficiency and provide intensive and systematic instruction to enable them to take and pass Algebra.
- Grantees would use funds to, among other things, implement scientifically based interventions and promising practices that involve intensive and systematic instruction and provide professional development for teachers and other staff that targets important mathematics content knowledge and effective practices.

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