The National Mathematics Panel releases its Final Report

Success in mathematics education is important both to individuals and to our nation as a whole. In April 2006, President George W. Bush commissioned the National Mathematics Advisory Panel (National Math Panel) to provide recommendations based on the best available research to improve mathematics achievement for all students in the United States.

The National Math Panel's final report was released on March 13, 2008, and contains 45 recommendations and findings on various aspects of mathematics education including instructional practices, professional development, curriculum materials, and assessment tests. The full report is available to the public at http://www.ed.gov/MathPanel.

Some of the major findings of the report are summarized on a facts sheet which is also available to the public and is located at http://www.ed.gov/print/about/bdscomm/list/mathpanel/report/final-factsheet.html. Some items of interest from the facts sheet are cited (quoted is more accurate) below.

Mathematical content and curriculum

- The areas to be studied in mathematics from pre-kindergarten through eighth grade should be streamlined and a well-defined set of the most important topics should be emphasized in the early grades. Any approach that revisits topics year after year without bringing them to closure should be avoided.
- Proficiency with whole numbers, fractions, and certain aspects of geometry and measurement are the foundations for algebra. Of these, knowledge of fractions is the most important foundational skill not developed among American students.
- Conceptual understanding, computational and procedural fluency, and problem solving skills are equally important and mutually reinforce each other. Debates regarding the relative importance of each of these components of mathematics are misguided.
- Students should develop immediate recall of arithmetic facts to free the “working memory” for solving more complex problems.
- The major topics of school algebra include symbols and expressions; linear and quadratic equations; functions; polynomials; and methods of counting and finite probability.

Student effort is important

Much of the public’s “resignation” about mathematics education is based on the erroneous idea that success comes from inherent talent or ability in mathematics, not effort. A focus on the importance of effort in mathematics learning will improve outcomes. If children believe that their efforts to learn make them smarter, they show greater persistence in mathematics learning.

Math in the Middle Summer Institute Dates

Cohort 3:  June 9-13  MATH 808T
            June 16-18  Capstone Course
            July 9-11   Capstone Course

Cohort 4:  June 9-13  MATH 805T
            June 16-20  MATH 806T
            July 7-11   STAT 892

The importance of knowledgeable teachers and effective instruction

- Teachers’ mathematical knowledge is important for students’ achievement. The preparation of elementary and middle school teachers in mathematics should be strengthened. Teachers cannot be expected to teach what they do not know.
- The use of teachers who have specialized in elementary mathematics teaching could be an alternative to increasing all elementary teachers’ mathematics content knowledge by focusing the need for expertise on fewer teachers.
- ‘Teachers’ regular use of formative assessments can improve student learning in mathematics.
- The belief that children of particular ages cannot learn certain content because they are “too young” or “not ready” has consistently been shown to be false.
- Explicit instruction for students who struggle with math is effective in increasing student learning. Teachers should understand how to provide clear models for solving a type of problem using an array of examples, offer opportunities for extensive practice, encourage students to “think aloud,” and give specific feedback.
- Mathematically gifted students should be allowed to accelerate their learning.
- Publishers should produce shorter, more focused and mathematically accurate textbooks. The excessive length of some U.S. mathematics textbooks is not necessary for high achievement.

Effective assessment

The National Assessment of Educational Progress (NAEP) and other state assessments in mathematics should be improved in quality and should emphasize the most critical knowledge and skills leading to algebra.


Artwork on reverse is courtesy of University of Utah student Jason Underwood. The text originated in a speech given by Jim Lewis, and culminated in a contest among their math students. Please feel free to reprint and post in your school.
If you're not busy learning mathematics,
then you're busy forgetting mathematics.

Take Math Every Year in High School

For an explanation of the picture above visit
http://www.math.utah.edu/poster