

PRESS RELEASE

TIMSS Results Place Massachusetts Among World Leaders in Math and Science

By: Mitchell Chester, Commissioner of Education

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Massachusetts' fourth and eighth graders outscored the nation, and most of their international peers, in math and science on the world's largest study of student performance in those subjects, Governor Patrick announced at the Manassah E. Bradley School in East Boston on Tuesday.

According to the results of the 2007 Trends in International Mathematics and Science Study (TIMSS), Massachusetts 4th graders ranked second worldwide in science achievement and tied for third in mathematics; the state's 8th graders tied for first in science and ranked sixth in mathematics.

"This achievement is the result of the commitment to high standards of teachers and students in classrooms across the Commonwealth," said Governor Patrick. "We cannot and will not let up until all students are performing at their very best."

Joint Committee on Education Co-Chair Representative Patricia Haddad agreed. "Once again, Massachusetts has demonstrated that our high standards will continue to yield high results," she said. "Our students and our educators deserve praise for their outstanding achievement on such a global scale."

TIMSS is an international math and science assessment administered every four years to a sampling of 4th and 8th grade students in participating nations around the world. The test was administered in April and May 2007 to 3,600 students attending 95 randomly selected schools in Massachusetts.

In science, Massachusetts 4th graders received a scaled score of 571, surpassed only by Singapore, which scored 587; in math the state's fourth graders averaged 572, behind Hong Kong SAR (607) and Singapore (599) and tying for third with Chinese Taipei (576) and Japan (568).

Eighth graders scored 556 in science, tying with Singapore (567), Chinese Taipei (561), Japan (554) and the Republic of Korea (553); in math, the state's eight graders scored 547, ranking sixth behind Chinese Taipei (598), Republic of Korea (597), Singapore (593), Hong Kong SAR (572), and Japan (570).

Massachusetts has a long history of success with education reform and the academic achievement of students,” said Education Secretary Paul Reville. “Our students have consistently performed at the highest levels on many national measures and now we have confirmation that many are prepared according to an international measure. Our task now is to transform our public education system so that all students receive the education, support and guidance they need to improve their achievement and acquire the knowledge and skills necessary to prepare them for higher education and an ever-evolving workforce.”

Elementary and Secondary Education Commissioner Mitchell Chester agreed. “These exciting results confirm that Massachusetts is performing as well or better than some of the highest performing countries in the world, which is a tremendous accomplishment,” said Commissioner Chester. “However, it is important to remember that the rest of world is not sitting still, and other nations are continuing to upgrade their curriculum and improving their performance in math and science. As wonderful as it is to be at or near the top of the world on an international assessment, our work is far from over.”

The percentage of Massachusetts students performing at the highest international benchmark category (Advanced) still lags behind leading Asian countries. In science, 22% of Massachusetts 4th graders met the advanced benchmark, compared to 36% of students in Singapore; in math, 22% were advanced, behind Singapore (41%), Hong Kong SAR (40%), Chinese Taipei (24%) and Japan (23%).

Other findings include:

- Massachusetts 8th graders made significant gains in math and science performance on TIMSS between 1999 and 2007. In math, the state’s 8th graders improved by 34 points, from 513 in 1999 to 547 in 2007. In science, 8th graders scored 23 points higher in 2007 (556) than in 1999 (533). There are no trend results for the state’s 4th graders.
- In grade 8 science, 20% of Massachusetts students met the Advanced Benchmark, behind Singapore (32%) and Chinese Taipei (25%). In math, 16% of the state’s 8th graders scored Advanced, behind Chinese Taipei (45%), the Republic of Korea (40%), Singapore (40%), Hong Kong SAR (31%), and Japan (26%).
- Boys outscored girls in Massachusetts on three of the four tests. At grade 4, boys outscored girls in math (578 to 567) and science (576 to 566). At grade 8, boys outscored girls in science (561 to 551), but the difference was not statistically significant in math (550 for boys, 544 for girls).

The Manassah E. Bradley School was selected for the site of the release because of its focus on science and continued increase in both math and science performance. The percent of students scoring Proficient or higher on the grade 5 MCAS science exam has risen from 49 percent in 2006 to 57 percent in 2008; the percent scoring Proficient or

higher on the grade 4 math exam has risen from 48 percent in 2006 to 58 percent in 2008. “We have a very positive school climate here,” said Bradley School Principal Anne Kelly. “The teachers work closely with one another, and there are high expectations for student performance among students and teachers alike.”

TIMSS was developed by the International Association for the Evaluation of Educational Achievement (IEA) in Amsterdam to measure trends in students’ math and science performance worldwide. In all, 59 countries and 425,000 students participated in the 2007 TIMSS administration. Massachusetts and Minnesota were the only two states to opt to participate as “nations.”

The sweeping sample offers countless opportunities for university researchers and educators in nations and states to compare the math and science achievement of their students with others, said Joseph M. O’Keefe, SJ, dean of the Lynch School of Education at Boston College, home of the TIMSS & PIRLS International Study Center, which conducts the survey.

“The comparison of scores across nations is but one aspect of TIMSS,” said Fr. O’Keefe. “The major purpose of TIMSS is the improvement of teaching and learning, by providing data that help countries identify strengths and weaknesses in achievement, monitor trends over time, and identify factors associated with high student achievement. That is the real power of this study.”

Additional information on TIMSS is available online at the National Center for Education Statistics’ website, <http://nces.ed.gov/timss/>, and the TIMSS and PIRLS International Study Center’s website at <http://timss.bc.edu/>.