

**The Newsletter
of the
New Jersey
Mathematics and
Science Education
Coalition**

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<http://sites.google.com/site/njmsec>

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The New Jersey Mathematics and Science Education Coalition is designed to

- ✦ improve mathematics, science, and technology education in New Jersey and
- ✦ increase public awareness of the importance of mathematics and science to the future of our children and our economy

by drawing together all sectors of the state, including education, public policy, business and industry, and the public, in a sustained multi-faceted statewide effort.

***Notes from the
Executive Director:***

The New Jersey Mathematics and Science Education Coalition on March 1, 2007, replaced the New Jersey Mathematics Coalition, which was founded in 1991. The Coalition is an independent organization, governed by a Board of about 60 members, including approximately 15 scientists and science educators, 15 mathematicians and mathematics educators, and 30 people with a strong interest in education from the business, policy, and public sectors of the community. The Board meets three times a year. As Executive Director of the Coalition, I welcome you to our first newsletter. Our hope is to inform you, interest you, and seek your opinion on mathematics and science education in our state. Many of you may recall that the Coalition provided extensive feedback on the Common Core Mathematics State Standards last year. New Jersey and 35 other states have adopted the common core. The Coalition now turns its efforts to helping teachers and districts with respect to implementation, curriculum and assessment. I welcome your feedback and comments on our newsletter and on our Coalition.

Eric Milou



The **VISION** of the Coalition is that **all** New Jersey students, children and adults, develop the mathematical, scientific and technological skills, knowledge, understandings, and attitudes that they need in order to be productive in their personal, work, and civic lives and thereby ensure that New Jersey has a competent and competitive workforce that will help us meet the challenges of the global economy.

Mathematics:

The Common Core State Standards in Mathematics (CCSSM) has been a national project designed to provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. Numerous organizations and individuals, including teachers and parents, mathematicians and researchers, across the country have contributed to the writing and reviewing the CCSSM. The authors indicate that these standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that young people need for success in college and careers so they can compete in the global economy.

The Standards communicate what is expected of students at each grade level, and are grouped in three categories: K-5, 6-8, and 9-12. The Common Core State Standards focus on core conceptual understandings and procedures starting in the early grades, thus enabling teachers to take the time needed to teach core concepts and procedures well so students have the opportunity to master the procedures and

have a full understanding of the concepts benchmarked for that grade level. The intent is to have students, parents and teachers all on the same page and working together for shared goals, to ensure that students make progress each year and graduate from school prepared to succeed in college and in a modern workforce.

All but 15 states have adopted the Common Core State Standards in Mathematics; only Alabama, Virginia, and Maine in the East have failed to do so by the writing of this newsletter. With CCSSM in place in 36 states, including the District of Columbia, students will be able to move across state lines and still be “on the same page” in mathematics.

The standards stress not only procedural skill but also conceptual understanding, to make sure students are learning and absorbing the critical information they need to succeed at higher levels. The authors believe this should replace the current practices by which many students learn enough to get by on the next test, but forget the material shortly thereafter, only to review again the following year.

Midge Cozzens



The State:

A look at New Jersey's implementation of the Common Core State Standards in Mathematics:

The Common Core State Standards were adopted by the New Jersey State Board of Education on June 16, 2010. Full implementation of the mathematics standards, in terms of both statewide assessments and district curriculum, will undoubtedly take several years. The New Jersey Department of Education is preparing to distribute a time line for implementation to help districts plan their revisions of curriculum and instruction. This time line will include a gradual phase-in of the new Common Core State Standards in Mathematics, beginning in the early grades.

Meanwhile, all statewide assessments for the coming year, including the HSPA through its last administration to first-time takers in 2012, will continue to be aligned with the 2008 New Jersey Core Curriculum Content Standards in Mathematics. See: <http://www.state.nj.us/education/aps/cccs/math/standards.htm>. Achievement of students taking algebra I will be evaluated

NJMSEC Goals:

Public Policy: to advocate the adoption and implementation of public policies which enhance the chances of success for all students in mathematics, science, and technology.

Public Outreach: to promote discussion, understanding, and support for New Jersey's Core Curriculum Content Standards in mathematics and science among parents and the general public.

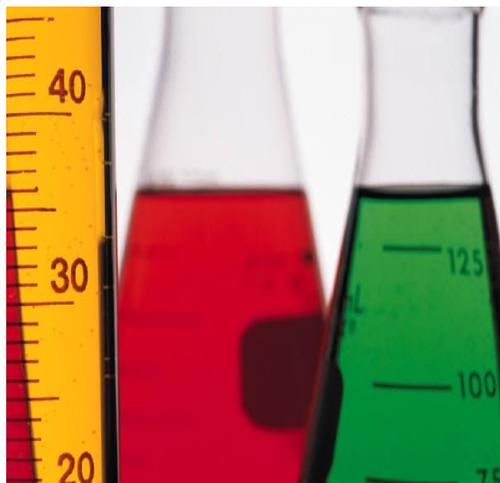
based on the American Diploma Project test standards. See:

<http://www.state.nj.us/education/aps/cccs/math/alg1content.pdf>.

The algebra I assessment is scheduled to move from pilot to operational this coming spring (2011). Based on the discussion at the September 1 meeting of the State Board of Education, there will be curricular and programmatic consequences for students who do poorly on this assessment. Students failing to score at the BASIC level will be expected to take the course over. Students scoring BASIC but failing to score at the PROFICIENT level will be required to have the benefit of some sort of intervention, perhaps separate or perhaps imbedded in a subsequent course, to improve their grasp of the algebra I content. The important aspect of the intervention is that it not be general remediation, but targeted intervention to help them accelerate, not slow down, their learning. It is important to note that for this first (2011) operational administration, a score at the proficient level will not be required as a prerequisite for graduation.

Classroom teachers, curriculum developers, and department supervisors should watch for forthcoming memos.

Bob Riehs



Science:

When most people hear the words “laboratory science” the first image that often comes to mind is a person (usually male) in a white coat surrounded by glass beakers containing bubbling chemicals in imminent danger of exploding. This stereotypical view is something that science educators in New Jersey try very hard to change. Science, by its very nature, seeks to answer questions about the world using data collected through observation and experimentation. The claims that scientists make are based on research that is testable and repeatable. The results can form the basis of a model about how the world works. Thus it is not surprising that scientific investigations in schools occur in regular classrooms, in computer labs, and out in the field. A well-constructed K-12 science curriculum provides students with opportunities in all of these areas. Ideally, students, both male and female, start the process of scientific inquiry long before high school. The National Science Teachers Association has developed a thoughtful position paper on laboratory science which recommends that, “all students at the

NJ MSEC Goals:

Curriculum Support: to support district alignment of curricula with the standards and classroom implementation of the standards by teachers.

Professional Development: to promote high-quality standards-based professional development activities throughout the state.

Assessment: to inform educators, policy makers, and the general public about progress in achieving our goals in improving mathematics and science education in New Jersey.

preschool and elementary level should receive multiple opportunities every week to explore science labs.” (NSTA, 2007) This paper promotes the continuation of labs in the middle school grades and throughout high school.

An emphasis on the process of inquiry, actively engaging students in the process of science, not just reading about science in a textbook, is woven throughout the 2009 NJ Curriculum Content Standards in Science (NJ Department of Education 2009) These Standards encourage students to develop explanations of phenomena they observe, while gathering evidence from age-appropriate experiments. The focus is on student-centered inquiry where K-12 laboratory experiences include:

- Physical manipulation of authentic substances or systems.
- Interaction with simulations.
- Interaction with authentic data.
- Access to large databases.
- Remote access to scientific instruments and observations.

For further information go to:
<http://sites.google.com/site/njmsec/>

Tom Smith