



AMTNJ News

Association of Mathematics Teachers of New Jersey / 856-358-4373

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Spring 2010

Common Core State Standards

48 States Plan to Adopt National Math Standards

Governors and state commissioners of education from 48 states, 2 territories and the District of Columbia are developing a common core of state standards in English-language arts and mathematics for grades K-12. Common Core State Standards Initiative (CCSSI) is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO).

The draft standards were released on March 10, 2010. Comments on the Common Core draft math standards were collected through April 2, 2010. The comments were sorted and each state will be provided with feedback from individuals in their state. In addition to receiving the New Jersey comments submitted via the Common Core web site, the state

Department of Education (NJDOE) also directly collected comments on the draft standards for both subjects.

On April 19, 2010, NJDOE staff and one of the authors of the mathematics section of the Common Core Standards, Jason Zimba, met with a group of concerned educators to hear feedback directly from New Jersey stakeholders. During the discussion, the author explained the intricate process of writing the first draft of the standards and presenting them to the public for comment. Presenters from the public, who had requested permission in advance, were permitted to give open feedback at the April 19th meeting. These presenters included representatives from higher education, school district supervisors, teachers and representatives from parent coalitions.

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Mathematics Education in the 21st Century

by Robert J. Riehs, Ed.D., Mathematics Specialist, NJ Office of Math and Science Education



Two Important Issues for Math Teachers

There are two huge issues that need to be on the radar screen of every K-16 teacher of mathematics in the United States, whether they teach in public schools or in private schools. Those issues are the formulation of national, "Common Core" standards in mathematics for K-12 students and the impact of technology on the ways students do and can learn.

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AMTNJ members participated in the panel discussion during the February conference: *Where Are We Going in Math Education?* see page 9

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*AMTNJ wants its
newsletter to be fair
and correct in every
way. If you have a
question or comment
about information in this
newsletter contact any of
the co-editors.*

President's Message

Come Learn With Us



by Connie Kelley

I know it is Hank Kepner, President of NCTM, San-springtime and I dra Alberti, NJ Department of Education, have been President and Laurie Boswell, Penn State Univer-sity and co-author of many mathematics textbooks from McDougal Littell (now called Holt McDougal). We have a Supervisors' conference planned for September and our third annual Special Education Conference is scheduled for December 2, 2010. Our annual two day conference, entitled "Tools of the Trade: Math Curriculum, Instruc-tion, Assessment & Professional Devel-opment" will be held on October 21-22 at the Somerset Crowne Plaza and Holi-Tony Trongone, led the panel discussion day Inn. that included distinguished educators

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AMTNJ Calendar of Events

August 15-20

**Institute for NJ Math Teachers (Ocean Grove)
contact Brian Hopkins: bhopkins@spc.edu**

September 20

**Supervisors' Conference
Edison**

October 15

Deadline to Submit Student Exhibits for Two-Day

October 21 - 22

**AMTNJ Two-Day Conference
Somerset**

November 4 - 5

**NJEA Convention
Atlantic City Convention Center**

November 10

Deadline to Register for HS Math Contest

December 2

**Special Education Conference
Crowne Plaza, Jamesburg**

December 8

AMTNJ High School Math Contest

Various Dates

**Professional Development Outreach Sessions
and WebPd
visit www.amtnj.org**

President's Message

Come Learn With Us

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But, remember, you do not have to travel or wait to get timely and useful professional development. AMTNJ offers an Outreach program that can bring an hour and a half session to your district tailored to your needs. We also offer a WebPD program that uses the Internet to bring PD right into your own home. All you need is a computer and a telephone. For details, check our website <http://www.amtnj.org>.

Another good reason to check our website regularly is directly related to the question asked at our February conference, "Where Are We Going in Math Education?" We all know that "change" is the big idea

now and, while education is always evolving, we are seeing a myriad of unprecedented changes.

AMTNJ is determined to keep our members informed. We will always have up-to-the-minute information from any agency that directly affects mathematics educators in this state. We want our members to be able to make informed judgments about any current proposals and initiatives in our field. And we want you to know how to make your judgments known. Working together, we can continue to raise the level of mathematics education in this state.

Differentiated Instruction Making Choices in Math Class

by Dr. Ann DeGroot and Dr. Julie Norflus Good

What does Differentiated Instruction actually mean? Math teachers can find this concept very challenging as they grapple with how to provide appropriate instruction for all their learners. Some have commented: "Do I need to make sure that the 27 students in my class each have individual activities?" while others ask: "How can I create 25 individual lessons for each of my students?"

When explaining this concept, we try to ease fears by reinforcing the notion that for many years teachers have differentiated instruction by finding ways to meet the needs of all of the learners in their classes. When the teacher provides a student with extra time to finish an assignment, or allows him to use manipulatives for math, the teacher is differentiating instruction. When a student, who always finishes her work early, gets an enrichment assignment, she is receiving differentiated instruction. Teachers do not need to have a separate lesson plan for each child.

Carol Ann Tomlinson explains that differentiated instruction allows students to have multiple options for taking in information, making sense of ideas, and expressing what they learn (Tomlinson, 1999). Tomlinson feels that a differentiated classroom provides

alternative avenues for acquiring content, processing or making sense of ideas, and developing products.

Multiple differentiated instructional strategies can be implemented during the day. Some include: interest centers/groups, flexible grouping, compacting, learning contracts, tiered activities and choice boards. All provide teachers and students with options on how to access and demonstrate material differently.

Choice boards are an exciting option for both teachers and students. This strategy places the options of learning in the hands of the students. With careful planning teachers encourage students to make decisions about how they will meet the requirements for an assignment. Students choose set activities that relate to the topic/unit of study. A choice board could be for a single lesson, a week-long lesson, or even a month-long period of study. In order to create a choice board, teachers need to:

- Identify the critical elements of the lesson or unit of study.
- Design possible math assignments/activities that expand, enrich or reinforce the basic concepts of the lesson or unit of study.
- When designing math assignments/

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Two Issues Core Standards and Technology Usage

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What Students Learn

As this newsletter is going to press, the period for public comment on the Common Core math standards has ended; and, amid much public venting, the math education community is anxiously awaiting the next draft. I say draft, because in spite of the writing team's attempts to make the next version the final version, their previous efforts suggest that their work may yet need at least some gentle massaging before being considered by states for their adoption. On the other hand, changes made between the various drafts clearly indicate that the writing team is attempting to be highly responsive to constructive criticism and suggestions. I, for one, will continue to carefully watch the evolution of these standards, and I intend to take full advantage of any future opportunities that may be offered to make constructive improvements to the document. I urge all AMTNJ members to do the same. Updated versions of the Common Core standards can be accessed electronically at <http://www.corestandards.org>.

How Students Learn

The other issue having an ongoing impact on the way students communicate and learn is technology. During the latter part of 2009, the New Jersey Department of Education offered a series of regional professional development opportunities, including presentations by Alan November (<http://novemberlearning.com>) and Ian Jukes (<http://committedsardine.com>). The basic point of the sessions was that today's students are digital learners. Emerging technology provides a variety of opportunities for learning. Students, for example, are no longer dependent upon the classroom teacher for the dispensing of knowledge.

YouTube (<http://www.youtube.com>) tutorials can help students learn concepts they had difficulty learning in class. Homebound students can have access to the classroom via Skype (<http://www.skype.com>). Students can take greater control of their own education, and the

learning process can be more easily tailored to meet the needs of individuals. The ways in which technology can improve communication are almost limitless. Ongoing Department professional development will further explore some of these ways. A schedule of upcoming professional development opportunities (some offered by the Department and some offered by partners of the Department) is available electronically at <http://www.state.nj.us/education/cccs/21cnjs/phase2/pd/brochure.pdf>.

Call for Judges

for the

AMTNJ ANNUAL STUDENT EXHIBITS

AMTNJ is seeking creative educators from both public and private schools to serve as volunteer judges for the AMTNJ Annual Student Exhibits during the 2-Day Annual Meeting. Judging will take place on Thursday, October 21, 2010 from 9:00 AM to 12:00 PM in the Somerset Holiday Inn. The amount of time required to judge projects in any one-grade band is approximately 1 hour.

If you are interested in judging, please reply by October 1, 2010. Send your name and information to: mitchellmm@att.net or to:

AMTNJ Student Exhibits
82 High Street, 2B
Orange, NJ 07050

AMTNJ Max Sobel Award

Each year, AMTNJ presents the Max Sobel Outstanding Mathematics Educator Award at its Annual Two-Day conference in October. This award is given to an individual who has contributed to mathematics education in New Jersey.

Nominations are now being taken for the 2010 Max Sobel award. The deadline for nominations is June 30, 2010. If you know of someone who has worked over the years to further New Jersey mathematics education, we ask you to:

1. Write a letter of nomination that includes name, address, and brief biography of the nominee that shows evidence as to why the person deserves to be considered for the Max Sobel Award. Include your name and contact information with the nomination.
2. Please forward your correspondence to amtnj@juno.com or to dsmith@pittsgrove.net and note Max Sobel nomination in the subject line.

AMTNJ Max Sobel Outstanding Mathematics Educator Award Past Winners:

1990 Max Sobel	2000 Paul Lawrence
1991 Evan Maletsky	2001 Jim Rahn
1992 Mary Froustet	2002 Regina Cullen
1993 David Glatzer	2003 Ken Wolff
1994 Janet Caldwell	2004 Marian Palumbo
1995 Karen Sanderson	2005 Angelo DeMattia
1996 Gloria Sanok	2006 Warren Crown
1997 Joe Rosenstein	2007 Joan Vas
1998 Steve Krulik	2008 Bob Riehs
1999 Joyce Glatzer	2009 Eric Milou

Tips for New Teachers

The first response to AMTNJ's request for ideas to share with new teachers comes from **Sandy Vorensky**, a math teacher at Edgar Middle School in Metuchen.

Hi, I would like to submit the following idea for your new teacher section in the AMTNJ newsletter. Keeping track of which students are participating can be a difficult task. Often, quieter students don't participate as a handful of others consistently raise their hands to answer questions. It's easy to avoid a situation where a few students dominate a classroom discussion.

When I teach, I think of a few patterns and I call on students following a set pattern. For example, I might call on students according to: "boy, boy, girl" or "every other student in a row", or "work from the back of the class to the front". Whatever pattern I choose, I make sure that all students are included during the lesson.

I hope that this is helpful!



by Jim Clayton

Thanks, Sandy!

We're sure many new teachers (and some experienced ones too) will put your idea into action right away.

Do you have a favorite idea or classroom strategy to share with a new mathematics

teacher? Send us a short paragraph and (if possible) a picture of you using the strategy in the classroom. Send your name, school address, and email to James Clayton, St. Peter's College, Jersey City, NJ. jclayton@spc.edu.

AMTNJ will publish the best ideas in upcoming editions of the Newsletter. Please let us know if we may publish your contact information.

--Jim Clayton, St. Peter's College, Jersey City.

Where Are They Now?

Former AMTNJ Scholarship Recipient

Colleen Sampson

Thankful for AMTNJ Support

Colleen Sampson teaches “*Investigations*” at the Pierce Middle School in Milton, MA for 7th and 8th grade students. Colleen attended Boston College where, in 2008, she earned a BA in mathematics and elementary education. She remained at Boston College for a 5th year program and earned a MEd in Moderate Special Needs. Although this is Colleen’s first year as a full-time teacher, because of her graduate school internship, it is her second year in a middle school.

Colleen attended Mountain Lakes High School in New Jersey, graduating in 2004. When we asked about her high school math background Colleen wrote, “I had some amazing math teachers who helped me create strong study skills. I took AP Statistics, Pre-Calculus, Honors Geometry, and Honors Algebra 2. My AP Statistics teacher was extremely engaging and gave us projects that related to real world events and gave math a life experience relevance.”

In college, Colleen found her mathematics courses appealing and challenging. She said, “One course I found interesting was Cryptography. My teacher was engaging, and the math involved was something I had never used before. I also had a statistics and probability professor who was so passionate about her content material that you couldn’t help but get excited about it also. She taught me many good techniques for teaching in the classroom.”

In 2008, Colleen received the *Bennett Award* from Boston College. This award is given for high-level achievement and desire to teach mathematics.

Colleen loves teaching middle school math. “... and I really enjoy working at the Pierce Middle School, so I hope to stay there for the next few years.”

She sends this message to her friends and former teachers in New Jersey.

Mathematics was always my passion, but teaching it is even better than simply studying it. Many students struggle with math and have developed a bad perception of



the subject matter as a whole. Therefore, helping students gain a stronger understanding of the material often lessens the dislike of math. The feeling of helping these students make a breakthrough is the most rewarding feeling I know, and I wouldn’t change my job for the world.

The AMTNJ scholarship was a huge gift to my family and me. Attending Boston College was amazing and the opportunities it created for me were so significant. However, it is a very expensive school and so this scholarship helped lessen the burden on my family and allowed me to gain the knowledge I have today that I will use for years to come.

Also the teachers I spoke with at the awards banquet for the scholarship gave me great advice including which path to take in terms of majors, grad school, and trying different jobs related to math. The AMTNJ Scholarship program is so supportive and I have much to thank them for!

**Donate to the
AMTNJ Scholarship
Touch the future!**

Looking for a gift to honor a retiring teacher or other favorite person? Make checks payable to “AMTNJ Scholarship Program” and mail them to AMTNJ, PO Box 7, Glassboro, NJ 08028. Donations are fully tax deductible.



Association of Mathematics Teachers of New Jersey

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Oct. 21-22, 2010

Becoming A Teaching Professional

by Deborah Bennett, New Jersey City University

In the fall semester prior to student teaching, every teacher-candidate for math teacher certification at NJCU takes my course, Methods and Materials of Teaching Mathematics in Middle and Secondary Schools. Every year I bring the teacher-candidates in that course to the AMTNJ conference, and for the past several years, the candidates have volunteered to be conference student-hosts where they provide assistance, attend workshops, and make connections that could lead to future employment.

Most of the math teacher-candidates have never been to a professional conference. This is their introduction to their future profession, the opportunity to actively

participate with a professional organization, and develop life-long interests in professional development. The candidates always learn a lot about what a professional organization has to offer and begin to eagerly anticipate their chosen career. I know for a fact that they had great fun as well. Although I could tell them all of this in class and even show them pictures while I attend alone, there is nothing like first-hand experience to make an impression. One of my candidates who will be relocating to Florida wanted to be sure that Florida also had a math teacher organization that he could join.

At the end of a long day of assisting at the conference and attending sessions, we still had smiles on our faces.



NJCU future math teachers and their advisor. Lower (front) row: Maria Quiambao, Juliette Cabrera, Dr. Deborah Bennett, Abiodun Banner, and Salma Bouassaoui. Back row: Azza Eltawil, Elizabeth Manfrede, Phil Carrillo, Edwin Rivera, Walter Fedzina, and Nicolle Urena.

AMTNJ February Conference

Over 270 AMTNJ members participated in the February Conference “Where Are We Going in Math Education?” Special guests who interacted with us were: Hank Kepner, NCTM, President; Sandra Alberti, Director of Math and Science, NJ DOE; Laurie Boswell, math text book author and Penn State professor; and Joseph Merlino, 21st Century Partnership for STEM Education. We also welcomed over 35 preservice teachers from three colleges, who helped keep the sessions organized and flowing and who also participated in the workshops and presentations.



*Above: Sandra Alberti, Director
Math and Science, NJ DOE*



*Left: Laurie Boswell, math textbook
author and AMTNJ conference
chairperson Tony Trongone*



Above: AMTNJ members participate in panel discussion.



Right: Hank Kepner, President, NCTM gives his viewpoint.

34th Annual AMTNJ High School Mathematics Contest

Wednesday, December 8, 2010

Register by Wednesday, November 10, 2010
\$30.00 per school

Awards for 4 highest individuals and
3 highest teams

Three team award categories
based on enrollment:
Small, medium and large schools

Registration form available at
<http://www.amtnj.org>
Click on “contests”

NCTM Gives Back

When you join NCTM using their online membership forms, you can check the affiliate box indicating that you are also a member of AMTNJ, AMTNJ will automatically receive a small part of your NCTM membership dues. This is only available using the online NCTM membership forms.

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go to:**

**<http://www.state.nj.us/education/events>
then select**

Phase 2 Professional Development

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Current Timeline

For the latest news on the Common Core initiative, visit www.corestandards.org. Information on New Jersey's Core Curriculum Content Standards and educator resources can be found at www.njcccs.org. In the next few weeks, Common Core authors will work with state partners on a new draft. Public comments can still

be made through the NJDOE web site. The Common Core writing group will update the public draft and then release a final version for consideration by each participating state. In New Jersey, the standards will come before the State Board of Education,

Right: Dr. Margaret Cozzens (left) Rutgers University, NJ Math and Science Coalition, and AMTNJ President-Elect, Cresenda Jones (right) contributed to the CCCSI discussion. Deby Ives (not pictured) participated and took the photos.



Important Features

An important feature is the focus in the early grades on Number and Operations, Measurement and Geometry. In response to questions about the sequencing of math before grade 8, specifically “what does algebra mean?,” Zimba cited an effort to reorient our language about “smaller” (in reference to fewer topics) since it does not include functions and modeling the way we know it now. Generalizing operations are emphasized.

Left: Marlton Middle School 6th grade math and science teacher, Kathleen McHale, and presenter Jason Zimba met following the question and answer session.

In response to an observation about the importance of new and varied approaches to problem solving are missing from the document, Zimba confirmed that sometimes traditional algorithms are accompanied by coping mechanisms that are used in

place of understanding. The example he gave was the less-than, greater-than memory “tricks”.

Assessment

Assessment is integrally tied to the CCCSI effort. Adopting common standards allows states to pool resources to develop assessment tools. The CCSSO vision is to use this common effort to produce both formative and summative assessments and to match them with appropriate technology. When asked about assessment, Dr. Sandra Alberti, Director, Office of Math and Science Education, responded “In answer to how this would be phased in, there may be waves of implementation – K-3, 4-6, etc.” Dr. Alberti mentioned the “. . . need for Professional Development for higher grade-band content, with curriculum work needed for lower grades.” She said, “When things are introduced it is very important that there needs to be (student) growth before handing off to (the) next teacher. The day we make a decision about standards, we need to look at preparation of curriculum and teachers.”

In New Jersey, starting with the 2010-2011 school year, achieving passing scores on the Algebra I assessment will become graduation requirements for all students taking these courses.

which will decide whether to adopt the final draft of the math and language arts standards. The timing for State Board consideration will depend on when the final draft is released, probably not until mid- to late-summer.

Curriculum

When asked, “How will this impact curriculum in schools?” Dr. Zimba’s response was that this is a system different than past practice:

There is a need for motivational classroom environments to bring math to life. Standards are not meant to stand in way of that. . . . at the same time they do not take on the task of providing that. CCCSI is not (meant to be) the blueprint that outlines or leverages the connections that will lead to good math. That is, the Common Core is not designed to be standards that are written daily on the board. Our job to design content is to have good fundamentals to be ready. An emphasis on conceptual understanding was intended, although it is clear from cognitive studies that meaning and skills are intertwined.

Choice Boards for Differentiation

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activities, be mindful of Howard Gardner’s multiple intelligences.

- Be open to incorporating interdisciplinary concepts.

Choice boards for math can be organized in ways that require students to choose options focusing on different skills and interests.

The choice board usually resembles a tic-tac-toe board. Students can complete three activities horizontally, vertically, or diagonally or the teacher can require fewer or more activities. In using choice boards, students tend to pick those activities that complement their cognitive levels, interests and learning styles. Teachers can strategically place items for students to encourage them to work outside of their comfort zone. Here is an example of a choice board for math:

Choice Board for Volume

Measure volume with various containers.	Cut out volume shapes from styrofoam.	Draw three dimensional shapes.
Predict the volume of various containers.	Use different items to fill containers, then compare volume.	Provide definitions of various shapes (cylinder, cone, etc.).
Write questions for a text on volume.	Read and report on <i>Counting on Frank</i> by Rod Clement.	Write a story demonstrating your knowledge of volume.

This concept challenges students. They are having fun while learning. Choice boards are not just a hand-out with an assignment. Choices allow students to be in control while still being guided by their teacher.

Tomlinson, C. (1999). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: Association for Supervision and Curriculum Development.

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Save the Dates!

September 20

Supervisors’ Conference

PSE&G Training Center, Edison

December 2

***3rd Annual Special Education/
Mathematics Conference***

Preparing for Revised State
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Check our web site for updated
info/registration for these
conferences

www.amtnj.org

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Back Page Problem Contest

A winner will be randomly selected from all AMTNJ members who submit a correct entry before June 30th. The winner will receive free registration to the AMTNJ Regional Conference October 21. Send in your name, school address, email, and the answers to: Dr. Bruce Bukiet Associate Professor of Mathematical Sciences New Jersey Institute of Technology, Newark, NJ 07102 or e-mail: bukiet@adm.njit.edu.

Spring 2010 Contest

Baseball Standings

Going into the 2010 baseball season, it looks like the Philadelphia Phillies will come in either first or second in their five-team division. It looks like the New York Mets will place second, third or fourth. How many possible orders of finish are there for the five teams in the division if the Phils and Mets are to satisfy the above criteria?

Phillies, Mets, Florida Marlins, Atlanta Braves, and the Washington DC Nationals is one valid outcome.

(Assume there are no ties).

Submit your answer to:

Dr. Bruce Bukiet
Associate Professor of Mathematical
Sciences
New Jersey Institute of Technology
Newark, NJ 07102
or email him:
bukiet@adm.njit.edu

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