



Special Interest Articles:

- President's Corner 1
- Public Education
Department News 2
- NM Curriculum
Adoption 3
- Navajo Elementary:
A TODOS School 4
- 2005 Conference
Presentation Form 5
- Math Websites 6

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President's Corner

Welcome to our first 2006 e-newsletter for New Mexico Council of Teachers of Mathematics members. We have many exciting events to look forward to this year in mathematics. Please make your plans to attend the State Math and Science Conference in Albuquerque NM November 2-4. The conference will have a wonderful slate of speakers, programs and sessions. This year we are fortunate to have Dr. Miriam Leyva the President of TODOS; Mathematics for ALL and Cathy Seeley the President of the National Council of Teachers of Mathematics as two of the guest speakers. We are working to develop a productive and useful conference for our math and science educators. We encourage you to share your expertise with the broader educational community by presenting a session at our State Conference.

The attendees in Roswell at the 2005 Conference were very satisfied with

what they learned and with the networking with colleagues. We also had mathematicians, astronauts, and wonderful teachers that contributed to this math and science event. Like the 2005 conference, there will be preconference sessions from math and science leaders like Claudia Ahlstrom our state math coordinator. These opportunities allow you to be at the leading edge of information and learning. This year the main conference will be held at the Albuquerque Academy on November the 2nd -4th, Thursday evening-Saturday afternoon.

This will be a conference filled with enjoyable sessions. Additionally, there will be many vendors. This is our NM math adoption year so make sure you look closely at the mathematics curriculum materials. We believe this is one of the most important decisions you and your district will make for your students in math. The curriculum materials you choose will



Dr. Cathy Kinzer
NMCTM President

affect the educational opportunities, attitudes and beliefs about learning mathematics for your students. We have included some information and announcements about mathematics curriculum evaluation and selection in this e-newsletter.

So mark your calendars! Talk to your principals and colleagues about attending/presenting at our State Math and Science Conference. Plan to join us for a collaborative learning opportunity. For registration and speakers information please stay tuned to our website (nmctm.org).

Respectfully yours,

Dr. Cathy Kinzer
NMCTM President

Public Education Department News



Dear Math Educators,

As the end of the school year looms in the foreseeable future, I encourage you to consider various opportunities for the summer.

First of all, I must plug the PED work that so needs your input.

- Math instructional materials adoption will be held in Albuquerque, June 4-9, 2006. This is extremely important work. For updates, please visit our website, http://www.ped.state.nm.us/div/learn_serv/im/.
- State assessment item review for the English version of the math and science assessments will be held June 12 – 16. This is also very important work and about 100 math teachers will be needed. The application has not yet been placed on the website, but when it is posted I will email you.
- State assessment data review for both the English and the Spanish versions of the math and science assessments will be held July 10 – 13.
- State assessment item review for the Spanish version of the math and science assessments will be held July 17 – 21.

Now if this PED work does not keep you busy enough, then I highly recommend that you participate in one of the many professional development opportunities available. Here is a brief sample of some of those activities:

- Mathematically Connected Communities (MC²) through NMSU. Contact Rick Scott at pscott@nmsu.edu
- La Meta through UNM. Contact Kristin Umland at umland@math.unm.edu
- MC² at WNMU. Contact Tom Gruszka at tpeter@cs.wnmu.edu

I also want to highly recommend that you visit a new website: <http://mathnm.org> As this website becomes populated, there will be lots of up-to-date information available to our community.

Keep up the great work.

Thank you,
Claudia Ahlstrom

Mathematics Consultant

New Mexico Public Education Department

505-827-8489 or claudia.ahlstrom@state.nm.us

For more information: <http://www.nmlites.org/>

New Mexico Legislature Gives New Support to Mathematics and Science Education

By Rick Scott, NMSU

Governor Richardson has signed legislation that provides \$250,000 to create a Math and Science Bureau in the Public Education Department and \$1,700,000 for Summer Institutes. These appropriations are a start to implementing the recommendations of the Math and Science Town Hall Meeting that was held in Glorieta last November. (A good overview of the Town Hall written by Kurt Steinhaus is available at <http://web.nmsu.edu/~pscott/partner.htm>.)

The Math and Science Education Act (Senate Bill 551) that would have created in state law the New Mexico Math and Science Initiative, the Bureau of Math and Science, and a State Math and Science Advisory Committee passed through the Senate without a single opposing vote. Unfortunately, it died in the House, along with many other bills, during a conflictive final day of the 2006 Legislative Session.

Fortunately, Education Secretary Veronica Garcia has the statutory power to create the Bureau. Senator Cynthia Nava, the Chair of the Senate Education Committee, vows to make math and science a priority during the intersession and is determined to champion the passage of the Math and Science Education Act during next year's 60-day legislative session. The New Mexico Partnership for Math and Science Education that convened the Town Hall along with New Mexico First will also be working to implement the Town Hall recommendations.

Information should soon be available on the details concerning the creation of the Bureau and the implementation of the Summer Institutes. The next New Mexico Partnership for Math and Science Education Spring Meeting is scheduled for May 5, 1-4pm, at the NM EPSCOR Conference Room, 801 University SE, Suite 301, Albuquerque, NM. The SB 551 Math and Science Act in the 2006 Legislature and further implementation plans for the interim will be discussed.

"Never doubt that a small group of thoughtful citizens can change the world. Indeed, it is the only thing that ever has."

(Margaret Mead, American cultural anthropologist)

Math Curriculum Adoption by Dr. Cathy Kinzer

Teachers in NM will be analyzing, piloting, and deciding on curriculum materials for math this year. This participation in the selection process of mathematics resources provides a rich opportunity to examine one's beliefs, research, and the math standards and benchmarks. There are many decisions that must be well thought out. Teaching involves making many important choices including which curriculum will be a useful resource to promote teacher and student learning. The math text can influence how students feel about math and perform in mathematics classes. The purpose of this article is to provide an initial framework for consideration based on research and suggest important criteria to guide teachers in the textbook evaluation and selection process.

Mathematics curriculum materials are a mainstay in many classrooms. Teachers interact with mathematics instructional materials on a daily basis. Teachers can enhance their content knowledge and pedagogy through the implementation of high quality engaging math textbooks. Students' opportunities to experience mathematics are greatly impacted by the curriculum they are required to use in their classrooms. It is not just what is learned but what types of opportunities are provided for learning.

The curriculum adoption process provides educators with a chance to examine their theoretical foundations and the current research in mathematics teaching and learning to make more informed curriculum choices. Van De Walle (2005) provides these fundamentals for a developmental approach to learning math:

1. Children construct their own knowledge and understanding; we cannot transmit it to passive learners.
2. Knowledge and understanding are unique for each learner.
3. Reflective thinking, mental engagement, creating ideas, and connecting them in a rich web of interrelated ideas to find solutions to problems are ingredients for effective learning.
4. Effective teaching is student centered where children are given the task of learning through actively engaging in good problems/tasks, productive cooperative learning environments, and sense making of mathematics.

In the book *Adding It Up* by the National Research Council (2001, pg 116) the goals for all math students were captured in the strands or components of mathematical proficiency. These strands are:

- Conceptual understanding -an integrated functional grasp of the mathematical concepts, operations and relationships that is more than isolated facts or methods.
- Procedural fluency -skill in carrying out procedures flexibly, accurately and efficiently and knowing when to use them
- Strategic competence- ability to formulate, represent and solve mathematical problems
- Adaptive reasoning- capacity for logical thought, reflection, explanation and justification
- Productive disposition- habitual inclination to see mathema-

tics as a sensible, useful and worthwhile coupled with a belief in diligence in one's own efficacy.

These five strands are interdependent and interwoven in the development of mathematical proficiency for all students. These stands should be developed and supported through the math texts that teachers use. The curriculum materials should be examined with a critical eye for these 5 strands of proficiency and the alignment with the NM Math Content and Process Standards.

The Content and Process Standards describe the basic skills and understandings that students will need to function effectively in the twenty-first century. The math curriculum needs to be mathematically rich, providing students with opportunities to learn important mathematical concepts and procedures with a deep understanding through the processes of problem solving, reasoning and proof, connections, communication, and representation. The National Science Foundation has highly recommended materials for math. They are referred to as standards based math curriculum. For further information on standards-based curricula please refer to the *Text Book Adoption Resources* section of this newsletter.

Another significant feature of the curriculum materials is the types of math tasks students are engaged in. The importance of good mathematical tasks can not be underestimated. Effective classroom instruction is often organized and orchestrated around rigorous and engaging mathematical tasks. The tasks with which students learn from determine what they learn about mathematics and how they learn it. The inability to enact *challenging* tasks well is what distinguished teaching in the U. S. from teaching in other countries that had better student performance on Third International Math and Science Study.

As you examine and rank math texts these are some important considerations. How does the curriculum:

1. Align with the strands of proficiency and NM content and process standards
2. Develop in-depth conceptual understanding of important ideas in mathematics
3. Build coherence within and across strands
4. Build on prior under- standings and connecting to the next grade expectations
5. Make connections among concepts, skills, applications and representations
6. Support growth in reasoning and develop problem solving and communication
7. Provide for maintaining skills and understandings
8. Use technology in appropriate ways
9. Provide comprehensive assessment both of and for learning
10. Include mathematical tasks that are engaging and useful
11. Support effective teaching/learning strategies
12. Facilitates exploration and addresses the learning needs for diverse populations of students

Navajo Elementary: A TODOS School by Dr. Cathy Kinzer

Imagine walking up to a school nestled in a southwest valley area of Albuquerque, New Mexico where parents and students are congregating at this educational center, Navajo Elementary School. As a TODOS School Chairperson, I had come to the school to visit and check in with teachers and students but on this particular morning I had the pleasure of attending a Lesson Study at Navajo Elementary. Two teachers, the instructional coach, and the principal were reviewing the revised research lesson that would be taught by the principal that morning. It was impressive to see the thoughtful planning and collaboration among administration, students, and teachers, as all engaged in the mathematics of the research lesson. Out on the playground and school patio, students counted ladder rungs, explored groups of benches, wondered about how to name half-circle sections of foundation footings, and interpreted divisions of swingsets in a variety of ways in this culminating activity to determine how students were able to apply fraction concepts in real world contexts.

There are about 600 PreK-5 students attending Navajo Elementary School. This Title One School is clustered in Albuquerque's South Valley neighborhood where local families enjoy a welcoming campus for their children. The school is an academic and social center for the area. The student population is comprised of predominately Hispanic students and they are excited to be a part of this thriving school for many reasons. Navajo Elementary is the TODOS Elementary School. What does this mean? Teachers and the principal, Tracy Herrera, are committed to supporting a high quality equitable mathematics education for all students, in particular Latino/Hispanic students, through advancing professional growth and equity awareness. Educators at our TODOS School are actively working to explore, develop and implement effective research-based mathematics teaching and learning for all students. The staff engages in ongoing learning related to the TODOS vision and goals. As a TODOS School they share experiences regarding the effective learning and teaching of mathematics with Hispanic students with the larger educational community and examine equity issues that affect math teaching and learning. The staff at Navajo is engaged in ongoing efforts to close the achievement gap.

Cindy Chapman, school instructional coach, TODOS Board member, and former NCTM Board member, and Tracy Herrera provide support for the teachers as they endeavor to become more effective practitioners. Navajo's teachers are also involved in this support and leadership. Members of last school year's Math Design Team developed school-wide math short cycle assessments that are being implemented this year. Members of the team provided math professional development early in this school year at Navajo, preparing and presenting a full day in-service on math and conducting lesson study orientation sessions. Most Navajo teachers are developing and refining their teaching and research practices through Lesson Study which is facilitated this year by five teachers in their third year of lesson study. A team of four attended Lesson

Study Leadership Training at New Mexico State University last summer. This year Navajo has established a Math Goal Team comprised of teachers from regular and special education at all grade levels as well as educational assistants.

Teachers Eileen Dominguez, (1st grade dual language), Robin Leinwand (K), Nancy Kent (K), Diana Villarreal (3rd/4th grades dual language), and Mary Ellen Ulibarri (speech pathologist) attended the CEMELA Institute. The Center for the Mathematics Education of Latinos/as (CEMELA) is an interdisciplinary, multi-university consortium focused on the research and practice of the teaching and learning of mathematics. Classes concentrated on math and language issues and Cognitively Guided Instruction. Dr. Rick Kitchen, a TODOS Board member, is a project coordinator and one of the CEMELA institute instructors. These Navajo Elementary teachers have made a 2-year commitment to CEMELA and are currently engaged in on-going projects. One of the lesson study groups is incorporating their CEMELA project into their study and collaboration this year. (The CEMELA Institute professor who taught the math and language issues course, Sylvia Celedon Pattichis, serves as a 'knowledgeable other' for the group.)

Teachers at Navajo are continually stepping up to serve on committees for improving mathematics education. Several have been involved in work on the state standards, NCTM program committees, an NCTM writing panel, TODOS national committees, and continuous improvement efforts, as well as many other professional endeavors. Navajo School educators have presented at the New Mexico Council of Teachers Mathematics Conference (NMCTM), national and regional NCTM meetings, and state and district lesson study conferences. As the TODOS Elementary School, the teachers are committed to ongoing improvement for all their students and are willing to share their work with the broader educational community. For further information about this TODOS School please contact Dr. Cathy Kinzer, cakinzer@nmsu.edu, Cindy Chapman, harrisb609@aol.com or visit the TODOS Website (<http://www.todos-math.org/>) for further information about the ongoing efforts of the professional organization and NCTM affiliate, TODOS—Mathematics for All.

Please Join Us in Albuquerque

NMCTM and NMSTA Conference

Soar to Greater Heights:

Science and Math for All

November 2-4, 2006

Albuquerque Academy

Visit our website, nmctm.org, for information

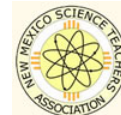
Soar to Greater Heights: Science and Math for All

New Mexico Council of Teachers of Mathematics/ New Mexico Science Teachers Association



November 2-4, 2006

Albuquerque Academy, Albuquerque, NM



Call for Proposal for Regular Sessions (Nov. 3-4, 2006)

(Please print clearly or type & retain a copy of this form for your records)

All parts must be completed for consideration.

Presenters:

Name	School/Organization	Email Address (one you check often)
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

Mailing Address for lead presenter:

Street	City	Zip	Cell /Phone <i>(for clarification during review)</i>
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Presentation Title: _____

Presentation length: Duration (check one): 45 minutes 75 minutes

Format: presentation hands-on workshop vendor/exhibitor workshop

Level: Elementary Mid-School High School Higher Education

Focus: Math Science Inter-disciplinary

Needs: Do you need tables for group work? or will desks be okay?

Are you willing to give your session more than once yes no

Is there a maximum number of participation (<18) for your session? yes no

Any other special considerations? (i.e. large audience accommodations, etc.)

NOTE: Rooms will have overheads. Presenters are responsible for any other AV equipment/technology.

Session Description:

Attach a **DETAILED** description of your session (no more than 200 words). Be specific, keeping in mind the focus of the conference is to address all styles of learning and cultures.

In Addition:

Program Description: Provide 2-3 sentence description as an abstract for the conference program.

Presenter's Description: Provide brief descriptions of the presenter(s).

Please note: Presenters must register for the conference.

Please visit <http://www.nmsta.org/> or <http://nmctm.org> to download a conference registration form.

Thank you!

Submit your proposal by September 8, 2006

by **email** to Vkauff@unm.edu or mail to:

Vicky Kauffman, NMSTA/NMCTM 2006 Conference Program Committee,
New Mexico Science Teachers Association, PO Box 30304
Albuquerque, New Mexico 87190-0304

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Thank you to everyone who provided information for this newsletter!

We're on the Web!

See us at:
<http://nmctm.org>

Comments, announcements, and interesting news about mathematics education should be sent to Sheila Hills at sshills@nmsu.edu for posting.

This newsletter would not be possible without MC²/MathStar support!

Mathematics Education Websites

NCTM website: <http://nctm.org> includes the NCTM Web news, Illuminations, and many additional resources to support mathematics education.

State Department website: <http://www.nmlites.org/> will keep you informed and up-to-date about assessments, grants, workshops, and math resources. Math Consultant contact: Claudia Ahlstrom, claudia.ahlstrom@state.nm.us

Textbook Adoption Resources

1. Critical Issue: Implementing Curriculum, Instruction, and Assessment

1. (Cont :) Standards in Mathematics
(<http://www.ncrel.org/sdrs/area/s/issues/content/contareas/math/ma600.htm>)
2. Data Driven Curriculum Reform:
http://cep.terc.edu/ra/publications/Alliance_Access/Vol3-No3/data-driven.html
3. MC2 website:
<http://mc2.nmsu.edu/mathstar/xts/index.html>
4. NM PED website:
http://www.ped.state.nm.us/div/learn_serv/im/
5. NSF Standards-based Middle Grade Curricula:
<http://www.showmecenter.missouri.edu/showme/Curricula.htm>
7. Other NSF-Funded Curriculum Projects:
<http://www.mathimp.org>

8. The K-12 Mathematics Curriculum Center:
<http://www2.edc.org/mcc/>



NMCTM/NMSTA 2005 Conference Update

Our annual math and science conference will be held at the Albuquerque Academy in Albuquerque, NM from November 2-4. Some updates about this conference are:

- On November 2 we will have many interesting pre-sessions to choose from. Details coming soon.
- *Exhibitor* and *Call for Proposals* to present are now available and included in this newsletter.

Please visit our website, nmctm.org, periodically as new information will be posted. We will notify you when individual registration forms are available.

Plan ahead by putting these dates on your school calendar as professional development days!

NMCTM Thank You

NMCTM had the opportunity to acknowledge two people that have made significant contributions to the NM mathematics education community. Dr. Karin Wiburg and Claudia Ahlstrom were honored by our state math professional organization New Mexico Council of Teachers of Mathematics (NMCTM). Claudia received her plaque and recognition at the State Math and Science Conference in Roswell. Dr. Wiburg received the honor for her accomplishments at a recent math meeting at New Mexico State University.



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