November 2009

Nebraska Summit on Mathematics Education

- Monday, December 14, 2009
- 8:30 a.m. - 5:30 p.m.
- Embassy Suites Lincoln, 1040 P Street
- Registration deadline: November 30, 2009
- Register online at http://scimath.unl.edu/csmce/summit_reginfo.php
- Travel support for attendees traveling more than 75 miles - lodging options on Web site
- A Sunday Pre-Session at Embassy Suites from 6 p.m. to 8 p.m. will offer enrichment activities for the mathematics classroom

Common Core State Standards

Destined to become national?

Are national standards in mathematics (and English language arts) just around the corner?

Not according to the people who are leading the Common Core State Standards initiative. Instead, they argue that this initiative is driven by collective state action and that states voluntarily will adopt the standards based on the timelines and context in their state. Viewed from the outside, however, this initiative very much has the feel of national standards and the timeline appears to have something in common with Superman, i.e. “faster than a speeding bullet.”

This year, the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO), in partnership with Achieve, Inc., ACT, and the College Board, began work on an initiative entitled the Common Core State Standards to articulate a common set of standards for each grade level in mathematics and language arts. Arguments in support of the initiative include (1) there are adverse effects of curricular inconsistency among states and school districts on students’ learning—particularly as a result of an increasingly mobile population; and (2) evidence suggests that too many students are leaving high school without the skills necessary to succeed in college or the workforce.

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Nebraska Algebra accepts applications

We are accepting applications for the second cohort of Nebraska Algebra teachers. Courses for Nebraska Algebra Cohort 2 will be offered in Grand Island as part of an effort to better support teachers from central and western Nebraska. For application materials and information about the program visit: http://scimath.unl.edu/nebraskamath/teacherapplication.php

NCTM seeks articles from teachers

Are you a teacher who helps students build connections between geometry and algebra? NCTM wants to hear from you. The editorial panel of NCTM’s publication Mathematics Teaching in the Middle School (MTMS) is seeking manuscripts on the teaching and learning that connect geometry and algebra in the middle grades.

Teachers are encouraged to submit articles that describe their personal experiences or activities that they have used successfully in the classroom. To enhance the effectiveness of a manuscript and to broaden its appeal to readers, consider including samples of students’ work.

MTMS has made this the topic of its 2011 Focus Issue due to the recent national attention algebra has received for its role in the curriculum. Along with the need to better understand algebra comes the need to view its properties as intrinsically connected to geometry. MTMS invites discussions that address concepts, pedagogy, curriculum, assessment, technology and professional development.

NebraskaMATH Research Coordinator Wendy Smith will help anyone interested write an article. The deadline for submission is Jan. 4, 2010. Smith’s e-mail address is wsmith28@gmail.com. See the following Web site for more information:

http://www.nctm.org/publications/content.aspx?id=22962

New Math Teachers’ Circle in central NE

University of Nebraska at Kearney Professor Pari Ford recently launched a Math Teachers’ Circle program in central Nebraska. While meeting locations vary, the circle typically convenes in Kearney. According to its mission statement, the purpose of the Central Nebraska Math Teachers’ Circle is to “establish a community of problem solvers, bringing together middle school math educators and mathematicians to enhance problem solving skills and reenergize a passion for mathematics.”

While most of the topics are intended to be accessible to teachers of middle-level mathematics, the problems are engaging for an audience with a wide range of mathematical backgrounds. Thus, both middle-level and high school teachers and pre-service teachers from Kearney and surrounding areas are invited to join with collegiate-level mathematicians and mathematics educators for evenings of conversation, dinner and engaging mathematics.

In October, the circle met at Horizon Middle School in Kearney for a session entitled “Mathematical Games,” an event that focused on determining winning strategies for two-player games. Additional meetings for the 2009-10 academic year are scheduled for:

- Monday, November 23
- Tuesday, January 19,
- Monday, March 1
- and Monday, April 12.

The meetings run from 6 p.m. to 8 p.m. and dinner is provided. Contact Pari Ford at fordpl@unk.edu if you would like to attend or receive meeting announcements. For more information about the Central Nebraska Math Teachers’ Circle, visit its Web site at www.unk.edu/mathcircle/.

The Math Teachers’ Circle for teachers in Lincoln and surrounding areas also will continue to meet during the 2009-10 academic year. Visit www.nebrwesleyan.edu/people/cminer/teachercircle.html for more information.
Highlight on Action Research

Summarization in Math Class by Scott Eckman, M² Cohort 3

Abstract: This action research study of twenty students in my sixth grade mathematics classroom examines the implementation of summarization strategies. Students were taught how to summarize concepts and how to explain their thinking in different ways to the teacher and their peers. Through analysis of students’ summaries of concepts from lessons that I taught, tests scores, and student journals and interviews, I discovered that summarizing mathematical concepts offers students an engaging opportunity to better understand those concepts and render that understanding more visible to the teacher. This analysis suggests that non-traditional summarization, such as verbal and written strategies, and strategies involving movement and discussions, can be useful in mathematics classrooms to improve student understanding, engagement in learning tasks, and as a form of formative assessment.

To read Scott’s full paper and other action research papers from the Math in the Middle Program, see http://scimath.unl.edu/MIM/ar.php

Resources

Improving Mathematics Teaching and Learning

The Mathematical Sciences Research Institute (MSRI) has published a booklet based on the workshop Teaching Teachers Mathematics: Research, Ideas, Projects, Evaluation, the fourth in a series entitled Critical Issues in Mathematics Education.

The workshop was held on May 30–June 2, 2007, and focused on mathematical preparation and professional development for teachers from kindergarten to grade 12. Much of the structure and content of this booklet comes from talks and comments by the workshop participants, including UNL professors Jim Lewis and Ruth Heaton.

Lewis and Heaton’s talk centered on the progression of the Math in the Middle program, designed to improve teaching in the state of Nebraska.

The booklet discusses many aspects of the mathematical education of teachers, including how to teach teachers mathematics, what we should teach teachers about mathematics and language, collaborations between universities and public schools, and measuring such programs’ effectiveness.

To order a copy of this booklet, call MSRI at 510-642-0143. For more information on MSRI workshops, please visit: http://www.msri.org

What, after all, is mathematics but the poetry of the mind, and what is poetry but the mathematics of the heart?

— David Eugene Smith
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The NGA and CCSSO recognized two potentially conflicting perspectives that must be addressed by this initiative: the issue of national curricular coherence and that of local control of educational decisions. Thus, prior to moving forward, the NGA set out to bridge these two perspectives by getting governors to agree to adopt the standards in their respective states once they were developed. As of September, 51 states and territories have joined the common core standards initiative. Thus they believe that these standards are being initiated at the state level, but have the potential to determine what constitutes school mathematics nationwide.

With the support of the nation’s governors in place, the College and Career Readiness Standards were drafted. A public draft was made available during September and October to encourage feedback from a wide audience (October 21 was the deadline for comments). Feedback was also sought from the K-12 community (including the National Council of Teachers of Mathematics) and the collegiate community (especially the American Council on Education). Jim Lewis, PI for NebraskaMATH, was part of a group of 25 mathematicians and mathematics educators who met in Washington in October to offer feedback on behalf of ACE and the Conference Board of the Mathematical Sciences. An expert validation committee composed of nationally and internationally recognized education experts who are said to be neutral to – and independent of – the process, is now reviewing the feedback and will recommend appropriate revisions.

As the College and Career Readiness Standards near completion, others are working on behalf of the Common Core initiative to create grade-by-grade mathematics standards for kindergarten through grade 12. These are scheduled for release in early 2010 (perhaps as early as January). The goal is to have these standards completed and adopted by early spring, a surprisingly quick timeline. Indeed, privately many people who are working on sections of the grade-by-grade mathematics standards believe that the quality of the standards will suffer as a result of the effort to finish the work so quickly. For up-to-date information about the ongoing development of the standards and the approval process, visit http://www.corestandards.org/.

What is driving such a fast-moving initiative? Many people believe that the looming competition for Race to the Top funds and the expectation that access to these funds will be tied to support for the Common Core initiative is the reason that the effort has garnered so much support so quickly.

One should note that Nebraska Governor Dave Heineman is a member of Achieve (http://www.achieve.org/), a board that is integrally involved in the Common Core initiative. Thus, it should come as no surprise that Nebraska is among the states committed to adopting the standards once the writing process is complete. Indeed, an effort is currently underway to revise Nebraska’s statewide graduation requirements, and drafts of these revisions have already been sent to the Achieve board for review. Among the suggested changes influenced by the board is the requirement of three years of mathematics in order to graduate from a Nebraska high school.

Stay tuned. Once the dust settles, the Common Core initiative and rigorous high school graduation requirements may have an impact on K-12 education that impacts even what is taught in the primary grades.

UNL Math Day will celebrate 20 years

UNL Math Day will celebrate its 20th anniversary on Thursday, Nov. 12, 2009. As part of the celebration, opening ceremonies will be held in the Lied Center for Performing Arts located at 12th & R Streets. Last year, UNL hosted 1,343 students from 99 Nebraska high schools.

All students participate in a multiple choice, preliminary exam called PROBE I (Problems Requiring Original and Brilliant Effort). The top 50 students move on to take the now famous essay exam called PROBE II.

The purpose of Math Day (http://www.math.unl.edu/programs/mathday) is to stimulate interest in mathematics among Nebraska high school students, to encourage them to pursue mathematics or mathematics-based science as a career and to recognize mathematical ability by awarding scholarships, certificates and trophies. Math Day consists of one individual and two team mathematics competitions.