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NebraskaMATH March 2010 Newsletter

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Recall in the October 2009 issue of the NebraskaMath newsletter we included an article summarizing the writing process behind the revisions of Nebraska’s state standards. The revised version of the standards now has been adopted, and we wish to update our readers on what is happening and how this will impact Nebraska teachers. Deb Romanek, Director of Mathematics for the Nebraska Department of Education, offers the following summary:

For more than a year, many Nebraska K-12 mathematics teachers have been busy working on two state-level projects: Mathematics Standards Revision and Test Item Development. Revised Mathematics Standards were adopted by the State Board of Education in October 2009 and formally placed into Rule 10 on January 14, 2010, with the Governor’s signature. The revised standards are found on the Nebraska Department of Education Web site at http://www.nde.state.ne.us/ndestandards/AcademicStandards.htm.

The documents are ready for teachers to print and then have conversations about the concepts and skills expected from their students. The standards are available in two formats, which serve different purposes. The first is the vertical layout, which is organized by grade levels (Kindergarten through eighth grade and high school), providing guidance on what mathematics will be taught and mastered at a specific grade. The second format is horizontal, which is most helpful when schools work on aligning their local K-12 curriculum because it provides a look at the content across grades.

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Highlight on Action Research

Reading as a Learning Strategy for Mathematics
by Monte Else, M² Cohort 3

Abstract: In this action research study of 55 sophomore and junior students in my Algebra II/Trigonometry classrooms, I investigated a reading strategy of learning mathematics. Students were given background information about reading and explored the benefits of reading for themselves. Next, students were taught to read their textbook, analyzing one section of the textbook at a time. Throughout the research project, students were given reading guides to fill out during class with whole class discussion following the reading time. I discovered that students are able to read a mathematics textbook with understanding and students who are gone for activities can learn independently. Teacher observations, student surveys, and student interviews provided quantitative and qualitative evidence of increased student understanding and achievement. As a result of this research, I plan to continue utilizing the reading guides and incorporating reading as a method of learning mathematics within my classrooms.

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

Resources

NCTM Illuminations: “Paper Pool”

Looking for an interactive game to play in the classroom? NCTM’s Illuminations, Resources for Teaching Math, website offers the materials for “Paper Pool,” a game modeling billiards that allows students to develop their understanding of ratio, proportion, greatest common factor and least common multiple, as well as search for patterns. This game is adaptable to any classroom as it can be played on a computer or by using paper grids.

“Paper Pool” is played on rectangular grids made of congruent squares. (See http://illuminations.nctm.org/LessonDetail.aspx?ID=U165 for a sample and five lessons.) An imaginary ball is hit from the lower left-hand corner at a 45° angle. A ball hit in this way will bounce off each side it hits at a 45° angle. The ball continues to roll until it reaches a pocket located at one of the corners. Students predict the pocket at which the ball will stop and how many hits will occur.

The Paper Pool unit was adapted with permission and guidance from the Connected Mathematics Project.

To demonstrate and play “Paper Pool” online, please visit: http://illuminations.nctm.org/ActivityDetail.aspx?ID=28

Are you using technology in your classroom?

Do you have some interesting lessons or learning tasks you do with students that use technology? We would like to submit some articles to a journal, and Wendy Smith would like to help you create an article based on what you are doing in your classroom. Your contribution to an article will mainly be giving us a general overview and writing some descriptions of how your lesson with technology goes. Contact Wendy at wsmith5@unl.edu for more information.
grades. A few differences you will find in the revised standards are:

- Six broad categories have been condensed to four K-12 comprehensive standards.
- Fifteen concepts (listed in the horizontal format) help organize the grade-level standards.
- Standards are now written for each grade, instead of bands at the K-8 level. High school remains as a band and is not designated per grade 9-12 or by courses.
- A greater degree of specificity is reflected at the curricular indicator (denoted by a letter) level.

While the ink was still drying on the standards, teachers gathered to create test items on selected curricular indicators. The selected indicators are found in a table of specifications (TOS), located at the following link: http://www.nde.state.ne.us/assessment/NeSAMath2009-10.htm.

These items will be field tested this spring with Nebraska students to determine the quality of the items and which ones might be selected in 2011 when the statewide math tests are implemented. No student data will be gathered or reported with the field testing in 2010. Students will take either the paper-pencil or online version of the test. If you and your students want to become more familiar with the online format, it is suggested that you download the CAL software found at http://nesa.caltesting.org/ to your computer and have the students go through the tutorial. This is an excellent way to see how the items will be displayed and what tools will be made available. There will be approximately 60 test items that can be taken over two sessions.

Clarifications most commonly requested regarding statewide math tests:

1) Calculators will NOT be permitted (unless usage is specified in the student’s IEP).
2) Reference sheet is available for student use online; it will be available from a drop-down menu but will not be printable.
3) Scratch paper that will be gathered and destroyed may be used during the test.
4) Data will not be collected at this time on the locally assessed curricular indicators.

**Teachers: Take a class this summer**

Through the Nebraska Math & Science Summer Institutes (NMSSI), UNL is offering professional development and graduate coursework for Nebraska’s K-12 teachers of mathematics and science. There are more than 20 courses from which to choose, offered both in Lincoln and five other locations across the state. Registration opened March 8. For fellowship information and course descriptions, please visit: scimath.unl.edu/nmssi

**Harlem academies founder says to invest in teachers**

Op-Ed columnist Bob Herbert of the New York Times spoke in February with Harlem Village Academies founder Deborah Kenny, a teacher who has created three successful charter schools in Harlem, about the national attention she has received. Kenny said she believes there is an overemphasis on “program elements, things like curriculum and class size and school size and the longer day,” which makes it difficult to repeat successes found in outstanding schools.

Instead, as Kenny said, “You put all of your focus on finding great people and you establish a culture that helps them constantly learn and grow and become better at what they do. You have to provide a community in the school that supports and respects teachers. And you have to give them the kind of freedom that allows their passion for teaching to flourish. We’ve created a culture that brings out the passion of the teachers and they bring out the passion of the kids.”

Herbert observed from his visits to Kenny’s schools that the teachers are “doing everything but teaching to the tests,” he said, adding that passing a standardized test was felt to be hardly something to which to aspire.

Kenny said she has five core goals for her students: be wholesome in character, be compassionate, have sophisticated intellect, be avid readers and be independent thinkers.

To read Herbert’s full column, see http://www.nytimes.com/2010/02/23/opinion/23herbert.html?emc=etal
Getting involved with MATHCOUNTS

With regional MATHCOUNTS competitions completed, and preparations for the state competition under way (the state competition will take place March 20), NebraskaMATH staff thought it would be interesting to know who among NebraskaMATH and Math in the Middle participants serve as MATHCOUNTS coaches for their schools.

We received numerous responses in which teachers enthusiastically shared information with us about their MATHCOUNTS students’ individual and team achievements. We continue to be amazed by all that Nebraska teachers are doing to help their students improve in math and are pleased that you are out there making a difference in the lives of Nebraska’s students.

Anna Anderson, a Math in the Middle participant, coached her Holdrege Middle School MATHCOUNTS Team to an eighth-place finish in the chapter competition on Feb. 3, 2010, in Kearney. One of her eighth-graders will be competing at the state level in the Individual Competition.

Another Math in the Middle participant, Marci Ostmeyer, a teacher at Cross County Middle School, shared with us that her school was the first winner of the MATHCOUNTS Club Gold Level drawing. She and four students won a free trip to watch the National MATHCOUNTS in Denver in May 2008. They were also awarded $500 and the club treated the entire middle school to a swim party celebration that summer.

“The photos of my team have been included in some promotional material, and I wrote an article detailing our experience for a MATHCOUNTS news release,” Ostmeyer added.

Connie Colton of the McMillan Magnet Center said she uses MATHCOUNTS materials almost daily with her competition math students, and they always compete in the regional. In 2010, her team placed second at regionals and has moved on to the state competition. Two years ago, one of her male students competed in the National Competition and placed 60th.

Andrea Volf said her Irving Middle School team from Lincoln placed second at regionals and will be competing at state this year.

Other MATHCOUNTS coaches from NebraskaMATH or Math in the Middle programs are: Cathy Schultz, West Point; Jessica Thompson, Superior Junior/Senior High School; Michaela Goracke, Harvard Public School; Emily Lashley, Southwest High School, Indianola; Diana French, Alliance Middle School; Scott Eckman, Park Middle School, Lincoln; Virginia Clark, Waverly Middle School; and Amy Schutz, Bertrand Community School.

MATHCOUNTS is an outreach program led by the National Society of Professional Engineers (each state has its own sub-society), inspiring middle school students through fun and challenging math programs and creating a foundation for success for them in STEM careers. The MATHCOUNTS Competition Program provides school-, chapter-, and state-level competitions, with a National Competition each May.

The MATHCOUNTS Club Program is free and provides schools with the structure and activities to hold regular meetings of a math club. See https://mathcounts.org for more information.
Watch Summit video

Video taken of several speakers at the Nebraska Summit on Mathematics Education on Dec. 14 will be available online in the next few days on the Center for Science, Mathematics & Computer Education’s Web site: http://scimath.unl.edu/csmce/archive/summit.php. A photo gallery already has been posted.

Statistics doctoral student wins graduate award

Jennifer Green, doctoral student in Statistics at the University of Nebraska–Lincoln, received the Outstanding Graduate Teaching Assistant award and was recognized during the annual Graduate Studies Awards reception in February 2009. The Creighton, Neb., native received her undergraduate degree in mathematics secondary education and was admitted to graduate school in Fall 2006 to UNL’s statistics program and was awarded a teaching assistantship.

Green works closely with the NebraskaMATH team and has been integrally involved in the development of a statistical model used to analyze the impact of the Math in the Middle program on student achievement; a statistical model which has become the topic of her dissertation. Green also has been involved with the analysis of teachers’ gains in mathematical knowledge for teaching as a result of their participation in the program. She expects to receive her doctorate in May 2010.

Common Core Standards released for public comment

The National Governors Association (NGA) and the Council of Chief State School Officers (CCSO) released the first official public draft of the Common Core State Standards for K-12 Mathematics and English Language Arts standards on Wednesday, March 10. They are offering the documents for public comment until April 2.

The Center for Science, Mathematics & Computer Education (CSMCE) would like to compile comments from Nebraska stakeholders in mathematics education regarding the draft of the Common Core State Standards for Mathematics, share the results with Nebraska, and forward them to the NGA/CCSO. To access the draft materials and submit your comments to the CSMCE, please visit our Web site at scimath.unl.edu. In order for us to process your comments, please post them by Monday, March 29. If you would prefer to respond directly to NGA/CCSO, please visit http://www.corestandards.org to access their survey.