December 2008

KATM BULLETIN

Kansas Association of Teachers of Mathematics

What is New with KATM?

∞ KATM Conference 2008 is scheduled for FRIDAY, OCTOBER 23 2009. This will be a one-day conference in HAYS, KS. Mark your calendars and check the website and bulletin for details. Scholarships will also be awarded at this time. Check out page 6 for this year's winners and how you can apply for next year.

 \sim At KATM Conference 2008 we are wanting to address specific issues in our break-out sessions Do you have expertise in a topic and are willing to present. Here is the break down were are looking at:

K-3 Geometry, K-3 Algebra, K-3 Data, K-3 Pedagogy, 4-6 Geometry, 4-6 Algebra, 4-6 Data, 4-6 Pedagogy, 6-12+ Geometry, 6-12+ Algebra, 6-12+Data, 6-12+ Pedagogy, So...I know it's early...but it's never too early... If you know of any colleagues, etc. who would be good presenters for the conference in a particular area, or if you would be a good presenter in one of these areas, please contact Jerry Braun @ jbraun@usd489.com!

∞ The KATM Board has been having discussions concerning the direction of KATM. We would love to hear from you. Let us know what you would like to see the KATM organization do, promote, help teachers with inside and outside the classroom etc. Just send an email to lyoung@fhsu.edu.

 $\, \simeq \,$ Check the KATM website for ZONE NEWS for information about what is going on in your area.

∞ Did you know you can renew your membership on-line? You can even use PayPal instead of mailing your check. You can also renew your NCTM Membership with us.

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Christine Staab Louisburg High School

"It's not that I'm so smart, it's just that I stay with problems longer."

-Albert Einstein

President's Letter

Brought to you by Christine Staab

I hope many of you had the opportunity to attend the SMARTT conference in Overland Park. On behalf of the attendees, I extend a sincere thank you to the conference committee. I know how much time and energy it takes to plan and implement a conference.

Conferences always motivate me to try new techniques and activities in my classroom. They also make me reflect on my profession and my role in Kansas mathematics education. KATM is actively seeking ways to support current and future math teachers. I challenge all of you to take on the same initiative.

Here are some ways you can be a leader in mathematics education:

Listen to your colleagues. Let them know you care. Share a favorite website, book, or lesson idea. Read a professional journal and share it with others. Become active in your professional organization(s). Join a committee. Ask others to join you at a conference. Email your KATM President.

Choose one (or more) and try it today. Math teachers created the first standards in Kansas; let's keep up the tradition of excellence!

Christine Staab

Mathematics for the Elementary Teacher

Brought to you by Angie Kisner

Tally Marks - lower elementary

Ok, when you read this you may think "ew gross", but this is an activity that I do to introduce tally marks to my kindergarten class. When the weather starts getting colder, we have an abundant supply of flies buzzing around. When we kill a fly, we put up a tally mark. We change the color of marker each day, so not only are we able to do tally marks, but we can make an AB pattern, or whatever pattern we want to make. We chose to do an ABC pattern. This activity also provides food for our lizard. The kids love making the tally marks and counting by 5's each day to get the total.



Angie Kisner teacher kindergarten at Copeland Elementary.

We could take it a step farther and graph our results for the day.

I have incorporated tally marks when counting words in a sentence. The kids also use tally marks when keeping track of who wins in tic-tac-toe.

Tally marks are a 3rd grade math standard.

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Mathematics for the Middle School Teacher

Brought to you by Fred Hollingshead

As middle school and junior high teachers, I am of the opinion that we have the greatest opportunity of any grade level to solidify our students' understandings of necessary number facts as well as lay a solid foundation for success in their future mathematical endeavors. In order to meet such important tasks, it is our duty to give every student that walks through our door an environment in which they are allowed to actively participate in the learning *and* teaching process.



Fred Hollingshead is a 7th and 8th grade math teacher at Shawnee Heights Middle School in Tecumseh, KS

The Partnership for 21st Century Skills (P21) has presented their Framework for 21st Tecumseh, KS Century Learning. If you are unaware of this document, you can familiarize yourself with its contents at P21's website www.21stcenturyskills.org and select "Framework" under the "Overview" tab. Kansas officially joined the partnership and has recently completed a similar document entitled "21st Century Learning Profiles" which can be viewed at www.ksde.org/learn21. It is our state's vision that the 21st Century Learner and the 21st Century Learning Environment become realities in every school and in every classroom.

A greater reality to teachers is the first semester of our year is already coming to a close and it will soon become time to put an even more intense focus on the state assessments that, for many of us, will occur in March or April. In math classrooms across the state, teachers, for better or worse, will begin to spend much more of their time specifically preparing students for the critical tests.

These views may seem to conflict with each other: How can we create such visionary learning environments but ensure our students can meet proficiency on state assessments? On the surface, to many of the teachers I speak with, these ideas are mutually exclusive. On the contrary, they are anything but. We must adhere to the guidelines set forth by our state and deliver the content found in each grade level's standards document. *And*, we must successfully teach the content while giving our students a classroom in which they can learn to explore and find new knowledge, validate, synthesize and leverage it, and communicate, collaborate, and problem solve with it. While all grades will be expected to implement this model, it is in our 6th, 7th, and 8th grade classrooms that the greatest opportunities lay - our students are old enough to have developed some advanced technological skills yet still exhibit the passions for learning that tend to fade in some of our students as they grow older. Such 21st century learning environments, however, stoke those learning passions and will help us to move on those same students with their learning passions still burning.

A final reality is many of us are unclear about what all of this means or how to create such learning environments. Some of your questions can be answered on the two websites I mention above and by reading the documents available on those sites. Other questions you may have will be answered in time. KSDE is putting together guidance for teachers, administrators, and districts on state and P21 initiatives and help is available at conferences like SMARTT which was just held last month in Overland Park. Be on the lookout for other area conferences, including the coming KATM 2009 conference to be held in Hays in October. I will also offer some hints and resources that you can use to promote 21st century learning and teaching in your own classroom in the next issue of the Bulletin.

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KATM Supports Two Teacher Scholarships

KATM has partnered with Capitol Federal to develop the **Capitol Federal Mathematics Teaching Enhancement Scholarship**. This scholarship provides \$1,000 to the winning proposal to use for classroom, and school enhancement of mathematics.

For 2008, **Kathy Clouston** is the recipient of this generous scholarship. Kathy is a fifth through eighth grade math and science teacher at Sacred Heart of Ness City School. Ms. Clouston will use the money:

to fund a computer license for math site which will be used at all grade level.

to purchase math manipulatives for grades K-8th grade

to fund materials for four Math Focus days which pairs older students with

younger students with a focus on a specific topic each time.

for supplies for Math "Parties" where students create and play math games

to purchase reference/ resource materials for math.

Congratulations to Kathy and good luck to Sacred Heart School as they boost their mathematic programs through the use of these funds.

KATM has a second scholarship which is ONLY for elementary teachers. This scholarship is named in memory of Cecil Beougher who was an elementary teacher and in honor of her husband, Elton Beougher, who was a vital member of the KATM board for many years. The **Cecil Beougher Scholarship** provides up to \$400.00 in cash to defray the costs of registration fees, substitute costs, tuition, books etc. for a conference or course. Upon verification of attendance at a conference or enrollment for college credit: the scholarship provides up to \$100.00 cash award for the purchase of materials/resources for teaching mathematics. For those receiving



college credits there are two additional incentives: an NCTM Membership and a three year KATM membership.

The 2008 recipient is **Deb Nauerth**. Deb is a gifted education teacher who serves three elementary schools in Manhattan, Kansas. Deb would like to purchase additional resources to better challenge the minds of her gifted students. With the scholarship funds Deb attended the NCTM Regional Conference in Oklahoma City, Oklahoma in October and the SMARTT conference in Overland Park in November. She will also purchase the series "Navigating through Measurement" Grades 3-5 and 6-8 and "Navigating through Data Analysis." These NCTM resources will provide discovery learning opportunities for her students. Congratulations, Deb Nauerth!

The Capitol Federal Savings \$1000 scholarship is awarded each year at the KATM Conference to a practicing Kansas (K-12) teacher for the best mathematics teaching enhancement proposal. The Cecile Beougher Scholarship is to be awarded to a practicing Kansas elementary (K-6) teacher for professional development in mathematics or mathematics education including but not limited to course work or participation in a regional, national or state conference. If you are interested in applying for one or both of these scholarships, please check out the applications under Scholarships at www.katm.org



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Calling ALL Leaders and Mentors in Mathematics Education!



Are YOU Leading the Way for a Better Future for EVERY CHILD or Settling for Status Quo in Mathematics Education?

Student achievement in mathematics is unlikely to improve significantly beyond current state and national levels until we, as leaders, assume and exercise professional responsibility and accountability for our own practice and the practice of the teachers we mentor. (PRIME Leadership, 2008 p. 1)

Quality mathematics teachers in Kansas must take a stronger lead in mentoring of teachers and in leading the learning of high-quality mathematics! In Martin Luther King, Jr.'s acceptance of the Nobel Peace Prize in 1964, he stated: *"I refuse to accept the idea that the "is-ness" of man's present nature makes him morally incapable of reaching up for the eternal "ought-ness" that forever confronts him".* (PRIME Leadership Framework, 2008 p.1) As mentors and leaders in mathematics we have got to stop settling for the current state of *"is-ness"* in mathematics education. But, rather lead with a vision of what *ought* to be, in mathematics education.

Too many of us are *standards-referenced* (i.e. we know the standards exist, know where to find them on the KSDE website, have read the standards, occasionally refer to the standards during planning, check to see if what is being taught can be found in the standards to make sure it matched the tested indicator, teach to the test) rather than *standards-based* teachers (those who understand the power and focus the standards provide and work to identify the essential understandings that are embedded in and that transcend the standards, and are able to say "I am standards-based because I use the standards to design assessments and instruction, and I use student work to judge whether or not the instruction was well designed for the mathematics with the specific learners in my classroom."

Questions to Ponder:

Leaders, Mentors, Mathematics Educators -- What are YOUR expectations for mathematics teaching and/or observing mathematics teaching? Do you model **and** expect standards-based teaching or standards-referenced teaching? Do you settle for textbooks that are NOT aligned to the standards, but are *easy* to teach and make teachers happy? Do you teach to the middle and pray for ricochet, rather than differentiating instruction so that ALL students are learning mathematics at a high level? I'd love to hear your comments! (E-mail Melisa Hancock at melisa@ksu.edu) Page 6

New Teaching Software Works Well in a Mathematics Classroom

Submitted by Bill Weber

For the last 3 semesters, I have been using a software program in my math courses called DyKnow (Dynamic Knowledge). The software is designed to be used with a tablet computer, but it can also be used with a laptop. It has the primary feature of having a "whiteboard" on the instructor's computer screen, and when information is written or typed by the instructor, it automatically is displayed on the student's computer screen. This allows the students to listen to the instructor more closely, as opposed to having the student worry about getting all the information copied down correctly. There is also a section for the student called "Private Notes", where the student can add more details to the information written on the "whiteboard".

Although the software is not designed specifically for math courses, I have found it to be very useful. For my courses, the major advantage is the instant feedback I can receive from students. For example, instead of sending students to the board to practice skills, I can now have them work the problem on their tablet computer, and then submit their panel to me for review. As I browse through the submitted panels, I can quickly gauge the students' level of understanding (right in the middle of class!), which directly impacts how much time I deem necessary to spend on a certain concept. Other features designed to help with instant feedback to the instructor include "polling" and "status". "Polling" gives the instructor the chance to ask true/false, yes/no, and multiple choice questions, and then the software gathers the responses and immediately reports results to the instructor. I like to use the multiple choice polling at the beginning of class to help review concepts from the previous day, or to get a sense of what the students already know about the concept we are currently discussing. "Status" is a quick feedback feature, where students select either the red, yellow, or green button on a stoplight and this provides the instructor with information on their level of understanding of the topic. I use this feature in the middle of class to make sure I am not progressing through topics too quickly, especially if a large percentage of students select the red button.

DyKnow also has some built-in features which allow students to review the notes from class. A lesson can be audio-recorded, so students have the ability to replay both the video from the whiteboard slides as well as the audio from the teacher. I see this feature being very beneficial to the students, as they can now see exactly what was written and said during class, and this may help them when they try to work similar exercises on homework. The audio and video can be saved to a server, allowing the students to access the files from any computer which has the DyKnow software installed on it.

I realize other avenues exist which accomplish the same features I have described above, but to have <u>all</u> these features in one program certainly is convenient for the instructor. I have received much positive feedback from my students, who say this program does help them in their math course. I don't have enough room to describe all the features of the program here, but hopefully this gives teachers a flavor for the types of interactive software which now exist.

Bill Weber is an Instructor in the Department of Mathematics and Computer Science at Fort Hays State University

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ZONE NEWS

ZONE 1: Kathy Desaire (kdesaire.usd269@ruraltel.net)

ZONE 2: Deb Nauerth (DEBN@manhattan.k12.ks.us)

Zone 2 has exciting news to share! The Young and the Rest of Us mentorship group that was originally started in Manhattan has expanded! We now have a group up and running in USD #475 - Junction City/Ft. Riley! These mentorship groups are proving to be a valuable resource for early career teachers, teachers who are in their first three years of teaching. Meetings have provided information on assessment strategies, differentiated instruction, p/t conference survival tips, and cooperative learning strategies, just to name a few. In January, the Manhattan group will be challenged with Project S.O.A.R. (Sharing Outstanding Action Research) where participants will implement a DI strategy with math content and share their results. Great things are happening in Zone 2! Come experience the excitement with us! If you are interested in participating in the Manhattan group contact Deb Nauerth (<u>debn@manhattan.k12.ks.us</u>). If you would like to participate in the JC/Ft. Riley group contact Jennifer Cooper (jennifercooper@usd475.org) or Jennifer Malcolm (jennifermalcolm@usd475.org). If you would like information on starting your own Young and the Rest of Us mentorship program in your area, please contact Melisa Hancock (melisa@ksu.edu).

ZONE 3: Pat Foster (pfoster@usd341.org)

The Northeast Association of Teachers of Mathematics will be gathering at the Curriculum Resources Library on the campus of Washburn University on January 13, 2009. The meeting will begin at 7:00 p.m. Materials that are available for teacher use will be shared and discussed. Please join us to take advantage of this valuable and free resource. Ideas and strategies that complement the resources will also be discussed.

Don't forget that the Zone 3 webpage can be accessed through the KATM

website. The page can be used as a networking tool and idea resource as you prepare your students for the state assessment. Using mathematics in conjunction with the Multi-Tier System of Support would be an especially valuable topic for many teachers. Postings regarding this would be appreciated. If you have questions or concerns, don't hesitate to email!

ZONE 4: Karla Childs (kchilds@pittstate.edu)

ZONE 5: Jennifer Weilert (jweilert@usd259.net)

We recently held our 3rd Annual Math at the Zoo event on October 4th.

Teachers from the area shared their expertise with others.

Sessions included topics such as fractions, using clickers in the classroom, and mental math strategies.

Math teachers ranging from Kindergarten to High School had the opportunity to attend two sessions and network with others.

Fabulous door prizes were won by many, as well as free entry to the zoo for the day!

We are looking forward to hosting our next event, which will be more of a social gathering in the spring! **ZONE 6: Tracy Newell (tnewell@gckschools.com)**

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NEWS FROM THE KANSAS STATE DEPARTMENT OF EDUCATION

Compiled by Dr. Sidney A. Cooley KSDE Math Consultant

There are several events and movements that are coming together that will have an impact on mathematics education in Kansas. One event is the review of the Kansas Curricular Standards for Mathematics. There is also an effort that is under way to integrate the core curricular standards with both the career-technical education program standards that focus on the 16 career clusters and the 21st century skills. Four articles/ documents/links are presented below which help explain the events/movements. The first, *Additions to the State Board of Education Highlights*, is an article by Kansas Commissioner of Education, Alexa Posny, in which she talks about the upcoming review of state curricular standards and the work to integrate the core curricular standards with the 16 career clusters and the 21st century skills. The second document *Profile of the 21st Century Learner*, presents one way of viewing what is expected of learners based on the 21st century learning skills. The third document, *Profile of the 21st Century Learning Environment*, , presents one way of viewing what the learning environment is expected to look like in order for the 21st century learning skills to be taught. Finally, links are provided to the 16 career clusters on KSDE's website.

Additions to the State Board of Education Highlights

November 17, 2008

TOPEKA—During the regular meeting of the State Board of Education last week, Commissioner Posny reported on the Kansas Reading and Mathematics Standards Review Committees. Both reading and mathematics standards are required to be reviewed within the next year to meet regulatory guidelines. Specifically, the regulation states that:

(b) The state board shall establish curriculum standards which reflect high academic standards for the core academic areas of mathematics, science, reading, writing and social studies. The curriculum standards shall be reviewed every seven years.

The process used to review the standards includes soliciting committee members, establishing meeting dates, selecting a chair and vice-chair, and establishing work groups. Additionally, guidance from the State Board regarding the standards is needed prior to their actual work.

The charge given the committees in light of the Board's goal and objectives was as follows:

- Integrate the core academic areas of reading and mathematics with career-technical education program standards that focus on the 16 career clusters;
- Use the profiles for the 21st century learner and the 21st century learning environment to provide both the strategic coherence and the structural integrity that is necessary to maintain a focus on the state education framework as articulated by the State Board goal.

Begin the process with the content areas of mathematics and reading with the career clusters of architecture and construction, finance, and human services and marketing.

Work in four phases:

Phase 1—Content Development and/or Review: Standards committees will be convened for the content and career cluster areas to focus on the instructional content of each set of standards, paying particular attention to national and international benchmarks, research on promising practice and the measurability of indicators.

Phase 2—Crosswalk and Refinement: The committees will conduct multiple crosswalks of their standards documents with the profiles of the 21st century learner, refining the standards as deemed necessary. A task force responsible for the coordination of academic and technical integration will begin the process of reconciling the various crosswalks and develop a draft of integrated standards.

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Phase 3—Standards Approval: The committees will use the recommendations and refinements received from the task force, review the assessment design, revise the articulation across all standards to create a final draft to present to the various business and industry bodies for endorsements, and to he State Board for approval and adoption.

Phase 4—Integration and New Product: The standards committee and other groups will begin using the integrated standards to revise existing resources and create new products required by state and federal regulation. Additionally, a new system of formative and interim assessment and other instructional resources will be developed.

As a result of the changes to the content standards, new state assessments will inevitably be required. The Board voted to maintain the current state assessments in reading and mathematics until the Elementary and Secondary Education Act (ESEA currently known as NCLB) has been reauthorized. Taking this action will allow districts and schools the ability to sustain their current instructional efforts and allow the state to maintain trend data over a longer period of time.

Profile of the 21st Century Learner

Creativity and Innovation

The learner...

- demonstrates originality and inventiveness in work;
- develops, implements, and communicates new ideas to others;
- is open and responsive to new and diverse perspectives; and
- acts on creative ideas to make a tangible and useful contribution to the domain in which the innovation occurs.

Critical Thinking and Problem Solving

The learner...

- exercises sound reasoning in understanding;
- makes complex choices and decisions;
- understands the interconnections among systems;
- identifies and asks significant questions that clarify various points of view and lead to better

solutions; and

• frames, analyzes, and synthesizes information in order to solve problems and answer questions.

Communication and Collaboration

The learner...

• understands, manages, and creates effective oral, written, and multimedia communication in a variety of forms and contexts and for a variety of purposes;

- demonstrates ability to work effectively with diverse teams;
- exercises flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal; and
- assumes shared responsibility for collaborative work.

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Information, Communication, Technology, and Media Literacy

The learner...

• accesses information efficiently and effectively, evaluates information critically and competently, and uses information accurately and creatively for the issue or problem at hand;

• understands how media messages are constructed, for what purposes and using which tools, characteristics, and conventions;

• examines how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors;

• uses digital technology, communication tools, and/or networks appropriately to access, manage, integrate, evaluate, and create information in order to function in a knowledge economy;

• uses technology as a tool to research, organize, evaluate, and communicate information; and

• possesses of a fundamental understanding of the ethical/legal issues surrounding the access and use of information.

Flexibility and Adaptability

The learner...

- · adapts to varied roles and responsibilities; and
- works effectively in a climate of ambiguity and changing priorities.

Initiative and Self-Direction

The learner...

- monitors his or her own understanding and learning needs;
- goes beyond basic mastery of skills and/or curriculum to explore and expand his or her own learning and opportunities to gain expertise;
- utilizes time efficiently and manages workload;
- defines, prioritizes, and completes tasks without direct oversight;
- demonstrates initiative to advance skill levels towards a professional level; and
- demonstrates commitment to learning as a lifelong process.

Social and Cross-Cultural Skills

The learner...

- works appropriately and productively with others;
- leverages the collective intelligence of groups when appropriate; and
- bridges cultural differences and uses differing perspectives to increase innovation and the quality of work.

Productivity and Accountability

The learner...

- sets and meets high standards and goals for delivering quality work on time; and
- demonstrates diligence and a positive work ethic (e.g., being punctual and reliable).

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Leadership and Responsibility

The learner...

- uses interpersonal and problem-solving skills to influence and guide others toward a goal;
- leverages strengths of others to accomplish a common goal;
- demonstrates integrity and ethical behavior; and
- acts responsibly with the interests of the larger community in mind.

Employability and Career Development

The learner...

- understands the importance of employability skills;
- effectively explores, plans, and manages career choices and goals; and

• recognizes and acts upon requirement for career advancement by planning continuing education, training, and/or professional development.

Profile of the 21st Century Learning Environment

Due to space limitations, the details of the 21st Century Learning Environment have been omitted. Please check out the links below for more information.

Relationships

Relevance

Rigor

Results

Responsive Culture

Links to Information on the 16 Career Clusters

Kansas Career Cluster Model

<http://www.ksde.org/LinkClick.aspx?fileticket=9nEL6T59CGc%3d&tabid=249&mid=5193>

Career Cluster Descriptions

http://www.ksde.org/Default.aspx?tabid=3178

Have a very Merry Christmas and Happy New Year!!! We look forward to working with you to improve mathematics education in the state of Kansas in 2009.



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Kansas Association of Teachers of Mathematics

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