KENTUCKY CENTER FOR
MATHEMATICS

2011 KCM Conference

Transforming Mathematics Education: Preparing Next Generation Learners for College and Career Pathways

February 24 –25, 2011

Lexington, KY

TEACHERS HELPING TEACHERS

LEARNING FOR LIFE

TEACHERS HELPING STUDENTS

KENTUCKY CENTER FOR MATHEMATICS

Welcome to the 2011 KCM Conference

The Kentucky Center for Mathematics' faculty and staff take great pleasure in welcoming you to the 2011 KCM Conference. It is our hope that the conference provides you the opportunity to share your expertise with others and to learn from your peers. The KCM remains committed to supporting mathematics instruction throughout the Commonwealth by offering a variety of professional development opportunities that truly focus on effective ways to support and develop educators. Facilitating teacher growth and learning is of paramount importance to us.

Enjoy the Conference!

The KCM Faculty and Staff

Laura Bristol
Kirsten Fleming
Alice Gabbard
Jennifer Hernandez-Lamb
Cindy LaFreniere
Frank McGoron
Teri J. Murphy
Bill Nostheide
Jill Parker
Kelsey Ripley
Katie Scharf
Julia Sullivan
Jennifer Taylor
Jonathan Thomas
Linda West

Information for Participants

Over the course of the next two days, there are ten 70 minute blocks of time reserved for presentations. These 70 minute blocks will be designated by a session number only.

The presentations during the conference are of two lengths: 70 minutes and 30 minutes. Longer sessions will provide a more in-depth look at a topic while the shorter sessions wll offer an overview of ideas.

The 70 minute blocks have been subdivided to accommodate two 30 minute presentations. These sessions are designated by the session number and either an A or B.

Some speakers may not use the full time allotted. We encourage you to take advantage of this time to share and network with other educators attending the conference.

To ensure everyone's comfort and safety, sessions will be closed when the seating capacity of the rooms have been reached. *For room capacities, see page 3.*

The KCM staff will be videotaping the featured presentations. After the conference, you will be provided online access to these taped presentations.

The KCM staff will also be taking photographs throughout the conference. These pictures may be posted on the KCM website or KCM Facebook page.

Conference participants may take their own videos of presentations unless a sign is otherwise posted.

The Poster Display is setup in Colonial Rooms D, E, and F. These posters showcase many exciting things happening in mathematics education throughout the Commonwealth.

A continental breakfast will be served each morning from 7:00 to 8:00 a.m. A snack will be served each afternoon at 2:40.

Breakfast and snacks will be served in Colonial Rooms D, E, and F, as well as Lafayette Square.

Lunch each day will be on your own.

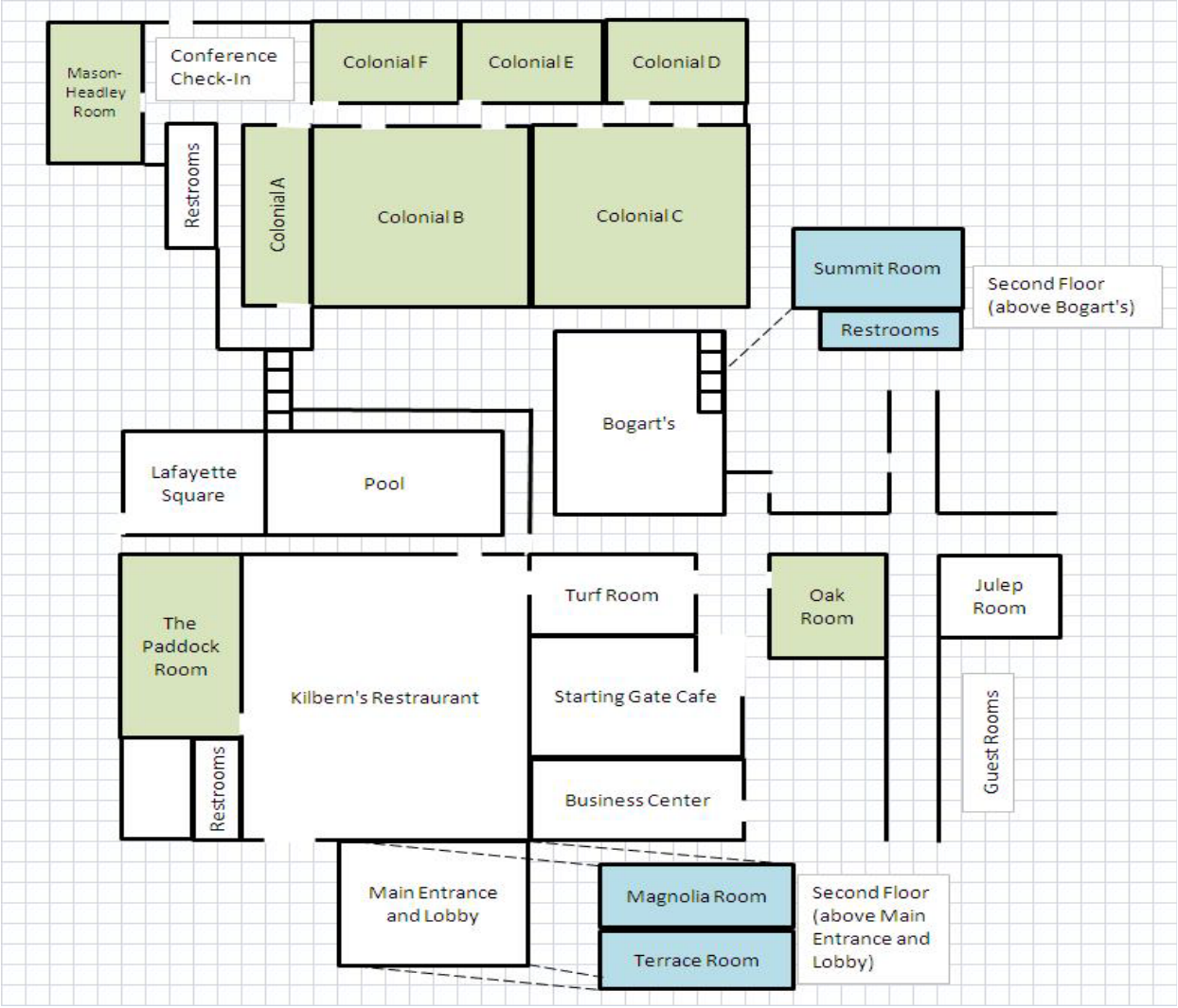
Vendors and exhibitors are set up in Colonial Rooms D, E, and F.

Remember that the conference provides an opportunity to learn and grow as professionals. Please be courteous to speakers and other participants attending the sessions.

If you have any questions or concerns, the KCM staff (who can be identified by their black conference ribbons) will be happy to help you.

After the conference, be sure to visit the KCM webpage at www.kymath.org where you will find many tools and resources for teachers, parents, and students.

Conference Map & Room Capacities



ROOM	CAPACITY
Colonial A	60
Colonial B	120
Colonial C	100
Mason-Headley Room	80
Paddock Room	80
Magnolia Room	48
Terrace Room	40
Summit Room	50
Oak Room	40

Colonial Rooms D, E, and F will be open to create one large area. Vendors, posters, breakfast, and snacks will be available here.

Conference Schedule

Wednesday, February 23	
6:30 p.m. – 7:30 p.m.	Early Conference Check-In

Thursday, February 24th	
7:00 a.m. – 8:00 a.m.	Conference Check-In
8:00 a.m. – 9:10 a.m.	Session 1
9:20 a.m. – 10:30 a.m.	Session 2
10:50 a.m. – 12:00 p.m.	Session 3
12:00 p.m. – 1:30 p.m.	*Lunch – on your own*
1:30 p.m. – 2:40 p.m.	Session 4
2:40 p.m. – 3:15 p.m.	Snack in Colonial D, E, & F
3:15 p.m. – 4:00 p.m.	President Votruba, NKU; Dr. Holliday, KDE; Dr. Thompson, CPE Colonial A, B, and C

Friday, February 25th	
7:00 a.m. – 8:00 a.m.	Conference Check-In
8:00 a.m. – 9:10 a.m.	Session 6
9:20 a.m. – 10:30 a.m.	Session 7
10:50 a.m. – 12:00 p.m.	Session 8
12:00 p.m. – 1:30 p.m.	*Lunch – on your own*
1:30 p.m. – 2:40 p.m.	Session 9
2:40 p.m. – 2:50 p.m.	Snack in Colonial D, E, & F
2:50 p.m. – 4:00 p.m.	Session 10

Featured Speakers

Arthur Baroody
- Biographical Information - page 6
- Session Description - pages 16 and 20

David Bressoud
- Biographical Information - page 7
- Session Description - page 12

Maurice Burke
- Biographical Information - page 7
- Session Description - page 24

Antonia Cameron
- Biographical Information - page 8
- Session Description - page 32

Peter Gould
- Biographical Information - page 9
- Session Description - page 40

Margaret Mohr-Schroeder
- Biographical Information - page 9
- Session Description - page 28

Sally Moomaw
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- Session Description - page 44

Ann Shannon
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- Session Description - page 36

David Webb
- Biographical Information - page 11
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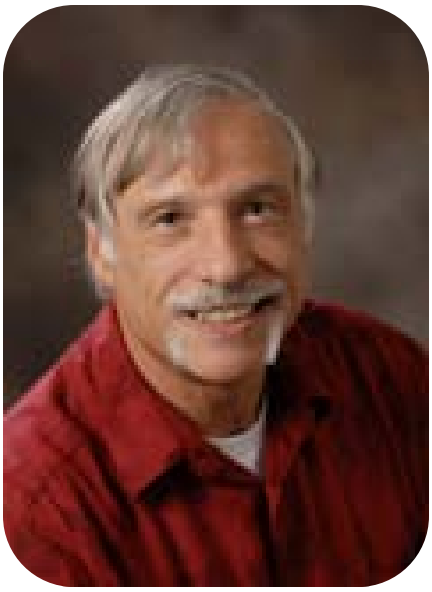
Featured Speakers

ARTHUR BARODY…



received his Ph.D. in educational and developmental psychology from Cornell University in 1979. He is currently a Professor Emeritus of Curriculum & Instruction at the University of Illinois at Urbana-Champaign. He specializes in early childhood and elementary mathematics education. His research focuses on the teaching and learning of basic counting, number, and arithmetic concepts and skills by young children and children with learning difficulties. He is currently the Principal Investigator for a grant from the U.S. Department of Education ("Fostering Fluency with Basic Addition and Subtraction"; 7/1/2008–6/30/2012). He is also the Co-Principal Investigator for a grant from the National Institutes of Health ("Computer-guided Comprehensive Mathematics Assessment for Young Children"; 10/1/2005–9/30/2010) and an IES Post-doctoral grant from the U.S. Department of Education.

Dr. Baroody is the author of a number of books on teaching children mathematics, including *Fostering Children's Mathematical Power: An Investigative Approach to K—8 Mathematics Instruction* (published 1998 by Lawrence Erlbaum Associates), and is the co-author of the *Test of Early Mathematics Ability* (3rd edition; published 2003 by Pro-Ed). He co-edited a book with Ann Dowker (Cambridge University) on mathematical learning (*The development of arithmetic concepts and skills: Constructing adaptive expertise*), which is part of the "Studies in Mathematics Thinking and Learning" series, edited by A. Schoenfeld and published by Erlbaum Associates in 2003.

Sessions 2 and 3 (combined) - Preparing for Algebra: A Purposeful, Meaningful, and Inquiry-Based Approach to Teaching Ratios and Proportions

DAVID BRESSOUD…

is DeWitt Wallace Professor of Mathematics at Macalester College and President of the Mathematical Association of America. He served in the Peace Corps, taught at Penn State for 17 years, and chaired the Department of Mathematics and Computer Science at Macalester from 1995 until 2001. He has received the MAA Distinguished Teaching Award (Allegheny Mountain Section), the MAA Beckenbach Book Award for Proofs and Confirmations, and has been a Pólya Lecturer for the MAA.

He has published over fifty research articles in number theory, combinatorics, and special functions. His other books include *Factorization and Primality Testing, Second Year Calculus from Celestial Mechanics to Special Relativity, A Radical Approach to Real Analysis* (now in 2nd edition), *A Radical Approach to Lebesgue's Theory of Integration*, and, with Stan Wagon, *A Course in Computational Number Theory.*

Session 1 - Issues of Transition to College Mathematics

MAURICE BURKE…

is a professor of mathematics education at Montana State University in Bozeman. He joined the faculty at MSU in 1988. He received his doctorate from the University of Wisconsin – Madison in mathematics and mathematics education. Between 1992 and 1996, he co-directed the SIMMS Project with Professor Johnny Lott of The University of Montana. He has been the director of MSU's online Master of Science in Mathematics – Mathematics Education Option (1998-2005) and recently served as the editor of the *Grades 9-12 Navigations Series* for the NCTM (2001-2008).

Dr. Burke has been and continues to be a proponent of the use of technology in the classroom ever since he first started using Apple computers to teach mathematics at West Bend High School in 1980. He frequently publishes technology-related articles in the *Mathematics Teacher*.

Session 4 - The Common Core State Standards for Mathematics: The Role of Technology and the Challenge of Inquiry

ANTONIA CAMERON…

served as Co-Director with Cathy Fosnot of Mathematics in the City (MitC), a national center for professional development at City College of the City University of New York. As co-principal investigator of an NSF-funded project, she co-authored fifteen facilitator guides for the Math in the City professional development series including CD-ROMs demonstrating the extraordinary teaching and learning she and her colleagues cultivated in the teachers they coached. In addition, she co-authored two units (*Games* and *Muffles' Truffles*) in the curriculum, and *Contexts for Learning* published by Heinemann.

Ms. Cameron's groundbreaking, rigorous and highly effective professional development model for coaches in NYC evolved from her work as Director of the math component of the New York City Department of Education's *Collaborative Communities of Practice* project (2004-2006) and her creation of a collaborative coaching community (2003-2006) with Carol Teig, the Director of Mathematics in the former Region 8, Brooklyn, New York. In both projects, Ms. Cameron developed lab-site schools where hosting teachers and coaches shared their practice by opening their classrooms to participating coaches, teachers and administrators from other schools. This model of professional development is based on a lesson-study scenario where the process of planning, co-teaching and debriefing a lesson is used to examine and deepen both content and pedagogical content knowledge. Antonia's highly effective twist to the lesson study work focuses on "coaching the coach" and conversations center on highlighting effective coaching moves that support teacher development.

Ms. Cameron is in demand as "coach of coaches" by educational coaches in districts across the USA and Canada. She has presented nationally and internationally at such conferences as National Council of Supervisors of Mathematics, National Council of Teachers of Mathematics, Association of Mathematics Teacher Educators, National Staff Development Council and the International Congress on Mathematical Education.

Session 7 - Walking the Talk: Creating Robust Student Discourse in K-3 Classrooms

PETER GOULD…

is the Chief Education Officer in Mathematics with the New South Wales Department of Education and Training. His primary responsibilities are in the design and delivery of effective mathematics curriculum support from Kindergarten to Year 12. He has a strong interest in research-based knowledge being used to improve, and be improved by, teaching practice.

He taught mathematics classes for 13 years in disadvantaged secondary schools as well as Technical and Further Education and University courses. Peter has worked as a Kindergarten to Year 12 Regional Mathematics consultant and acknowledges that his students and colleagues have taught him many useful things over the years. He has written a range of curriculum documents including *Problem of the Week*, *Co-operative Problem Solving in Mathematics Years 5–8* and *Fractions: pikelets and lamingtons*. Peter has been the chair of several syllabus committees in New South Wales, helped in supporting the writing of the primary mathematics curriculum in Papua New Guinea and the *Count Us In* children's television series for the ABC (Australian Broadcasting Corporation). His current research is into how children develop a sense of fractions, as well as what can be learnt from Lesson Study in mathematics.

Session 9 - Developing Understanding: Students Linking Area and Number to Reason about Place Value

MARGARET MOHR-SCHROEDER…

joined the University of Kentucky faculty in 2006 as an assistant professor of mathematics education where she is the chair of the secondary mathematics education program. She holds a BSEd. and MS in Mathematics from Pittsburg State University, and a Ph.D. in Curriculum and Instruction – Mathematics Education from Texas A&M University. As a native of Kansas, she began her career as a junior high, high school, community college, and college mathematics instructor. Since her arrival to UK, Dr. Mohr-Schroeder has been involved in over $13 million in NSF funding, expanding STEM Education through various

initiatives including the Science and Mathematics Teacher Imperative (SMTI), and has been instrumental in garnering internal and external funding to support transdisciplinary teacher preparation. When she is not boating, camping, or using her mathematical abilities to remodel her home, she enjoys researching pre-service teacher Mathematics Education, Mathematics Knowledge for Teaching, and Assessment.

Session 6 - Increasing the Probability of Hitting a Moving Target: Transdisciplinary Teacher Preparation for Tomorrow's Careers

SALLY MOOMAW…

is an Assistant Professor of Early Childhood Education at the University of Cincinnati. Much of her research and teaching is in the area of STEM education (science, technology, engineering, and mathematics). She received her doctoral degree in special education from the University of Cincinnati in 2008 following a long career as a preschool teacher and as the Associate Director for Professional Development at the college's Arlitt Center. She is the author of fourteen books on early childhood curriculum, including *More Than Counting*. She designed a Mathematics Tool Kit for the Ohio Department of Education to help teachers implement state content standards, and has presented numerous workshops for colleges, school districts, and conferences throughout the country. Her previous degrees include a Bachelor of Music Degree and a Master's Degree in Child Development, both from the University of Cincinnati.

Session 10 - Addition in Preschool: It's Everywhere in the Classroom – or Can Be!

ANN SHANNON…

is currently the Principal of Ann Shannon & Associates, LLC. In December 2009, Ann Shannon was awarded a contract from the Bill and Melinda Gates Foundation to design and deliver professional development for teachers as part of the Foundation's College Ready Strategy.

The expertise Ann brings to the advisory board includes a professional history of designing materials for use in K–12 schools. She has designed mathematics lessons, mathematics assessments, and professional development for K–12 teachers. Most recently, Ann contributed mathematics tasks that are intended to illustrate the new *Common Core State Standards*. Ann holds a B.A. in Mathematics and a Ph.D. in Mathematics Education from Keele University, Staffordshire, England.

Session 8 - Designing Assessment for Learning: Professional Development that is Especially for High School Mathematics

DAVID WEBB…

is an assistant professor of mathematics education and is also the Executive Director of Freudenthal Institute USA, an international research collaborative for mathematics education. Dr. Webb's research interests are in the areas of the preparation of mathematics teachers, classroom assessment, and the design of professional development activities. Recent research projects have focused on studies of teacher change in classroom assessment, the impact of reform curricula on student learning and achievement, and teacher design and use of formative assessment tools.

Session 6 - Using Representational Pathways to Increase Student Access to and Understanding of Mathematics

Thursday, February 24th
Session 1: 8:00 – 9:10
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial C	**Issues of Transition to College Mathematics** Over the past quarter century, 2- and 4-year college enrollment in first semester calculus has remained constant while high school enrollment in calculus has grown tenfold, from 60,000 to 600,000, and continues to grow at 6% per year. We have passed the cross-over point where each year more students study first semester calculus in US high schools than in all 2- and 4-year colleges and universities in the United States. In theory, this should be an engine for directing more students toward careers in science, engineering, and mathematics. In fact, it is having the opposite effect. This talk will present what is known about the effects of this growth and what needs to happen in response within our high schools and universities. **Grade Level: 10-16**	***Featured Speaker*** **Dr. David Bressoud**
Mason-Headley	**Keep It Balanced II** Is understanding balance important in mathematics? Does the equal sign always require an action? Join us as we explore a conceptual understanding of equality. Participants will experience problem solving strategies through a variety of activities and physical models. **Grade Level: 3-5**	**Tolene Pitts,** **Vonda Stamm**
Colonial B	**What is Standards-Based Grading? How is it Beneficial to Student Learning?** Standards-Based Grading is a new adventure in the teaching field. Many teachers are intimidated by these words because there isn't enough information in Kentucky yet. Simons Middle School has 8 teachers using standards-based grading. This session will consist of: What is standards-based grading? How does it work? What does a classroom look like that uses standards-based grading? How do students react to standards-based grading? How are assessments used when implementing standards-based grading? **Grade Level: 6-8**	**Natalie Leet,** **Lesia Eldridge**

Session 1: 8:00 – 9:10
70 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Terrace	**Upgrading Grading in the Age of Standards** The advent of standards brought about a new way of thinking about course content. The logical extension was to think about assessment and grading in new ways too, but decades into the standards era, many schools still utilize outdated grading practices. The good news is that the literature from national grading experts presents nearly complete agreement on appropriate and ethical K-12 grading practices, and all those practices are rooted in the standards system. Come examine some outmoded grading procedures that persist, and discover the common-sense corrections recommended by experts like Guskey, O'Connor, Stiggins, and Wormeli. Participate in an exciting discussion of modernizing various grading practices, from formative assessment to group projects. Now that we're on the verge of common standards, determine how you can bring grading in your classroom, school, and district into ethical alignment with common best practices. **Grade Level: 3-5, 6-8, 9-12**	**Anne Flick**

Session 1A: 8:00 – 8:30
Session 1B: 8:40 – 9:10
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial A	**Get FIRED Up About Standards Mastery! (Formative, Interventions, Relationships, Enrichments, and Differentiation)** During this session we begin to develop a "Mindset of Mastery" as it relates to standards-based learning. The three main topics this framework revolves around are Formative Assessments, Student Engagement, and Differentiation. The session will be very specific, giving participants tools that can be immediately implemented in classrooms. We also explore lesson development as it relates to the overall goal of student mastery, including interventions and extensions. Attendees will begin to understand the power of a learning target and what it means in driving the learning in the classroom. Attendees will also leave with a full toolkit of strategies for transitioning to a standards-based classroom. **Grade Level: 6-8, 9-12** **Presented during 1B only**	**Buddy Berry**
Paddock	**Making Math the "Center" of your Classroom!** We will explore games and activities that you can take back to your classroom and use as centers! We will focus on strategies using hundreds charts, bridging to 10, and many others. Walk away with activities that your students will be ready to use and love. **Grade Level: K-2, 3-5** **Presented during 1A only**	**JoLin Owens, Selisa Adams**
Paddock	**Small Group Instruction in the Regular Classroom** Participants will view a video of small group instruction taking place in the regular classroom. The video is from My Kids Can, Making Math Accessible to All Learners, K-5 by Judy Storeygard. A follow up discussion will take place on the questioning strategies and instructional settings used by the teacher during instruction. **Grade Level: K-2, 3-5** **Presented during 1B only**	**Gwen Morgan**
Magnolia	**A Paradigm Shift** This session is a reflection of a first year Mathematics Intervention Teacher's thinking as it changes from traditional teaching methods to newly learned Math Recovery approaches. Handouts and demonstrations will be utilized. We will cover the challenges in overcoming traditional teaching methods, how to assess students in small groups, and how to track individual progress of students in groups. Also included will be ideas on how to communicate to parents and classroom teachers. **Grade Level: K-2** **Presented during 1A only**	**Lyndee Russelburg**
Magnolia	**A Million Ways to Use Go Fish and Tic Tac Toe** Most children know how to play Go Fish and Tic Tac Toe very early in life. There are many uses for these games. This session will share some adaptations for ways to relate these well-known games to number sense. Time will be given to share and learn new ways to play some old favorites. **Grade Level: K-2** **Presented during 1B only**	**Robin Swords, Dee Hilton**

Session 1A: 8:00 – 8:30
Session 1B: 8:40 – 9:10
30 Minute Sessions - Continued

Summit	**Using Flatland: The Movie to Deepen Geometry Understanding** Flatland, by Abbott, is a book that explores dimensionality through the adventures of A. Square. Flatland: The Movie is an animated adaptation of the book. The descriptions of 1, 2, and 3 dimensions help students understand the nature of points, planes and solids. Since the book is in story form, students are exposed to a different approach to basic ideas of geometry. This presentation will outline materials available through the book and movie. We will also discuss how to incorporate these materials into the regular flow of a geometry course. Sample materials will be available. These materials link the book/movie topics to content the students will learn in geometry. **Grade Level: 9-12** **Presented during 1A only**	**Kelly Lindsey**

Thursday, February 24th
Session 2: 9:20 – 10:30
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Magnolia	**Preparing for Algebra: A Purposeful, Meaningful, and Inquiry-Based Approach to Teaching Ratios and Proportions** Ratios, proportions, and algebra are major pitfalls for many students. Understanding ratios and proportions requires a major advance in mathematical thinking—thinking multiplicatively instead of additively. Algebra seems like a foreign language or even stranger to many students. As one student woefully announced, "Algebra is wack [doesn't make sense] because math is about numbers, not letters." Ratios and proportions taught in an inviting, comprehensible, and thought-provoking manner can help students bridge the divide between additive and multiplicative reasoning and prepare a key foundation for algebra. The workshop will focus on how ratios and proportions can be taught using a problem-solving approach, underscore key misconceptions about the topic, and relate real-world proportional situations to formulas and graphs. It will include hands-on, student-centered activities. **Grade Level: 7-9 This session will continue during Session 3**	***Featured Speaker*** **Arthur Baroody**
Colonial B	**Blasting Off with Base-10** A variety of hands-on materials and resources for teaching base-10 to children from grades K-3 will be shared. Some of the lessons have even been used to teach 4th and 5th grade students who needed intervention. Participants will leave with strategies and a smorgasbord of materials, and lessons that can be easily differentiated within the regular classroom. Hands-on activities will vary from the basic how-to teach and organize the base-ten manipulatives, teaching basic number sense, teaching odd and even numbers, being creative with base-10 while learning about word form, standard form and expanded form, base-10 games, teaching the operations (+,-,x and ÷) with the base-10 manipulatives, sing them with solving word problems, how do I move them from the concrete to the abstract, to websites that incorporate base-10 lessons with interactive games. **Grade Level: K-2, 3-5**	**Teresa King**
Colonial C	**Games You Know to Help Them Grow** Candy Land and Tic-Tac-Toe are two classic games that are deceptively simple, yet very powerful when you apply a few easy modifications. Learn how to get the most out of these games to help Pre-K students master numeral identification to ten, subitizing to six, and shape recognition. You will leave with the motivation for modifying other well-known games you may already play with your students and a basic understanding of numeracy progressions. **Grade Level: Pre-K**	**Elizabeth Wright, Mary Greene Kelly Livers Cindy Gross, Becky Reister**

Session 2 – 9:20 – 10:30
70 Minute Sessions - Continued

Paddock	**Keep It Balanced** In life and in math, it is important to KEEP IT BALANCED! This session will emphasize the importance of equality (or if you prefer, equivalence) on the idea of Algebraic Reasoning. Come and achieve balance in the high school math curriculum. **Grade Level: 9-12**	**Ann Booth, Tami Pickett**

Session 2A: 9:20 – 9:50
Session 2B: 10:00 – 10:30
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial A	**Fraction Showdown** The development of a deep understanding of fraction concepts is a cornerstone of the elementary mathematics curriculum, but one that is often complicated and difficult to accomplish. Join us as we explore ways to enhance and encourage student mastery of fraction concepts through 'Showdown,' a research-based strategy. **Grade Level: 3-5** **Presented during 2B only**	**Marsha Maupin, Tolene Pitts**
Mason-Headley	**Using Singapore Math Strategies in the Intervention Classroom** Learn new motivating ways of partitioning and combining numbers. Watch your students, in their everyday life, visualize math skills through discussion and stories. These are stepping stones toward mental math, another component of Singapore Math. **Grade Level: K-2** **Presented during 2A only**	**Charlotte Baker, Kris Jarboe**
Mason-Headley	**Games and Activities for Structuring Numbers to 10** Structuring numbers, a child's ability to combine and partition numbers without counting by ones, provides a crucial basis for development of mental math and place value. By internalizing quantity, students learn to use mental math and become problem solvers. The games and activities presented here will support students as they structure numbers to 5 and 10. **Grade Level: K-2** **Presented during 2B only**	**Julie Tatman**
Terrace	**Options for the 4th Year High School Math Course** Beginning with the graduating class of 2012, students will be required to have a math course every year that they are in high school. This session will provide suggestions for the types of courses that can be offered in the 4th year of high school. This will include information about the transitional mathematics course for students not meeting college readiness benchmarks on the ACT. **Grade Level: 9-12, 13-16** **Presented during 2A only**	**Amy Patterson, Chyleigh Rose**

Session 2A: 9:20 – 9:50
Session 2B: 10:00 – 10:30
30 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Summit	**Aleks Solves Math Dilemmas!** Aleks math fills in the gaps and designs the learning path for each individual student. Glasgow Middle School has had remarkable results using Aleks as a learning and intervention tool. Our results are seen nationally on Explore and NCLB and statewide on KCCT. Through using Aleks our teachers have been able to adapt their teaching in the classroom to enhance student learning. And the kids LOVE it! **Grade Level: 6-8, 9-12** **Presented during 2A only**	**Brooke Bartrug, Forrest Smith**
Summit	**Teaching Conceptual Math Through Perception** This session is a focus on teaching philosophy to help target the lack of understanding, retention, and application of math concepts. By building a solid foundation in the mastery of algebra concepts, students will be better prepared for post-secondary education and beyond. Teaching math concepts through perception helps develop highly effective teachers and increases student understanding. Building perceptions can increase student performance on assessment, better prepare students for post-secondary education and careers, and eliminate the ambiguity that prevents students from understanding and applying math concepts. **Grade Level: 6-8, 9-12** **Presented during 2B only**	**Jackie Robinson, Don White**

NOTES:

Thursday, February 24th
Session 3: 10:50 – 12:00
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Magnolia	**Preparing for Algebra: A Purposeful, Meaningful, and Inquiry-Based Approach to Teaching Ratios and Proportions** Ratios, proportions, and algebra are major pitfalls for many students. Understanding ratios and proportions requires a major advance in mathematical thinking—thinking multiplicatively instead of additively. Algebra seems like a foreign language or even stranger to many students. As one student woefully announced, "Algebra is wack [doesn't make sense] because math is about numbers, not letters." Ratios and proportions taught in an inviting, comprehensible, and thought-provoking manner can help students bridge the divide between additive and multiplicative reasoning and prepare a key foundation for algebra. The workshop will focus on how ratios and proportions can be taught using a problem-solving approach, underscore key misconceptions about the topic, and relate real-world proportional situations to formulas and graphs. It will include hands-on, student-centered activities. **Grade Level: 7-9** **Continued from Session 2**	***Featured Speaker*** **Arthur Baroody**
Colonial B	**Project Lead the Way** A review of Project Lead The Way (PLTW) Foundation Courses and how they incorporate hands-on, project-based mathematics concepts to excite students about learning math, opening the door of option and opportunity to those students who may have overlooked a STEM choice, and making learning technical mathematics (and science) concepts engaging and fun. Further, we will discuss how PLTW prepares students for postsecondary options by developing the critical thinking, logical analysis, and design process methodology necessary for any postsecondary choice. **Grade Level: 6-8, 9-12**	**Dianne Leveridge**
Colonial C	**K-8 Common Core State Standards for Mathematics** Kentucky was the first state to adopt the new Common Core State Standards for Mathematics and now there are at least 44 states to adopt. In Senate Bill 1 the standards are referred to as Kentucky's Core Academic Standards but in Kentucky, KCAS=CCSS in mathematics, and after spring 2011 there is no longer CCA (Core Content for Assessment) nor POS (Program of Studies) as math standards in Kentucky. This session will provide an overview of the format, organization and big ideas of the new mathematics standards for grades K-8. We will investigate differences in the new standards and our previous standards, and explore instructional implications inherent in both the new practice and content standards for mathematics in primary, intermediate and middle school classrooms. **Grade Level: K-2, 3-5, 6-8**	**Debbie Waggoner**

Session 3: 10:50 – 12:00
70 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Mason-Headley	**Math Speaks: Communicating Mathematics** When students communicate their mathematical thinking, several tremendous things happen. First, student understanding of mathematical concepts and processes becomes more permanent for the student as they process their thinking through various forms of communication. In addition, students benefit from the open discussion of math and learn from one another. Of equal importance, the teacher is better able to formatively assess student understanding through the discussion and display of mathematical reasoning. Students participate in mathematical communication through verbal, concrete/pictorial and written forms. Each of these forms of communication is important for attaining a deeper understanding of math. **Grade Level: K-2, 3-5**	**James Hamm, Charles Rutledge**
Terrace	**Engaging Students Using the Mathematical Practices** Why is it important that the standards for mathematical practice be the lens through which we look at the content? Connecting the mathematical practices to mathematical content in mathematics instruction provides teachers with the opportunity to actively engage students. This session will explore the Mathematical Practice standards in the Kentucky Core Academic Standards. Engaging activities and problems that foster these mathematical practices will also be introduced to help teachers become more intentional in choosing these types of learning experiences for students. **Grade Level: K-2, 3-5, 6-8, 9-12, 13-16**	**Teresa Emmert**

Session 3A: 10:50 – 11:20
Session 3B: 11:30 – 12:00
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial A	**Helping Students on the Pathway to Success in Engineering Calculus** We will describe, demonstrate and share materials for a program in academic support developed at the University of Louisville to address the need to increase student skills and confidence in working with Algebra and to help students transition from high school mathematics to the rigor of college calculus. The Calculus Preview Program is a five week, summer, intensive review program for mathematics, primarily for Intermediate and College Algebra. These review sessions, which can be completed onsite or online, offer fast-paced instruction in a self-paced format. Online computer software and sessions through Blackboard and the Virtual Math Center provide practice and supplemental instruction for each week of the program. Students must complete weekly assignments and tests. Successful program completion leads to better preparation for the material presented in the beginning of their first college calculus course. Students' program completion rates and grades earned in entry-level mathematics courses will be shared as evidence of program assessment and success. **Grade Level: 9-12, 13-16** **Presented during 3A only**	**Carrye Wilkins, Brenda Hart**
Summit	**Structuring with the Bead Rack** Are you looking for a way to support the natural progression of students' mathematical development while building their mental computation skills? Are you looking for a formative assessment tool to help drive your instruction? Then "Structuring with the Bead Rack" is the presentation for you. We will explore ways to use the bead rack to build automaticity through structuring. And, we will discuss ways to use the bead rack as a formative assessment tool. **Grade Level: K-2** **Presented during 3A only**	**Traci Brown, Nicque Hall, Mary Helen Hodges**
Summit	**Hundreds Board Activities for K-2** This session is designed to help teachers understand why it is important to use hundreds board activities to enhance numeracy development. By using the activities utilizing the hundreds board shown and described in this session, students will gain skills in numeral identification, patterns, place value, skip counting, addition and subtraction, and early multiplication. Students will enjoy the activities that can be used independently or teacher directed. **Grade Level: K-2** **Presented during 3B only**	**Susie Osborne, Lisa Adams**

NOTES:

Thursday, February 24th
Session 4: 1:30 – 2:40
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Mason-Headley	**The Common Core State Standards for Mathematics: The Role of Technology and the Challenge of Inquiry** The Common Core State Standards for Mathematics, adopted by the State of Kentucky and many other states, open the curriculum to uses of technology that greatly broaden current practice. The role given to technology, however, also challenges us to embed inquiry as a matter of common practice in the classroom. Examples from each of the five high school content domains will be shared along with a summary of what is implied for grades K-8. The presentation concludes with a summary of implications for teacher preparation and professional development. **Grade Level: 9-12**	***Featured Speaker*** **Maurice Burke**
Colonial A	**How to Solve Problem Solving for Our Students** Included in the skill set from the Partnership for 21st Century Skills is "solving complex, multidisciplinary, open-ended problems." The 21st Century learner requires a new set of skills…and a refocus on skills that already may be in place. This interactive session will allow attendees the opportunity to explore the what's, why's and how's of problem solving. Participants will leave this session with practical strategies they can put to use immediately, thereby improving students' problem-solving techniques. Time during this session will be spent examining Science, Technology, Engineering, and Mathematics and how bringing STEM education into our classrooms provides students with a broader spectrum of learning opportunities. Be prepared to delve into strategies and ideas that will prepare our current generation of learners for their futures, in school and beyond. Join us as you begin (or perhaps continue) to change your work as educators to transform the learning experiences for the next generation. **Grade Level: 6-8**	**Kim Loucks, Carolyn Hirst-Loucks**
Colonial C	**Bringing Small Group Instruction into Focus Through Math Recovery** Small groups have their own specific needs, separate from one-on-one and whole class. How can our knowledge of Math Recovery, Add+VantageMR and whole class instruction be leveraged to design small group instruction that is both effective and efficient? Two different small group models are currently being trialed in one school. Come see and compare the small group instructional tools and the models being used. **Grade Level: K-2**	**Petey MacCarty, Kurt Kinsey**

Session 4: 1:30 – 2:40
70 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Magnolia	**So What Do We Do with the Standards Now?** Now that we have new mathematics standards how do we use them to improve our teaching and student learning? This session will show teachers the process of deconstructing a standard into student-friendly learning targets. Then we will look at a variety of ways to use those targets to formatively assess student learning and look at some student work matched to learning targets to see what we can learn from them. **Grade Level: K-2, 3-5**	**Katrina Slone**
Oak	**Meeting the Goals of Senate Bill 1 through Collaboration Between Kentucky High Schools and KSU Access to Algebra** This session will describe the Access to Algebra (A2A) Program at Kentucky State University - inspiration, genesis and application, as well as discuss the results that we have seen in the mathematical performance level of high school students participating in the A2A program. We will also talk about the outcomes of collaboration between high school teachers and Kentucky State University faculty. Finally, we will discuss the ways in which the A2A program at KSU is meeting the goals of Senate Bill 1. **Grade Level: 9-12, 13-16**	**Karen Heavin, Marci Smith**

Session 4A: 1:30 – 2:00
Session 4B: 2:10 – 2:40
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Paddock	**The Aspects of Number: Why Quantity?** It is easy to understand why students need to be able to identify numerals. But why is it important for our students to understand quantity? Come see how we have used the one-inch square tiles to facilitate student understanding of numbers in their different aspects and to encourage student motivation in this process. **Grade Level: K-2** **Presented during 4A only**	**Melissa Dicken, Amanda Pasley**
Paddock	**Helping Struggling Students Advance their Mathematical Strategies in the Classroom through Highly Effective Teaching Strategies** This session will focus on activities and strategies to help struggling students become successful in mathematics, as well as how to keep track of their progress. **Grade Level: K-2** **Presented during 4B only**	**Tonda Thompson, Jean Bingham, Amy Simpson**
Terrace	**5-D Process for Problem Solving** Math is used to solve challenging problems that apply to daily life. When trying to solve a new and challenging problem, it is useful to have a strategy. The strategy we will be presenting is from CPM (College Preparatory Mathematics), and we have found it to be very effective with our Pre-Algebra Students. The 5-D Process is an organized model to solve problems. The D's stand for Describe, Define, Do, Decide, and Declare. We will be demonstrating this model with real problems and examples of student work. **Grade Level: 6-8** **Presented during 4A only**	**Cynthia Bell, Cathy Gibbs**
Terrace	**Being on the Same Page with School-wide Math Support** Our school has several school-wide math support systems. In order for these systems to work for children, all teachers need to be on the same page. James and Susan will share the systems in place at their school and how all teachers are involved in supporting math. These systems range from daily intervention classes to daily math facts to IEP/504 accommodations. **Grade Level: 6-8** **Presented during 4B only**	**James Botts, Susan Gordon**
Summit	**Fraction Development in the Common Core Standards** The purpose of this presentation is to provide participants with an easy-to-understand diagram that maps the development of fractions in the Common Core Standards using 5 mathematical representations: pictorial, symbolic, language, concrete, and context. From there, we will discuss connections to formative assessment to ensure fraction building blocks are well-developed leading to student success. **Grade Level: 6-8** **Presented during 4A only**	**Amy Hunter**

From 2:40 – 3:15 while the room setup is changed for Session 5, please enjoy the afternoon refreshments and visit the vendors in Colonial Rooms D, E, and F.

Thursday, February 24th Session 5: 3:15 – 4:00 in Colonial Rooms A, B, and C

Dr. Votruba, President,
Northern Kentucky University

Dr. Holliday, Commissioner,
Kentucky Department of Education

Dr. Thompson, Vice-President,
Council on Postsecondary Education

Friday, February 25th
Session 6: 8:00 – 9:10
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial B	**Using Representational Pathways to Increase Student Access to an Understanding of Mathematics** Math educators at Freudenthal Institute USA have used the Iceberg Model to support teacher thinking about learning processes and the development of student strategies. This approach has since been used with elementary, middle, and high school teachers in Colorado, Wyoming and elsewhere to support instructional decisions and formative assessment. At the heart of this approach are representational pathways that integrate students' prior knowledge and mathematical models to make connections and support student understanding of mathematics. This interactive keynote will provide an overview of this approach and offer suggestions to support instruction, assessment, and selection of appropriate interventions for struggling students. **Grade Level: 3-5**	***Featured Speaker*** **David Webb**
Paddock	**Increasing the Probability of Hitting a Moving Target: Transdisciplinary Teacher Preparation for Tomorrow's Careers** Effective competition in a rapidly growing global economy places demands on society to produce individuals capable of higher-order critical thinking, creative problem solving, connection making, interdisciplinary skills, and innovation. In response to these demands, various organizations throughout the United States have created and published various initiatives and even standards for what we should expect of our P-20 students and how our classroom teachers should promote achievement. Within the ever-changing context of today's society, we must look to our teacher education programs to help prospective mathematics teachers build mathematics habits of mind. It is imperative tomorrow's teachers promote a conceptually indexed, broad-based foundation of mathematics knowledge for teaching. Instrumental teaching encompasses the establishment and strengthening of the transdisciplinary connections and demands of today's society. Dr. Mohr-Schroeder will discuss the need to create and modify transdisciplinary teacher education programs, what challenges the new mathematics and science standards create for new teachers and our teacher education programs, and what effect these changes will have on students as they are prepared for post-secondary education and their careers. **Grade Level: 9-12**	***Featured Speaker*** **Margaret Mohr-Schroeder**

Session 6: 8:00 – 9:10
70 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Colonial A	**Teaching Algebra I, Geometry, and Algebra II using the Kentucky Core Academic Standards for Mathematics** A look at the content standards as addressed in Appendix A of the Kentucky Core Academic Standards for Mathematics and the implications for teachers. The focus will be on standards that present new ways of thinking about the mathematics, as well as the additional content to be taught in the subject areas of Algebra I, Geometry, and Algebra II. Teaching strategies in enhancing student engagement will be demonstrated. **Grade Level: 6-8, 9-12, 13-16**	**Jenny Ray**
Colonial C	**Delving into Differentiation – New and Improved!** So, you've done the diagnostic assessment on your students. Now what? This session will give you ideas for taking the next steps. Track student progress daily with quick assessment checks. Differentiate instruction in Number Word Sequences, Numerals, Structuring Numbers, and Addition and Subtraction Strategies with learning centers based on your assessment data to keep students motivated and moving along on their journey to numeracy. Presenters will demonstrate use of a CD with everything you need to get started, including individual student objectives, color-coded learning centers for each construct, progress reports, and more! Information on CD availability will be provided. **Grade Level: K-2**	**Belle Rush, Jan Estes, Cher Rosser**
Mason-Headley	**Developing Self-Directed Mathematical Learners** How are classroom cultures developed that encourage students to think? What kinds of teaching practices help students become self-directed learners? This session will explore some beliefs, values, and norms underpinning teaching practices that help students become independent mathematical thinkers. Participants will learn shared decision-making processes that both teachers and students can use to solve not only mathematical problems, but classroom social problems as well. Questioning techniques, wait-time, and student-student and teacher-student interactions will also be examined as ways of creating self-directed mathematical learners. **Grade Level: 3-5, 6-8, 9-12**	**Seth Hunter, Reneé Yates**
Summit	**A Conceptual Construction of Integers** College students often enter their postsecondary mathematics courses with a superficial grasp of basic operations with integers. They tend to rely on memorized rules and procedures to add, subtract, multiply, and divide integers. However, working with integers in this way can confuse students and result in a misuse of "the rules," often limiting their opportunities for successful attainment of future mathematical concepts. Therefore, in this talk, the speakers will contend that teachers should provide students with opportunities to actively construct the rules for integer operations, rather than transmitting them as ready-made. Further, participants will explore several ways to engage middle school students in the conceptual understanding of integer math. **Grade Level: 6-8**	**Summer Bateiha, Twyla Harris**

Session 6A: 8:00 – 8:30
Session 6B: 8:40 – 9:10
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Terrace	**Literacy Strategies for the Mathematics Classroom** This session is based on professional development activities designed for four rural county school districts: Estill, Jackson, Lee, and Owsley. The professional development was funded by the Council on Postsecondary Education as part of an Improving Educator Quality grant. I will first present an overview of several types of literacy strategies, then focus on using one strategy, Gallery Walk, to examine the Common Core State Standards Mathematical Practices, build consensus and synthesize concepts. Participants will experience the Gallery Walk strategy. **Grade Level: 6-8, 9-12** **Presented during 6A only**	**Gina Foletta**
Terrace	**Deepening Mathematical Understanding through Literacy** Mathematical discourse, widely considered one of the most meaningful learning strategies in high school courses, is a pivotal theme in the Kentucky Core Academic Standards for content and practice. Participants in the presentation will discuss strategies that foster meaningful discussion in class by encouraging our students to be responsible consumers and producers of knowledge. This is demonstrated through proficiency in communicating their reasoning verbally, in writing and in evaluating the reasoning of others. We will discuss the clusters of content standards most closely associated with this practice, student samples and feedback, and the challenges most often faced when implementing these practices. **Grade Level: 6-8, 9-12** **Presented during 6B only**	**Jennifer Warford, Kelly Stidham**

Session 6A: 8:00 – 8:30
Session 6B: 8:40 – 9:10
30 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Magnolia	**Noticing Numeracy Now (N^3): A Collaborative Research Project to Develop Pre-service Teachers' Abilities to Professionally Notice Children's Mathematical Thinking** The project goal is to provide information about the extent to which an innovative learning experience focused on the professional noticing of children's numeracy develops pre-service teachers' (PSETs') capacity to attend to, interpret, and respond appropriately to the mathematical thinking of children. The research uses a module, Noticing Numeracy Now (N^3), developed by the researchers and based on professional literature in the areas of professional noticing and the Stages of Early Arithmetic Learning (SEAL). The research will advance knowledge and understanding of how teacher educators can facilitate PSETs' development of professional noticing, knowledge of children's conception of unit, mathematical knowledge for teaching, and positive attitudes toward mathematics. The proposed activities present a creative and potentially transformative approach to the preparation of future elementary teachers through classroom and field activities that explicitly promote the development of the component skills of professional noticing in the context of SEAL. This is a collaborative effort initiated by the Kentucky Center for Mathematics. It builds on the expertise and experience of postsecondary professors from both Colleges of Education and Arts and Sciences at the eight Kentucky public universities. **Grade Level: Pre-K, K-2, 13-16** **Presented during 6A only**	**Edna Schack, Jonathan Thomas, Molly Fisher, Margaret Yoder**
Magnolia	**Top Ten Ways to Teach 10!** Teaching ten is a key component for numeracy. From number recognition to adding and subtracting, without true understanding of ten, students will struggle in math. Participants will leave this session with experienced Math Intervention Teachers' top 10 strategies for teaching 10, assessments and a make and take activity. **Grade Level: K-2** **Presented during 6B only**	**Selisa Adams, JoLin Owens, Calvin Music, Robin Shepherd**

Friday, February 25th
Session 7: 9:20 – 10:30
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial B	**Walking the Talk: Creating Robust Student Discourse in K-3 Classrooms** Where are children's voices in our classrooms? Why are so many children silent learners? How does this silence affect learning? If discourse is critical to the development of students' mathematical reasoning, how do coaches and teachers improve student talk in classrooms? In this session, we will focus on the process standards in mathematics to examine how specific talk moves generate rich academic discourse. We will also explore how to use discourse techniques to differentiate without lowering the standards for special needs and second language learners. Video, handouts, and techniques will be shared. **Grade Level: K-3**	***Featured Speaker*** **Antonia Cameron**
Paddock	**Developing Number Sense in Middle School** The goal of this session is to give middle school math teachers activities that can be used in whole class settings to increase students' abilities to calculate problems mentally as well as increase their quantitative reasoning (the ability to think about numbers by their quantity). These are activities that can be used as class openers, during time targeted for intervention, or during a regular class period. These activities consist of games, flashed quantities, concealed quantities, problem strings, and hands-on activities. **Grade Level: 6-8**	**Linda West,** **Kim Elam**
Terrace	**Implementing the Five Practices: A Case Study** In a Secondary Mathematics Methods class, the five practices of anticipation, monitoring, selecting, sequencing and connecting were implemented with pre-service secondary mathematics teachers with a task that asked them to determine a square of half the area of a given square. During the class meetings in which the anticipated student responses to the task were discussed, many interesting mathematical connections between and among responses were uncovered. In this session, the presenter will share the results of the discussion with the pre-service teachers, as well as give participants the opportunity to explore the task themselves, consider anticipated student responses, and discuss selecting and sequencing student responses in such a way that mathematical connections are highlighted. **Grade Level: 9-12, 13-16**	**Bethany Noblitt**

Session 7: 9:20 – 10:30
70 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Oak	**Singapore Math in Kentucky** Marshall County School District was one of the first to use the Singapore Math Approach in the state of Kentucky. The change in our approach to teaching math was prompted by analyzing data trends of student achievement in math at all grade levels in our district. It was found that students were not mathematically sound once leaving the elementary school level, and thus, not prepared for higher level mathematics courses. Singapore students scored in the top of the TIMSS in 1995, 1999, and 2003. This research-based curriculum encourages an active thinking process, communication of mathematical ideas, and problem solving. Singapore Math develops the foundation students will need for advanced mathematics courses. Many other school districts have visited Marshall County to view Singapore Math in action. Since the Singapore Math curriculum aligns well with the Kentucky Core Academic Standards for Mathematics, many other districts may be interested in this curriculum as well. **Grade Level: K-2, 3-5, 6-8, 9-12, 13-16**	**Julie Teague, Tatiana Adams, Diana Shadowen**

Session 7A: 9:20 – 9:50
Session 7B: 10:00 – 10:30
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial A	**KDE Update** Kentucky Department of Education representatives will discuss current news regarding Senate Bill 1 implementation, assessment, standards, and other pertinent information. **Grade Level: K-2, 3-5, 6-8, 9-12, 13-16 Presented during 7A only**	**Chyleigh Rose, Amy Patterson**
Colonial C	**Course Management and Student Success** During this session, a Course Manager model that provides care, consistency and collegiality for part-time faculty within the college will be presented. Content will focus on the four key roles of a manager and how the model contributes to meeting learning outcomes for our students. **Grade Level: 9-12, 13-16 Presented during 7B only**	**John Cathcart**
Mason-Headley	**Using Formative Assessment Results to Differentiate Instruction** As a high school math teacher, I knew I needed to do a better job meeting individual needs of my students. The problem was I had no idea how. This session will inform participants how my classroom was transformed by the use of aligned, formative assessments and the data that resulted in doing this. A short video documenting the improved classroom practices and student reaction will provide insight for participants who need to see to believe. **Grade Level: 6-8, 9-12 Presented during 7A only**	**Jessica Addison**
Mason-Headley	**Algebra I for All 8th Graders** East Jessamine Middle School has successfully implemented an "Algebra I for All" plan over the past 4 years. This session will provide the rationale for this aggressive plan, the blueprint, bumps in the road and how we know it's successful. **Grade Level: 6-8 Presented during 7B only**	**James Botts, Susan Gordon**
Magnolia	**Using Dreambox Learning Virtual Manipulatives** In this session, a Kentucky Math Intervention teacher will share successful strategies and uses of Dreambox Learning (an award-winning web-based mathematics instructional tool) for the classroom. Virtual manipulatives will be demonstrated to teach early numeracy concepts, skills, and strategies (such as the five- and ten-structures and subitizing). Several of Dreambox Learning's free virtual manipulatives, including the mathrack, tenframe, snapblocks, open number line, and numbergrams, will be shared. Teachers interested in virtual programs as an avenue for mathematics intervention will also learn how Dreambox Learning uses data to increase student learning and provides similar data to teachers as an instructional tool. Teachers will share how the program can be used with students who have a wide range of abilities and settings, from gifted to struggling in math and from whole-class to individual instruction. Note: Dreambox Learning is designed for students K-3 (with grades 4-5 being developed). **Grade Level: K-2 Presented during 7A only**	**Suzanne Farmer**

Session 7A: 9:20 – 9:50
Session 7B: 10:00 – 10:30
30 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Magnolia	**Making Math Balance: Structuring Numbers** In order to meet the Kentucky Core Academic Standards for Mathematics in adding and subtracting numbers fluently within 20, my school is teaching structuring numbers to 5, 10, 10 wise, doubles, and doubles-plus-one very heavily. Math Balances from EAI Education have enhanced our lessons and provided us with teaching clearly to the students how the equal sign means "the same as". These balances and the activities that go with them are very supportive of our Kentucky Core Academic Standards for Mathematics, specifically in numeracy, and have a high impact on student learning. **Grade Level: K-2** **Presented during 7B only**	**Bonnie Humphries**

Friday, February 25th
Session 8: 10:50 – 12:00
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial B	**Designing Assessment for Learning: Professional Development that is Especially for High School Mathematics** Replicable strategies and techniques for engaging high school students in a "productive struggle" with mathematics will be introduced. In this highly interactive session, Dr. Shannon will introduce lessons that have been funded by the Bill and Melinda Gates Foundation. Participants will have the opportunity to see how formative assessment can transform the learning of high school mathematics. **Grade Level: 9-12**	***Featured Speaker*** **Ann Shannon**
Colonial A	**What Does the Star Mean, Again? Modeling the Core Academic Standards in our Classrooms** As mathematicians, we recognize math as the language through which we describe, explore and understand our world. As educators, we recognize our responsibility to teach our students how to harness this tool in a meaningful, reflective and independent way. Modeling is a pivotal theme of the Core Academic Standards for High School Mathematics, present in the standards for content as well as practice. The expectations described in the document clearly define what "modeling" is and represents a departure from the "application" problems of our textbooks, so often skipped, skewed or bemoaned by our students. This presentation will discuss the definition of modeling from the standards documents, what it is and is not, how to foster and facilitate modeling in your classroom and how to assess this style of reasoning for student learning. **Grade Level: 9-12**	**Kelly Stidham**
Colonial C	**Serving Advanced Math Students Using the Diagnostic Testing – Prescriptive Instruction Method** The Study of Mathematically Precocious Youth provides an easy-to-replicate model to develop personalized programs for highly gifted K-12 mathematicians. Discover how one small K-8 school maximized limited resources using the Diagnostic Testing - Prescriptive Instruction method. Identifying students as young as 5th grade ready for algebra, we provided a path with appropriate challenge. Students in other grades were placed appropriately in advanced math courses too. This session will teach the steps of the DT->PI process, which has a 40-year-long successful track record with advanced learners from elementary school to high school. Effective tools, texts, and assessments will be shared, demonstrated, and explained. **Grade Level: K-2, 3-5, 6-8, 9-12**	**Anne Flick**

Session 8: 10:50 – 12:00
70 Minute Sessions - Continued

Room	Session Title and Abstract	Presenter(s)
Paddock	**From the Cradle to Graduation: Alignment of Kentucky Core Academic Standards and Kentucky Early Childhood Standards** Work is progressing on the alignment of Kentucky's new Core Academic Standards (Kindergarten) and Kentucky's Early Childhood Standards (3 & 4 year olds). This session is for anyone interested in exploring the foundation of mathematics instruction. Participants will have the opportunity to see the proposed alignment of the math standards and participate by giving valuable feedback in this on-going work. **Grade Level: Pre-K, K-2**	**Janis Logsdon, Rebecca Atkins-Stumbo, Chyleigh Rose**
Terrace	**Using the "Gettysburg Address" to Introduce the Statistical Concept of Level of Confidence** In this session, those in attendance will participate in an activity designed to introduce the statistical concept of level of confidence, as well as reinforce other key statistical ideas, using the words in the "Gettysburg Address" as the population. The new common core standards require that secondary students be able to estimate population parameters using confidence intervals. While the calculation of confidence limits is quite straightforward, the theory behind these calculations is often misunderstood. Prior to the introduction of estimation, students have likely been exposed to characteristics of a distribution, parameters and statistics, and sampling distributions. Past experience, however, indicates that many students continue to struggle with these ideas. This activity not only attempts to convey the meaning of level of confidence, it also seeks to reinforce these foundational concepts. **Grade Level: 9-12, 13-16**	**Brooke Buckley**
Summit	**Assessment for Learning in the Middle School Math Classroom** This session will focus on the use of assessment for learning in the mathematics classroom. Participants will experience a formative assessment lesson created by the Shell Centre (funded by the Gates Foundation). The emphasis will be the incorporation of the Standards for Mathematical Practice into the classroom through the use of learning tasks which encourage higher level thinking, multiple representations, and communication about mathematics. Participants will leave with several classroom-ready tasks. **Grade Level: 6-8**	**Jenny Barrett**

Session 8A: 10:50 – 11:20
Session 8B: 11:30 – 12:00
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Mason-Headley	**Believing or Doubting?: The Implications of Teachers' Practices** Kentucky Core Academic Standards define the rigorous skills and knowledge that students need to learn. In order to help students develop a deep understanding of mathematics, teachers must consider how their practices help or hinder students' enjoyment of doing mathematics. In fact, many people view mathematics as a discipline of certainty and rigidity. Answers are either right or wrong. It is easy for teachers to play the "doubting game" when their students give wrong answers. We invite conference participants into our classrooms as we talk about our attempts to play the "believing game." We provide a lens into how we suspended our own logic, assumptions, and interpretations until we first tried to "unpack," understand, and honor our students' answers. We "believe" that when we practice the "believing game", it has the potential to impact our students' motivation and our own content knowledge of mathematics. **Grade Level: 13-16** **Presented during 8A only**	**Shelly Harkness, Amber Brass**
Mason-Headley	**A View of Professional Development as Technology Transfer** While "professional development" carries a sense of personal improvement, the term "technology transfer" carries that of activities undertaken to enhance the productivity of the receiving organization (rather than the receiving individuals). It also projects the sense of new knowledge or capacity being acquired from its originators by the most qualified people in the receiving organization for the purpose of advancing specific objectives. We will discuss a technology transfer model for professional development among college and secondary mathematics faculty. **Grade Level: 9-12, 13-16** **Presented during 8B only**	**Paul Eakin**
Magnolia	**The Aspects of Number: Why Numeral Identification?** We all know that it is important to know your numerals. But how do you make this more exciting to motivate your students? Do you have one inch square tiles? Come see how we have used these and other math tools we already have in our classrooms to improve students' relationships with numbers and to motivate students to learn more about numbers. **Grade Level: K-2** **Presented during 8A only**	**Amanda Pasley, Melissa Dicken**
Magnolia	**Build your Money Skills** We will use structuring, composing and decomposing numbers to enable young math students to calculate the value of coin sets and determine the correct amount of change. **Grade Level: K-2** **Presented during 8B only**	**Becky Fuqua, Helen Blevins, Suzanne Farmer**

NOTES:

Friday, February 25th
Session 9: 1:30 – 2:40
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial C	**Developing Understanding: Students Linking Area and Number to Reason About Place Value** We often ask students to make a drawing to help solve a problem. Yet all drawings are not equally helpful. What types of drawings are most helpful? When students can represent whole-number products as rectangular areas in mathematical reasoning they have a very powerful mathematical tool. We asked a Year 6 teacher if her students could use their understanding of the structure of rectangular arrays and area to reason about place value. What we discovered was that using area drawings is an effective way for students to reason about place value and to generalize their reasoning. **Grade Level: 4-6**	***Featured Speaker*** **Peter Gould**
Colonial A	**I Wonder Why?** A brief overview of the connection between activities that are fun and engaging for young children, how such activities get pre-school children questioning how and why things happen, and what informal and pre-formal math concepts and connections such activities help young children begin to explore (ex: one-to-one correspondence, number sense and counting, logic and classifying, comparing, early geometry shapes & spatial sense, parts and wholes, ordering, seriation, and patterning, measurement; volume, weight, length and temperature). A number of specific math activities that teachers can engage young children in to promote a "desire to inquire" about math will be demonstrated. Participants will be provided with a list of the materials needed to organize these activities and many more like them, as well as web resources that they may seek out on their own to find additional activities. **Grade Level: Pre-K**	**Susannah Dickman, Dan Dickman**
Colonial B	**Keep It Balanced** In life and in math, it is important to KEEP IT BALANCED! Students often think of the equal sign as an "operation" or "action" sign – they think they need to STOP immediately and write an answer. Join us as we explore a conceptual understanding of equality (equivalence) with a variety of activities and physical models. **Grade Level: K-2**	**Vonda Stamm, Tolene Pitts**
Paddock	**What's in it for Me? Connecting Math Standards with Student Interests Using the Individual Learning Plan** This interactive session will illustrate how to make connections between math standards, careers and resource components within the Individual Learning Plan. Sample lesson plans will be provided and participants will have an opportunity to create additional lessons to take back for immediate use in their classrooms. **Grade Level: 6-8, 9-12**	**Sharon Johnston, Amy Patterson**

Session 9: 1:30 – 2:40
70 Minute Sessions - Continued

Room	Session Title and Abstract	
Summit	**Come See What our Four Noyce Projects are Doing for Kentucky** Kentucky has received four Robert Noyce Teacher Scholarship grants: UK is in their fourth year, UL is in their second year, WKU is in their second year, and NKU is in their second year. With our many school partners (Fayette County, Woodford County, Jessamine County, Jefferson County Public Schools, Bowling Green Independent, Edmonson County, Metcalf County, Monroe County, Owensboro Public, Cincinnati Public Schools, Covington Independent Schools, Newport Independent Schools) we are nurturing the teacher-leaders of tomorrow. This panel session will share our efforts to address SB1 and CCSS for mathematics within each Noyce project. **Grade Level: 13-16**	**Gina Foletta, Margaret Mohr-Schroeder, Hope Marchionda**
Oak	**Lessons Learned from the Gatton Academy** The Gatton Academy of Mathematics and Science is in its 4th year, working with high school students from across the state. This session will be a discussion on what we have learned through the Academy Community about student preparedness for college level courses, the impact of acceleration, study skill development, and the social and emotional impact of an early college experience. **Grade Level: 9-12**	**Tim Gott**

Session 9A: 1:30 – 2:00
Session 9B: 2:10 – 2:40
30 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Mason-Headley	**Mini-Lessons Using the Math Rack and Other Tools** Participants will learn to stimulate children's thinking by exploring the arithmetic rack and other tools in daily 10 minute mini-lessons designed to help students develop an understanding of number sense concepts. Strategies covered are the 5 and 10 structure of numbers, compensation, commutative property, making 10, doubles and near doubles, relating addition and subtraction, and more. All of these strategies are connected to the Kentucky Core Academic Mathematics Standards for numeracy development in the early primary grades. **Grade Level: K-2** **Presented during 9A only**	**Wilma Rogers**
Mason-Headley	**Developing Non-Count-by-Ones Strategies for Solving Addition and Subtraction Problems** Participants will explore instructional strategies that will help develop understanding and skills for solving one-, two-, and three-digit addition and subtraction problems. **Grade Level: K-2** **Presented during 9B only**	**Linda Jewell**
Magnolia	**Common Core Concerns in High School Mathematics** The required Common Core Standards in high school mathematics (those required of all students) contain far too much content to be covered effectively in Kentucky's three required high school mathematics courses, Algebra I, Algebra II and Geometry. It would be unwise to insert additional content into the geometry course since the required Common Core Geometry Standards are so challenging. The temptation is to insert all the required Common Core Probability, Statistics and Precalculus content into the two algebra courses. Yielding to this temptation would necessarily lead to a de-emphasis of the essential algebra content that is necessary for college readiness. Kentucky should take bold steps to avoid this problem that would seriously undermine efforts to improve college readiness by not providing students the focused, in-depth algebra courses they need to be prepared for college. The following two actions offer a partial solution: 1) Design and offer in-depth, elective courses in probability and statistics that cover the required Common Core High School Standards in probability and statistics to free up more time for essential algebra content in the required algebra courses. 2) Include traditional precalculus content in the required Common Core Standards in an elective precalulus course instead of the two required algebra courses. **Grade Level: 9-12, 13-16** **Presented during 9A only**	**Steve Newman**

NOTES:

Friday, February 25th
Session 10: 2:50 – 4:00
70 Minute Sessions

Room	Session Title and Abstract	Presenter(s)
Colonial B	**Addition in Preschool: It's Everywhere in the Classroom – or Can Be!** Children in math-rich environments often begin to transition into addition before they leave preschool. How do children progress from quantifying simple sets to early addition? What helps them make this transition? What may hinder it? What is the role of play experiences? Research documenting trajectories in early addition development will be explored and connected to classroom materials and environments. **Grade Level: Pre-K**	***Featured Speaker*** **Sally Moomaw**
Mason-Headley	**Using the Free Online easyCBM Assessment System to Enhance Teaching and Learning** Attendees will have the opportunity to learn first-hand from one of the developers of easyCBM (Curriculum-Based Measures), an online progress monitoring system designed to support the implementation of Response to Intervention. The session will provide an overview of the system, including a description of the K-8 mathematics tests it includes, and a demonstration of how to access and interpret the progress monitoring reports. The goal of the presentation will be to provide educators with the information they need to begin using the easyCBM assessment system effectively as soon as they return to their schools. First introduced in 2006, easyCBM has gained increasing popularity with educators seeking access to technically-adequate assessments in mathematics and reading, K-8. The math measures on the system represent a significant addition to the field in that they extend beyond numeracy and computation-based problems, are designed for computer administration and scoring, were developed using Item Response Theory to enhance the comparability of alternate forms, and were normed on a stratified national sample of students, K-8 in the 2009/2010 school year. **Grade Level: K-2, 3-5, 6-8**	**Julie Alonzo**
Paddock	**Helping More Students Achieve Facility with Multiplication and Division Facts** Transitioning from repeated addition and subtraction strategies to using multiplication and division facts is not easy for many of our students. Are we doing enough to help our students? In this session we will explore how we can be strategic in supporting students in this transition to knowing and using multiplication and division facts. **Grade Level: K-2**	**Petey MacCarty, Kurt Kinsey**

Session 10: 2:50 – 4:00
70 Minute Session - Continued

Magnolia	**Leadership Networks and District Implementation** Introduction to the various networks being implemented across the state regarding Senate Bill 1 (SB1): Instructional Support Leadership Network, Kentucky Leadership Academy Network, and Teacher Participant Network. We will tell how these networks combine to form district leadership teams. One district will share how they have chosen to effectively disseminate the information of SB1 to all staff members in the district. Other district models will be discussed as well. **Grade Level: K-2, 3-5, 6-8, 9-12**	**Charles Rutledge, Jim Hamm**

Session 10A: 2:50 – 3:20
Session 10B: 3:30 – 4:00
30 Minute Sessions

Colonial A	**Preparing Secondary Students for College Readiness in Mathematics** New state legislation enacted in 2009 mandates college and career readiness for all secondary students in the commonwealth of Kentucky. In late summer 2009, the mathematics education team from Eastern Kentucky University met with teachers and administrators at a regional school district to develop and implement pilot "transition to college" mathematics courses. The pilot program centered on a framework of content and concepts roughly aligned with the developmental courses at the university that were adapted to the specific needs and conditions of the high schools. In its second year, the College Readiness Initiative has expanded to over 40 school districts in Kentucky serving more than 120,000 high school students. The Kentucky Commissioner, on his September 4, 2009 blog, included this highly successful initiative as an example of best practice in Kentucky schools. **Grade Level: 9-12** **Presented during 10A only**	**Nancy Blue Williams, Robert Thomas**
Colonial A	**Automaticity and High School Readiness in Mathematics** The initiative combines a comprehensive basic skills initiative centered on automaticity, numeracy, and mathematics fluency with a comprehensive testing and remediation program. The program includes three phases: initial diagnosis of automaticity, automaticity remediation review sheets, and individualized student remediation, reinforcement, and enrichment. Throughout each phase, university professors work closely with K-8 teachers to provide resources and direction to foster computational fluency. In its second year, the project has expanded to over 45 school districts, serving students across Kentucky. This presentation will describe the components of this successful program and outline the process for automaticity diagnosis and remediation. **Grade Level: 3-5, 6-8, 9-12** **Presented during 10B only**	**Robert Thomas, Nancy Blue Williams**

Session 10A: 2:50 – 3:20
Session 10B: 3:30 – 4:00
30 Minute Sessions - Continued

Colonial C	**The Quantile Framework for Mathematics** The Quantile Framework for Mathematics is a free tool which can be used to monitor progress, forecast performance on assessments, match students with appropriate materials at their level, determine if a student is ready for a new mathematics skill or concept, and assist teachers in many other ways. **Grade Level: K-2, 3-5, 6-8, 9-12** **Presented during 10A only**	**Chyleigh Rose**
Colonial C	**Developing Place Value Concepts** Mental strategies for double digit addition and subtraction go hand-in-hand with developing place value concepts and a rich understanding of quantity and number. The presenters will share strategies and activities for working with students on place value concepts, starting with materials and moving to mental computation. **Grade Level: K-2, 3-5** **Presented during 10B only**	**Carrie Gary, Cynthia Aossey**
Summit	**Redesigning College Algebra** Recently Morehead State University's College Algebra class has undergone a drastic redesign. Through a grant from the National Center for Academic Transformation (NCAT) we have modified our delivery of content, lecture time, student requirements and amount of student interaction. We will look at the details of how the course was redesigned, problems with implementation, what changes may yet be made in the future, and some early results addressing the effectiveness of the changes. **Grade Level: 13-16** **Presented during 10B only**	**Christopher Schroeder**
Oak	**Online Calculus and Precalculus** This session talks about the development process of online calculus and precalculus to meet the needs of community college students, and how to use this as a tool for outreach to high school students seeking dual credit in higher mathematics. **Grade Level: 13-16** **Presented during 10A only**	**Kathy Lewis, Gail Stringer**

My Conference Planner

Day	Session	Room	Title
THURSDAY	1		
	2		
	3		
	4		
	5	Colonial A, B, and C	Dr. Votruba, NKU; Dr. Holliday, KDE; Dr.Thompson, CPE
FRIDAY	6		
	7		
	8		
	9		
	10		

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welcomes the following vendors and exhibitors to the 2011 KCM Conference!

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You can visit the vendors in Colonial Rooms D, E, and F.

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Lisa Adams
Selisa Adams
Tatiana Adams
Jessica Addison
Julie Alonzo
Cynthia Aossey
Rebecca Atkins-Stumbo
Charlotte Baker
Arthur Baroody
Jenny Barrett
Brooke Bartrug
Summer Bateiha
Cynthia Bell
Buddy Berry
Jean Bingham
Helen Blevins
Ann Booth
James Botts
Amber Brass
David Bressoud
Traci Brown
Brooke Buckley
Maurice Burke
Antonia Cameron
John Cathcart
Melissa Dicken
Dan Dickman
Susannah Dickman
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Lesia Eldridge
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Jan Estes
Suzanne Farmer
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Gina Foletta
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Carrie Gary
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Mary Greene
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Dianne Leveridge
Kathy Lewis
Kelly Lindsey
Kelly Livers
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Kim Loucks
Petey MacCarty
Hope Marchionda
Marsha Maupin
Margaret Mohr-Schroeder
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Kentucky Council of Teachers of Mathematics

The mission of KCTM is to provide support and professional development for teachers of mathematics students from kindergarten and beyond.

Local Chapter Affiliates

- Big Blue Council of Teachers of Mathematics (BBCTM)
- Cumberland Council of Teachers of Mathematics (CCTM)
- Eastern Kentucky Council of Teachers of Mathematics (EKCTM)
- Greater Louisville Council of Teacher of Mathematics (GLCTM)
- Kentucky Mathematical Association of Two-Year Colleges (KYMATYC)
- Lexington Council of Teachers of Mathematics (LCTM)
- Northern Kentucky Council of Teachers of Mathematics (NKCTM)
- Western Kentucky Council of Teachers of Mathematics (WKCTM)

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Benefits of Membership:

- Access to a host of on-line teacher resources via the KCTM website including materials from the National Council of Teachers of Mathematics (NCTM)
- Annual Fall State Conference
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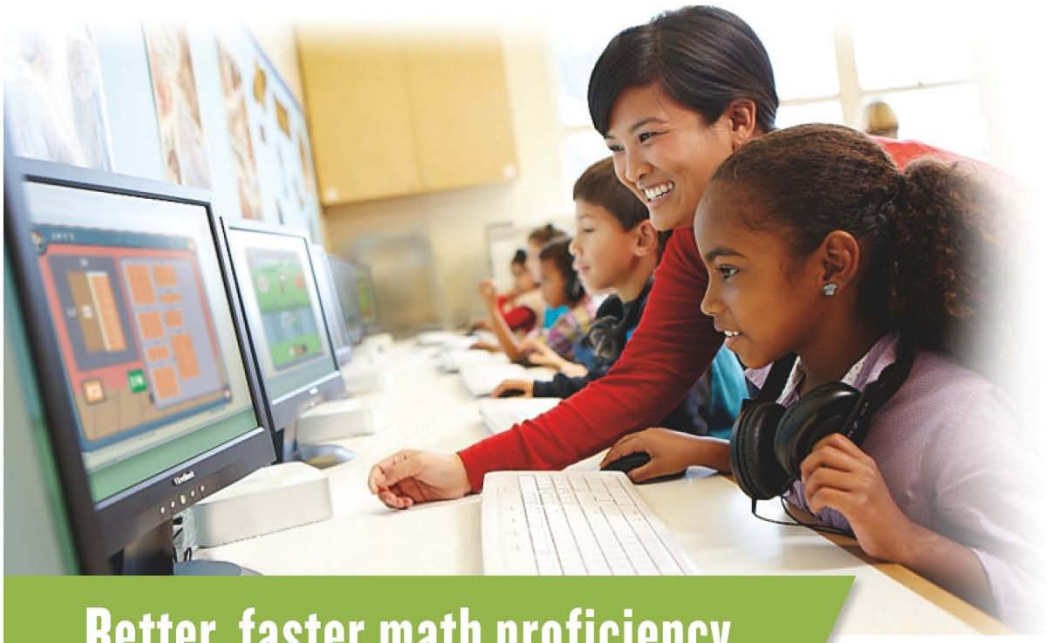

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