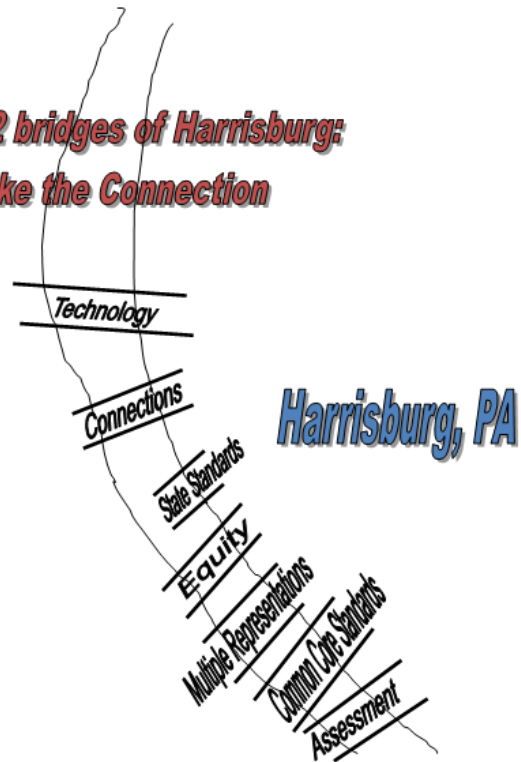


Pennsylvania Council of Teachers of Mathematics

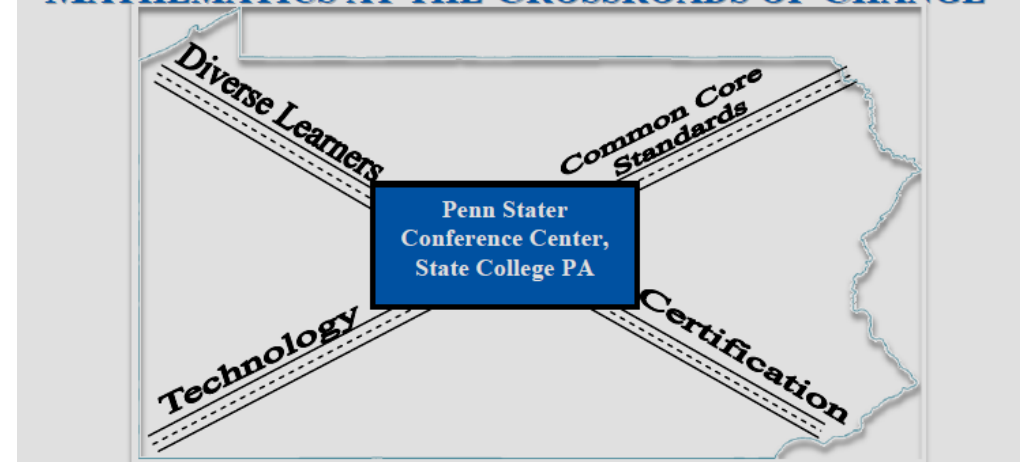
60th Annual Conference

*The 6 1/2 bridges of Harrisburg:
Make the Connection*



*PCTM 61st Annual Conference
Oct. 17-19, 2012
Raddison Hotel, Camp Hill, PA*

MATHEMATICS AT THE CROSSROADS OF CHANGE



November 9-11, 2011

PRESIDENT'S WELCOME

Are you ready for the “Mathematics at the Crossroads of Change”?

Welcome to the 60th Annual Conference of the Pennsylvania Council of Teachers of Mathematics! We are excited to be meeting at the Penn Stater Conference Center Hotel, State College, PA!

The Conference Committee has been working diligently to present a rich program packed with special events, PCTM Birthday Bash on Wednesday and PCTM Banquet on Thursday.

We have invited two featured speakers, Douglas Clement, PhD, SUNY Distinguished Professor of Learning and Instruction, University of Buffalo, and Melendy Lovett, President, Education Technology, Texas Instruments. They will share their insights, experiences, and expertise on topics and emerging issues. In addition, we will have 60 minute sessions, 90 minute workshops, and 3 hour mini-courses. To top it off, there will be two special programs: the Pre-Service and Early Career Teacher Programs on Thursday and Friday. They are geared to energize, invigorate, and celebrate pre-service and early career mathematics teachers.

Many thanks to Dr. Judy Werner, the Conference Chair and Dr. Mary Ann Matras, the Program Chair who were working tirelessly and collaboratively with all committee chairs and members to make this conference a successful one! Most importantly, thanks to all speakers who share their informative sessions with us!

Please join us on November 9-11 and bring a colleague along to enjoy this exciting conference!

Pauline Chow
President of PCTM

Exhibitors

AMSCO School Publications
Bedford, Freeman, and Worth

Carnegie Learning

Casio

CPM

Cord Communications

Curriculum Associates

D & H Distributing

Educational Technology Consultants

Educators Outlet

Hands-On Equations

Houghton Mifflin Harcourt

Lock Haven University

Math Forum

Math Teachers Press

McGraw Hill

Neufeld Learning

Peoples Education

Perfection Learning Corporation

Renaissance Learning

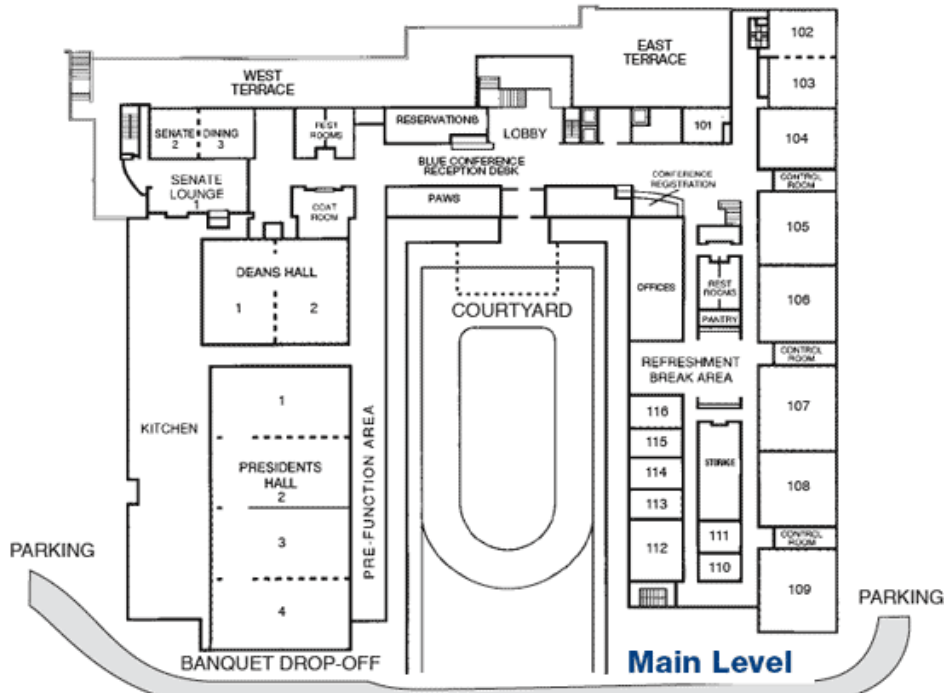
Saxon Publishers

School Specialty Math

Texas Instruments

Triumph Learning

Map of the Penn Stater



60th Annual PCTM Meeting Committee Chairs

General Chairperson

Judy A. Werner
judy.werner@sru.edu

Program

Mary Ann Matras
mmatras@po-box.esu.edu

Registration

Mary Lou Metz Nina Girard
m.l.metz@iup.edu nina@pitt.edu

Commercial Exhibits

Mike Long
malong@ship.edu

Treasurer

Mark Hogue
mhogue@live.com

Webpage

Jason Silverman
js67@drexel.edu

Meals and Banquet

Rose Zbiek Andrea McCloskey
rmz101@psu.edu avm111@psu.edu

Student Hosts

Fran Arbaugh
arbaugh@psu.edu

Special Needs

Marian Avery
mavery@gvsd.org

Advertising

Linda Wagner-Pine
mouse@wagner-pine.com

Kim Johnson
ksj5@psu.edu

Special Conference Events

Wednesday, November 9

- PCTM Board Meeting 4:30 PM Room: Senate
- PCTM Birthday Bash 6:30—9:00 PM Room: Senate

Thursday, November 10

- Pre-Service Teacher Day 8 AM—4 PM Room 206 (page 30)
- Keynote Speaker, Dr. Doug Clements, *SUNY Distinguished Professor, University at Buffalo, SUNY,*

Lessons from Research: What Research Does and Does Not Tell Us

- Dinner Banquet and Speaker, Harold Asturias, *Director Center for Mathematics Excellence and Equity University of California—Berkeley,*
Connecting Mathematics and Language

Friday, November 11

- PAMTE Business Meeting 7:15 AM, Room 112 (page 30)
- Early Career Teacher Day 8:00 AM—4 PM (page 31)
- Keynote Speaker, Harold Asturias, *Director Center for Mathematics Excellence and Equity, University of California—Berkeley,*
Developing Mathematics Academic Language
- Keynote Speaker, Zalman Usiskin, *Professor Emeritus, The University of Chicago, Director, University of Chicago Mathematics Project*
The Shape of Geometry and The Geometry of Shape
- Keynote Speaker, Melendy Lovett, *President Education Technology, Texas Instruments*
The Interactive Math Classroom: Engaging Today's Learners
- PCTM Business Meeting and Luncheon—12 NOON

CONFERENCE PLANNER

Friday, November 12, 2011

Time	Session	Title	Room
8:00 AM			
9:00 AM			
9:45 AM			
10:00 AM			
11:00 AM			
11:30 AM			
12:00 PM			
1:00 PM			
1:15 PM			

CONFERENCE PLANNER

Thursday, November 11, 2011

Time	Session	Title	Room
8:00 AM			
9:00 AM			
9:45 AM			
10:00 AM			
11:00 AM			
11:30 AM			
12:00 PM			
1:00 PM			
1:15 PM			
2:00 PM			
3:00 PM			

PCTM Executive Board Meeting
Wednesday, November 9, 2011
Room: Senate
4:30 PM

PCTM Birthday Bash
Wednesday, November 9, 2011
6:30 PM—9:00 PM
Room: Senate



Come celebrate PCTM’s 60th Birthday
 * Tickets must be purchased in advance with registration for the conference. No tickets will be sold at the door.

SESSIONS AND WORKSHOPS

THURSDAY, NOVEMBER 10

1 Time: 8:00 - 8:50 Session (50 minutes) Room 205 College Level

Communications in Mathematics – The Course

Patricia Bederman Miller, Keystone College

An overview of Keystone College's course, Communications in Mathematics, which introduces the student to the use of verbal/written language to communicate thoughts, extend thinking, and understand mathematical concepts will be given.

2 Time: 8:00 - 8:50 Session (50 minutes) Room 205 Senior High(9-12)

Unspeakable Practices, Unnatural Acts

John Volk, School District of Philadelphia (retired)

Using familiar materials (in unorthodox ways) that you probably already have, or can get free or cheap, to engage your students in variety of subject areas, especially Algebra and Geometry.

3 Time: 8:00 - 8:50 Session (50 minutes) Room 204 Middle (5-8)

Developing Mathematical Practices

Suzanne Alejandre, The Math Forum @ Drexel

Resources (free) from the Math Forum @ Drexel to help your students make sense of problems, persevere in solving them and improve their math communication skills.

4 Time: 8:00 - 8:50 Session (50 minutes) Room 208 General Interest

Do the Math: Personal Finance + Common Core Standards=Real Life Learning

Julie Gilbert, PA Office of Financial Education

Mary Rosenkrans, PA Office of Financial Education

Learn what credit cards, compound interest, insurance rates and lottery tickets have in common with the math common core. Get free resources and sample lesson plans to make learning real.

5 Time: 8:00 – 8:50 Session (50 minutes) Room 109 General Interest

Developing a Solid Understanding of Graphical Representations of Data

Heather Ervin, Penn State University

Ashley Jairam, Penn State University

We will look deeply and differently into graphical tools for analyzing, summarizing, characterizing, and communicating data by engaging as learners in mathematical tasks integrated with a number of CCSS-M practices.

Stover	Bob	bstover@calvertcatholic.org	67
Stroschein	Kristy		34
Sullins	Ken	ksullins@mansfield.edu	46
Thomas	Brianne		38
Thornton	Victoria	thornve08@juniata.edu	94
Tobin	Bill	tobs@aol.com	33
Troutman	James	jtroutma@ycp.edu	72
Turkovich	Dawn	dawn.turkovich@email.stvincent.edu	91
Usiskin	Zalman	z-usiskin@uchicago.edu	79
Voigt	Ronnie	rjv12@psu.edu	41
Volk	John	phlaszh@hotmail.com	2
Waddell	Luke		94
Walker	Janet	jwalker@iup.edu	38
Waltrich	Thomas	twaltrich@gmahs.org	92
Wayne	Charlie	cwayne@state.pa.us	24, 47
Wilburne	Jane	jmw41@psu.edu	44
Williams	Steve	swillia6@lhup.edu	45, 108
Wright	Kelly		34
Yeager	Julie		85
Yeager	Karen	kyeager@camphillsd.k12.pa.us	48
Yoder	Velma	vyoder@messiah.edu	43
Zdenek	Brad		31
Zembower	Dotti		34



Lindbloom	Todd	Todd.Lindbloom@Pearson.com	29
Long	Mike	malong@ship.edu	15, 26, 107
Losey	Mark	mark@24game.com	68
Lovett	Melendy	mlovett@ti.com	88
Margusity	Linda		34
McGee	Robert		36
McKinley	Kathleen	kmcki10063@aol.com	74, 99
Moeslin	Toni		38
Moore	Mary Anne		21
Morph	Derek		38
Napoli	Mary		44
Orange	Walter	worange@pitt.edu	87
Patrylak	Stephen	spatryla@haverford.org	16
Pflanz	Ginalouise	gpflanz@crsd.org	70, 97
Piperno	Tony		11, 42
Plank	Marianne	Mwpenn.com	18a
Preston	Jim	james.preston@sru.edu	65, 89
Przydzial	Celine	przydzia@kutztown.edu	52
Reed	Shari	sreed@basd.net	10
Remillard	Kate	kremillard@francis.edu	22
Riley	Evelyn	mkgeschel@aol.com	83
Robinson	Benjamin		107
Romig	Gail	gmr12@scasd.org	34
Rosenkrans	Mary		4
Saclaro	Anne		68
Schiffman	Jay	schiffman@rowan.edu	73
Schuster	Amy		105
Serotta	Carol		36
Shimizu	Jeanne	jks196@psu.edu	35, 110
Sidlenick	Daniel	dsidelnick@comcast.net	84
Skoner	Peter	pskoner@francis.edu	58
Smith	Sam	ssmith@crsd.org	76
Spatz	Donn	trees25@hotmail.com	86
Stayton	Sheri	stayton7@dejazzd.com	14, 75
Steketee	Scott	stek@kcptech.com	9, 61

THURSDAY, NOVEMBER 10

6 Time: 8:00 - 9:30 Workshop (90 minutes) Room 104 Senior High (9-12)

Making Sense of Triangle Congruence: 6 Classroom Models

Charlene Keen, Dauphin County Technical School

Construct classroom models for triangle congruence theorems, including ambiguous SSA. DCTS students helped produce a kit of dowels, angles, and connectors. Participants complete models with hot glue and discuss use.

7 Time: 8:00 - 9:30 Workshop (90 minutes) Room 105 Middle (5-8)

Fraction Operations with Cuisenaire Rods

Kimberly Arp, Cabrini College

What one manipulative can be used for all four operations with fractions? Cuisenaire Rods!! Participants will learn how to use Cuisenaire Rods to concretely demonstrate fraction operations. Be ready for a door prize or two!

8 Time: 8:00 - 9:30 Workshop (90 minutes) Room 106 Elementary(K-4)

Building Number Sense in K-6 Students

Lois Dieterly, Muhlenberg School District

Wendy Hromiak, Muhlenberg School District

How do two learning lab teachers help struggling students? Learn hands on activities, games, and strategies you can use to build number sense and develop meaning behind basic math facts.

9 Time: 8:00 - 9:30 Workshop (90 minutes) Room 108 Middle (5-8)

Dynamic Multi-Representational Approaches to Fractions

with The Geometer's Sketchpad

Scott Steketee, KCP Technologies

With interactive fraction tools, students build area models of fractions, divide and subdivide segments, and animate points to fractional locations. Resulting student insights will surprise you. Bring your laptop.

10 Time: 8:00 - 11:00 Mini-course (3 hours) Room 112 Elementary(K-4)

Facilitating Learning for Struggling Students in an Everyday Mathematics Classroom

Shari Reed, Bellefonte Area School District

Patty Eckenroth, Bellefonte Area School District

Providing elementary struggling students daily experiences to facilitate their mathematical growth is an overwhelming endeavor. Participants will engage in adapting programming to meet students' needs.

THURSDAY, NOVEMBER 10

11 Time: 9:00 - 10:00 Session (50 minutes) Room 109 General Interest

Common Core Math Standards: Impact and Potential

Tyrone Holmes, Houghton Mifflin Harcourt

Tony Piperno

We will discuss what the new common core standards will mean to classroom instruction, assessment and provide examples of best practices.

12 Time: 9:00 - 9:50 Session (50 minutes) Room 202 College Level

Innovation Management Techniques used in Education

Igor Balsim, Kingsborough Community College

Ayalur Krishnan

Internet technologies are revolutionizing the use of distributed systems, such as Web search and e-commerce. The use of communications technologies make knowledge available very rapidly on a worldwide scale.

13 Time: 9:00 - 9:50 Session (50 minutes) Room 204 Middle (5-8)

Flatland: Pulling It All Together

Suzanne Ament, Campus School of Carlow University

Margaret Lazar, Campus School of Carlow University

A collaboration among disciplines created a community of learners with a common foundation in geometry and metaphor. Students read the classic "Flatland" and created models and video to demonstrate understanding.

14 Time: 9:00 - 9:50 Session (50 minutes) Room 205 Senior High (9-12)

Understanding Rational Functions and Asymptotes

Sheri Stayton, Lewisburg Area School District

This presentation will demonstrate ways to teach graphing rational functions from a broader perspective than is usually seen in textbooks. Misconceptions about asymptotes will be discussed. GeoGebra will be used.

15 Time: 9:00-9:50 Session (50 minutes) Room 206 General Interest

Math + Adrenaline = Roller Coaster

Mike Long, Shippensburg University

Nathan Barr, Shippensburg University

A little bit of algebra, geometry, statistics, and measurement, but it's all roller coaster. Come explore the mathematics of these amazing machines, including a peek at using the video game *RollerCoasterTycoon* and data collection devices for teaching math concepts.

Galluzzo	Benamin	bjgalluzzo@ship.edu	49, 93
Gilbert	Julie	jugilbert@state.pa.us	4
Girard	Nina	nina@pitt.edu	101
Gochenaour	Debbie	dlgochenaour@ship.edu	56
Gysling	Patricia	pgysling@wcupa.edu	95
Guglielmi	Stephanie		18
Harty	Kristin		91
Hinton	John	mathgames@mathmattersinc.com	80, 109
Hisle	Ralph	ralph@envisiontechnology.org	20
Hobaugh	Kristine	khobaugh@carnegielearning.com	66
Hocker	Jonathan		26, 93
Hoelt	Nancy	nhoelt@venangocatholic.org	105
Holmes	Tyrone	tyrone.holmes@hmhpub.com	11, 42
Houston	Michael	mhouston@riverside.k12.pa.us	104,106
Hromiak	Wendy		8
Ileria	Dan		81
Jackson	Kathleen		95
Jairam	Ashley		5
Johnson	Kim	kxj5@psu.edu	35, 37
Johnston	Jim		68
Kanter	Patsy	patsy.kanter@hmhpub.com	63
Karunakaran	Shiv	suk182@psu.edu	96
Kazmire	Bruce		84
Keen	Charlene	charlenekeen@gmail.com	6 50, 57
Kelly	Melissa		94
Kennedy	Dave	dikenn@ship.edu	64, 69
Kent	Jane		44
Kokoska	Stephen	skokoska@bloomu.edu	102
Kozain	Kelly		56
Krishnan	Ayalur		12
Kuntz	Jeffrey	jkuntz@punxsy.k12.pa.us	17
Labant	Megan		38
Ladick	Michael	michael.ladick@aiu3.net	60
LaForgia	Anna	iamanna4@yahoo.com	70, 97
Larson	Ron	odx@psu.edu	19
Lazar	Margaret		13

Presenters

Acker	Kathleen	katie.acker@gmail.com	36
Alejandre	Suzanne	suzanne@mathforum.org	3,
Ament	Suzanne	SRAment@carlow.edu	13
Arp	Kimberly	kim.arp@cabrini.edu	7, 28
Asturias	Harold	ha_@berkeley.edu	Banquet, 78
Avery	Marian	mavery@gvgsd.org	32, 62, 71, 90
Baker	Alyce	abaker4@lhup.edu	77
Balsim	Igor	ibalsim@gmail.com	12
Barr	Nathan		15
Baylor	Terry	twbaylor@comcast.net	51
Bederman Miller	Patricia	pat.miller@keystone.edu	1
Bohan	Jim	Intel.educ@gmail.com	40
Bonari	Jane	bonari@calu.edu	18
Branch	Amber	abbranch@casio.com	73a, 112
Breyfogle	M. Lynn	lynn.breyfogle@bucknell.edu	69, 85
Butterbaugh	Eric	ebutterbaugh@ti.com	23
Cannon	Tenille	txc285@psu.edu	37
Cannone	Joyce E.	joyce_cannone@miu4.k12.pa.us	98
Carducci	Olivia	ocarducci@po-box.esu.edu	39
Carroll	Susan		85
Cicioni	Stephen	scicioni@comcast.net	82
Clements	Douglas H.	clements@buffalo.edu	25
Cohen	Robert	rcohen@esu.edu	21
Colen	Jung		100
Colen	Yong	yscolen@iup.edu	27, 55, 100
Diehl	John	john3500i@att.net	59, 80a
Dieterly	Lois	dieterlyl@muhlsdk12.org	8
Dorf	Larry	ldorf@larsontexts.com	53
Eastburn	Julie		76
Eckenroth	Patty		10
Ervin	Heather	hky1@psu.edu	5
Evitts	Thomas	taevit@ship.edu	69, 103
Forlenza	Vito	vforlenza@relmid-atlantic.org	31
Freeburn	Ben		37
Fried	Jeffrey	drjcfried@aol.com	30

THURSDAY, NOVEMBER 10

16 Time: 9:45-11:15 Workshop (90 minutes) Room 104 Senior High (9-12)

Simulating the World (via Mathematical Models)

Stephen Patrylak, The Haverford School

Simulations have been used for centuries to predict the world. Today's computer models are: significantly more flexible, accurate, dynamic, cost effective and understandable. Learn and share how modeling is done.

17 Time: 9:45 - 11:15 Workshop (90 minutes) Room 105 Middle (5-8)

Using Picture Books in the Intermediate Mathematics Classroom: Part III

Jeffrey Kuntz, Punxsutawney Area Middle School

This session is designed to give participants a wealth of practical hands-on strategies and activities that are connected to favorite picture books. These PSSA friendly activities adhere to the Pennsylvania Academic Standards for Mathematics.

18 Time: 9:45-11:15 Workshop (90 minutes) Room 106 Elementary (K-4)

Let Algebra Activities Enhance All Other Math Concepts

Jane Bonari, California University of PA

Stephanie Gugliemi, California University of PA

Let us share with you algebra activities that will help your students better understand other mathematics concepts. Each participant will take home all directions for many algebra activities.

18a Time: 9:45—11:15 Workshop (90 minutes) Room 208 General Interest

Stories that Count: Math Lessons from Children's Literature

Marianne Plank, Author

A good story captures children's interest, adds to their understanding, connects mathematics to their experiences or imagination, and demonstrates how math applies to everyday situations. Presented by a mathematician and award winning children's author and award winning children's poet, this session explores the combination of both sound math concepts and good literature, exploring books that fill both requirements.

19 Time: 10:00 - 10:50 Session (50 minutes) Room 208 General Interest

How We Got Here: Common Core

Ron Larson, Professor of Mathematics, Penn State University at Erie

This talk traces the varying philosophies of teaching mathematics during the past 50 years in the United States. Beginning with Sputnik in 1957, the major reform movements in mathematics teaching are described, leading up to the development of the NCTM's "Focal Points" and the resulting **Common Core Curriculum**.

THURSDAY, NOVEMBER 10

20 Time: 10:00–10:50 Session (50 minutes) Room 109 General Interest
Differentiate Instruction with Interactive Computer Software

Ralph Hisle, Envision Technology

Combining two elements, good software and good use of the tools, we will demonstrate how teachers can extend their reach in teaching mathematics.

21 Time: 10:00 - 10:50 Session (50 minutes) Room 202 College
Proficiency in Proportional Reasoning and Success in Physics

Robert Cohen, East Stroudsburg University

Mary Anne Moore, East Stroudsburg University

Student success in physics classes was found to be related to their performance on a short math survey completed the first day of class.

22 Time: 10:00 - 10:50 Session (50 minutes) Room 204 Middle (5-8)
Spiders and Worms and Additive Inverses! Oh My!

Kate Remillard, Saint Francis University

Participants will first learn how to use spiders and worms to introduce additive inverses. We will then review additional models for integer operations and discuss their benefits/drawbacks.

23 Time: 10:00 - 10:50 Session (50 minutes) Room 205 Senior High (9-12)
Exploring Lunar Phases in Algebra 1

Eric Butterbaugh, Texas Instruments

The lunar cycle is one of the best examples of a one-to-one function in the natural world. We'll use TI-Nspire technology to analyze and interpret lunar data.

24 Time: 10:00 - 10:50 Session (50 minutes) Room 206 General Interest
PAEMST

Charlie Wayne, PDE

Information on the Presidential Award For Excellence In Mathematics And Science Teaching will be presented, including nominating, eligibility, the application process, and what to expect.

25 Time: 10:00 - 10:50 Session (50 minutes) Room 208 General Interest
Lessons from Research: What Research Does and Does Not Tell Us

Douglas H. Clements, SUNY Distinguished Professor, University at Buffalo, SUNY

The speaker will present four recent publications that he helped write-- the report of President Bush's National Math Advisory Panel; National Research Council Report on early mathematics; NCTM's Curriculum Focal Points; and the Common Core State Standards.

**Early Career Teacher Day
Friday, November 11, 2011**

Room: Senate

Co-Sponsored by PCTM and Texas Instruments

7:30-8:00 am *Leave One – Take One table* – All attendees are encouraged to browse the documents and to take copies of favorite mathematical tasks provided by area teachers. *Don't forget to pick up some snacks and coffee from the lobby on your way in to our session!*

8:00–8:10 am **Welcome and opening remarks**

Debbie Gochenaur, Shippensburg University

Michelle Switala, Pine-Richland High School

Welcome to the PCTM Conference! Special conference activities and opportunities designed specifically for early career teachers will be explained.

8:10-9:00 **Round Table Discussions**

An opportunity for early career teachers to share ideas with each other in areas such as working with students with special needs, implementing IEPs, reaching diverse populations, strengthening content knowledge, and encouraging parental involvement.

9:00 -11:30 pm **SAS Workshop**

11:30 – Noon **Luncheon** (*box lunches will be provided*)

Speaker: Jeff Chou, Highland Elementary School, **PDE 2011 Teacher of the Year**

This session will offer some guidance for those in the beginning stages of their careers on how to become a successful and effective mathematics teacher.

Noon – end of day **Attend afternoon sessions and workshops of choice, as well as the Exhibit Hall**

**Pre-Service Teacher Day
Thursday, November 10
Room 206**

- 7:30 AM Pick up registration materials
- 8:00 AM Introducing you to the conference and the conference to you
- 9:00 AM Attend sessions of your choice
- 12:00 noon Meet some friends, do math, talk math, have lunch*
- 3:00 PM “You Be the Stars” Poster Session**

*You may choose to simply grab your lunch and continue attending sessions.

** You must register to present a poster by October 1, 2011. See your math education professor for information about presenting a poster.

***You must register for Pre-Service Teacher Day by November 1, 2011.

**PA Association of Mathematics Teacher Educators
Friday, November 11, 2011
Room 112**

7:15am-7:50am PAMTE Executive Board Meeting

- Any PAMTE announcements stemming from this board meeting will subsequently and expeditiously be sent to members via the listserv.
- Any PAMTE members interested in helping to organize the Annual Symposium in May should contact Steve Williams (swillia6@lhup.edu) or Mike Long (malong@ship.edu) as soon as possible.
- Any Mathematics Teacher Educator wishing to become a member of PAMTE should contact Steve Williams (swillia6@lhup.edu) or Jane Wilburne (jmw41@psu.edu) or go to www.pamte.org for more information about our organization.

THURSDAY, NOVEMBER 10

26 Time: 11:00 – 11:50 Session (50 minutes) Room 109 General Interest

Great Patterns in Great Structures

Mike Long, Shippensburg University

Jonathan Hocker, Shippensburg University

Come and help us take apart some great geometric structures and discover some amazing sequences of numbers that appear.

27 Time: 11:00 - 11:50 Session (50 minutes) Room 202 Teacher Ed.

Implementing IBL Strategies in Mathematics Education Course

Yong Colen, Indiana University of Pennsylvania

The presenter will share the current research in IBL (Inquiry-Based Learning) in mathematics education, the salient implemented in his undergraduate mathematics education course, and explore some ramifications in preparing mathematics teachers.

28 Time: 11:00 - 11:50 Session (50 minutes) Room 204 Middle (5-8)

Stepping Closer to Slope

Kimberly Arp, Cabrini College

Come do a little stepping with slope using a motion sensor to collect distance data! Watch as the data is automatically graphed allowing for exploration and interpretation of slope and intercepts.

29 Time: 11:00 - 11:50 Session (50 minutes) Room 205 Senior High (9-12)

Pearson Math-a Common Core Solution

Todd Lindbloom, Pearson/Prentice Hall

Let's explore the Common Core State Standards initiative with Pearson/Prentice Hall. Together we can investigate and uncover solutions to help make your transition that much easier!!

30 Time: 11:00 - 11:50 Session (50 minutes) Room 206 General Interest

The Mathematics of Sacred Texts and Historical Landmarks

Jeffrey Fried, School District of Philadelphia (retired)

The mathematics used by diverse cultures & religious groups provides examples of the development of number systems. This is a survey of the history of mathematics and its development.

THURSDAY, NOVEMBER 10

31 Time: 11:00 - 11:50 Session (50 minutes) Room 208 General Interest

Bridging Research, Policy, and Practice

Vito Forlenza, Regional Educational Laboratory Mid-Atlantic

Brad Zdenek, Regional Educational Laboratory Mid-Atlantic

The Regional Educational Laboratory Mid-Atlantic is one of 10 regional labs across the United States. It has been bridging the research-practice gap between researchers and practitioners. We will focus on mathematics research available to practitioners.

32 Time: 11:30 - 1:00 Workshop (90 minutes) Room 104 Senior High (9-12)

Differentiated Instruction, Manipulatives, and Co-Teaching

Marian Avery, Great Valley High School

Explore the use of multiple representations and manipulatives to differentiate instruction on a high cognitive level in Algebra 1 while preserving high expectations of understanding and learning success for students.

33 Time: 11:30 - 1:00 Workshop (90 minutes) Room 105 General Interest

Problem Solving as a Principle Instructional Strategy

Bill Tobin, Muhlenberg School District

What good is math instruction if kids stink at problem solving? Learn how to use “low threshold - high ceiling” problems to help your students develop into patient, persistent and confident problem solvers.

34 Time: 11:30 - 1:00 Workshop (90 minutes) Room 106 Elementary (K-4)

Building Mathematical Discourse with Your Students

Gail Romig, State College Area School District; *Kristy Stroschein*, Park Forest Elementary; *Kelly Wright*, Ferguson Township Elementary; *Dotti Zembower*, Lemont Elementary; *Linda Marguisty*, Mount Nittany Elementary

A panel of experienced teachers will talk about the math talk in their K-5 classrooms. Participants will be asked to engage in mathematical talk.

35 Time: 11:30 - 1:00 Workshop (90 minutes) Room 108 Middle (5-8)

An Area Model for Dividing Fractions

Kim Johnson, Pennsylvania State University

Jeanne Shimizu, Pennsylvania State University

The presentation will allow participants to explore area models in terms of division of fractions: starting with area models of whole numbers and working towards and understanding of why we invert and multiply.

FRIDAY, NOVEMBER 11

108 Time: 1:00 - 1:50 Session (60 minutes) Room 208 Senior High (9-12)

The Real History of Imaginary Numbers

Steve Williams, Lock Haven University of PA

Most algebra teachers think that imaginary numbers arose from solving quadratic equations. However, by a strange quirk in history, mathematicians first found imaginary solutions that could not be ignored in formulas for solving a different kind of equation.

110 Time: 1:15 - 2:45 Workshop (90 minutes) Room 104 Middle (5-8)

Math Works: Games, Puzzles and Diversions to Stimulate Reasoning

John Hinton, Long Island University

Broaden your repertoire of games to build reasoning and problem solving skills in your students. Differentiate learning by using visual and tactile activities shared in this hands on workshop.

111 Time: 1:15 - 2:45 Workshop (90 minutes) Room 108 Middle (5-8)

Games as a Means of Engaging Students in Justifying

Jeanne Shimizu, Penn State University

We will play at least two different games that I have used as vehicles to engage students in justifying and introduce students to proof by exhaustion and proof by contradiction.

112 Time: 1:00—1:50 Session (50 minutes) Room 206 General Interest

“I hear and I forget. I see and I remember. I do and I understand.”

Rethinking the Mathematics Classroom

Amber Branch, Casio Education

Learn how to use ground breaking technology in our charge to prepare students to be viable, trail-blazers in the 21st century. How can we, as educators, attack STEM-driven curriculum from multiple fronts using technology that doesn't take over a math and science classroom, but enhances it, making an immediate impact on the way students comprehend science and mathematics - a critical component of not only succeeding, but surpassing STEM-related standards and expectations.



103 Time: 12:00 - 12:50 Session (60 minutes) Room 207 General Interest

Mathematics Homework for the 21st Century

Thomas Evitts, Shippensburg University

This session offers participants the opportunity to envision homework assignments that emphasize meaningful mathematics and connections, incorporate technology, promote problem solving and communication, and increase student learning!

104 Time: 12:00 - 12:50 Session (60 minutes) Room 208 Senior High (9-12)

Getting Started with TI-Nspire

Michael Houston, T3 - Teachers Teaching with Technology

Making the transition to a new handheld technology can be an intimidating undertaking. This session will give you the motivation to update to the 21st century teaching and learning tool. And let's not forget the mathematics!

105 Time: 1:00 - 1:50 Session (60 minutes) Room 204 Elementary (K-4)

Exciting Your Students for Change

Nancy Hoeft, Venango Catholic High School

Amy Schuster, Venango Catholic High School

This session will provide you with quick activities to use anytime as warm-ups, review, or even time fillers. Change your students' attitudes and boost their enthusiasm for math!

106 Time: 1:00 - 1:50 Session (60 minutes) Room 205 Senior High (9-12)

Transition: TI-84 to TI-Nspire

Michael Houston, Riverside High School

In this session, participants will use their knowledge of the TI-84 to improve their skills on the TI-Nspire. Lots of great activities will be used along with some good discussions.

107 Time: 1:00 - 2:00 Session (60 minutes) Room 207 General Interest

Great Problems With Many Spokes

Mike Long, Shippensburg University

Benjamin Robinson

Join us for a tour of some great problems which address multiple content and process standards all packaged and ready for you to use.

THURSDAY, NOVEMBER 10

36 Time: 12:00 - 12:50 Session (50 minutes) Room 109 General Interest

The Genius of Archimedes

Kathleen Acker, American University;

Robert McGee, Cabrini College; *Carol Serotta*, Cabrini College

The work of Greek mathematician Archimedes still excites scholars and students. We explore how his life and work are still relevant to the modern day mathematics classroom.

37 Time: 12:00 - 12:50 Session (50 minutes) Room 202 Teacher Ed.

Tasks within tasks: Engaging Pre-service Mathematics Teachers

Tenille Cannon, Penn State University;

Ben Freeburn, Penn State University; *Kim Johnson*, Penn State University

We will present pedagogical tasks used with pre-service mathematics teachers to engage them with transformative actions within a mathematical task implementation cycle consisting of written, intended, enacted, and evaluated phases.

38 Time: 12:00 - 12:50 Session (50 minutes) Room 204 Middle (5-8)

Hands-on Mathematics

Janet Walker, Indiana University of PA;

Megan Labant, *Derek Morf*, *Brianne Thomas*, *Toni Moeslin*, and

Brandon Kochinsky, Pre-service Teachers at Indiana University of PA

Pre-service teachers will share five activities for using in the middle school mathematics classroom. Each hands-on activity develops a mathematical concept from probability, geometry and/or algebra.

39 Time: 12:00 - 12:50 Session (50 minutes) Room 205 Senior High (9-12)

Using Toy Blocks to Illustrate Functions

Olivia Carducci, East Stroudsburg University

Understanding functions and function notation is necessary for success in college level mathematics. The presenter will use building blocks to illustrate several different types of functions and operations on functions.

40 Time: 12:00 - 12:50 Session (50 minutes) Room 208 General Interest

Common Core and Keystones - Where are we?

Jim Bohan, Intelligent Education LLC

This session will report on the status of transition to the Common Core Standards and the implementation and implications of Keystone exams. Discussion will include any certainties and best guesses as to the future. There will be ample time for discussion.

THURSDAY, NOVEMBER 10

41 Time: 12:00-12:50 Session (50 minutes) Room: Senate General Interest

Hook Them, Reel Them In, and Land Them!

Ronnie Voigt, The Pennsylvania State University

Jade Gross, Mifflin County School District

PSU student teacher strategies for hooks, lessons, and closures in mathematics. Get ready to use ideas/handouts that can be differentiated for grades 3-10 in math- plus super websites!

42 Time: 1:00 - 1:50 Session (50 minutes) Room 109 General Interest

Bringing World Class Mathematics to PA Classrooms

Tyrone Holmes, Houghton Mifflin Harcourt

Tony Piperno

We will discuss using the internationally acclaimed Singapore approach.

43 Time: 1:00 - 1:50 Session (50 minutes) Room 202 Teacher Ed.

Tell Me How to Operate with Fractions!!

Velma Yoder, Messiah College

Let's look at some of the effective ways to help our students reason and operate with fractions. We will look at the "What Works" recommendations and research, the Core Standards, and some practical examples for the classroom.

44 Time: 1:00-1:50 Session (50 minutes) Room 204 Elementary (K-4)

Higher Level Thinking and Problem Solving Through Storybooks

Jane Wilburne, Penn State Harrisburg;

Jane Kent, Penn State Harrisburg; *Mary Napoli*, Penn State Harrisburg

How can you pose higher level math questions and create problems that make students think using any storybook? This session will share strategies and examples.

45 Time: 1:00 - 1:50 Session (50 minutes) Room 205 Senior High (9-12)

I'm Going to be a Math Teacher: Why Didn't I Know this Before?

Steve Williams, Lock Haven University of PA

Provides participants with what a secondary math methods teacher has discovered are deficiencies concerning conceptual understanding of procedures and formulas. Most students confess that they "should have known these things a long time ago."

FRIDAY, NOVEMBER 11

99 Time: 12:00 - 3:00 Mini-course (3 hours) Room 105 Senior High (9-12)

Getting Students Inspired with Nspire

Kathleen McKinley, School District of Lancaster

Navigate the Nspire handheld, explore ways to use technology as a tool to promote conceptual understanding, make connections to implementing Common Core Standards, promote students as independent learners.

100 Time: 12:00 - 12:50 Session (60 minutes) Room 204 Elementary (K-4)

Parents' Reflections in Working with a 4th-Grader and His Mathematical Learning

Yong Colen, Indiana University of Pennsylvania

Jung Y. Colen, Indiana University of Pennsylvania

This presentation will share some parental challenges in developing and supporting fourth-grader's mathematical learning. The presenters will describe, with specific examples, how they attempted to augment the year-long, school curriculum.

101 Time: 12:00 - 12:50 Session (60 minutes) Room 205 Teacher Ed.

Online Support Communities for Beginning Teachers

Nina Girard, University of Pittsburgh at Johnstown

Online support communities can promote reflection and discussion among pre-service/beginning teachers. This communication can assist in mentoring and provide new teachers with practical professional knowledge leading to more effective instruction.

102 Time: 12:00 - 12:50 Session (60 minutes) Room 206 Senior High (9-12)

A Tale of Three Tangents

Stephen Kokoska, Bloomsburg University

The purpose of this presentation is to introduce some of the new features of the TI-Nspire CX CAS handheld in the context of a mathematical problem involving three special tangent lines to the graph of a cubic polynomial.



FRIDAY, NOVEMBER 11

95 Time: 11:30 - 1:00 Workshop (90 minutes) Room 104 Elementary (K-4)

Connecting Dominoes with the NCTM Standards

Patricia Gysling, West Chester University

Kathleen Jackson, West Chester University

Teach NCTM Content and Process Standards in K-4 using dominoes. Learn applications in Geometry, Number and Operation, Data, Probability, Algebra, Representation, Problem Solving and Reasoning.

96 Time: 11:30 - 1:00 Workshop (90 minutes) Room 106 Senior High (9-12)

Common Core Mathematical Practice Standards

Shiv Karunakaran, The Pennsylvania State University

Duane Graysay, The Pennsylvania State University

This workshop will provide a forum for discussing the Common Core Mathematical Practice Standards. Teachers will collaborate to reconceptualize and rework their own lesson plans in light of these Standards.

97 Time: 11:30 - 1:00 Workshop (90 minutes) Room 107 Middle (5-8)

L.E.A.P. Into SMART Notebook: Lessons, Explorations, Activities, Play!

Ginalouise Pflanz, Council Rock School District

Anna LaForgia, Council Rock School District

Are you using your SMART board to its full potential? Using SMART Notebook software, learn how to create games and lessons to enhance teaching. Leave with game templates and lessons.

98 Time: 11:30 - 1:00 Workshop (90 minutes) Room 108 Middle (5-8)

Using Foldables in the Mathematics Classroom

Joyce E. Cannone, Midwestern Intermediate Unit IV

Foldables are researched-based interactive graphic organizers developed by Dinah Zike to help students grasp process and content standards making it easier for students to understand concepts, theories, processes, and ideas.

THURSDAY, NOVEMBER 10

46 Time: 1:00 - 1:50 Session (50 minutes) Room 206 General Interest

A Look Into A Mathematical Tool Box

Ken Sullins, Mansfield University

What's in a Student's Mathematical Tool Box helps build mathematical success! Help your students create a strong, functioning tool box that will allow them to build a solid understanding.

47 Time: 1:00 - 1:50 Session (50 minutes) Room 208 General Interest

Keystone Exams and What's New at PDE

Charlie Wayne, PDE

The current state of the Keystone Exams will be presented and there will be discussion/Q&A about what's happening in the world of PDE as it relates to assessment.

48 Time: 1:00 - 1:50 Session (50 minutes) Room: Senate General Interest

Navigating Adoption of a New Math Program

Karen Yeager, Camp Hill School District

Camp Hill recently adopted "Math Expressions" as our elementary math program. After some rough seas, we are on a course of smooth sailing by working together collaboratively to make the program work for us.

49 Time: 1:00 - 4:00 Mini-course (3 hours) Room 112 Middle and Senior High

Math Modeling Across the Curriculum

Benamin Galluzzo, Shippensburg University

Join us to discuss how math modeling spans and bridges the NCTM Standards, the Common Core and your curriculum as we explore activities from middle grades through high school that encourage students to investigate how math applies to the real world.

50 Time: 1:15 - 2:45 Workshop (90 minutes) Room 104 Senior High (9-12)

Transforming Quadrilaterals and Their Changing Diagonals

Charlene Keen, Dauphin County Technical School

Participants make two models that demonstrate relationships occurring when quadrilaterals transform from parallelogram to rectangle or rhombus to square. There will be a technology section, diagonal lab, and vocational applications.

PCTM BUSINESS MEETING AND LUNCHEON

12:00 NOON—1:00 PM

President's 4

THURSDAY, NOVEMBER 10

- 51 Time: 1:15 - 2:45 Workshop (90 minutes) Room 105 Middle (5-8)
Four Culminating Activities that Each Integrate Multiple Math Topics

Terry Baylor, Shippensburg University (Retired)

We will taste jelly, calculate car costs, solve problems in teams, and race model cars in order to integrate statistical analysis, measurement, ratios, decision making, and problem solving.

- 52 Time: 1:15 - 2:45 Workshop (90 minutes) Room 106 Elementary (K-4)
Making It Fit

Celine Przydzial, Kutztown University

Participants will use pattern blocks to discover equivalence and size relationships, fractional representations, symmetry and perimeter concepts through hands-on activities.

- 53 Time: 1:15 - 2:45 Workshop (90 minutes) Room 108 Middle (5-8)
Going Deeper with Middle School Games and Activities

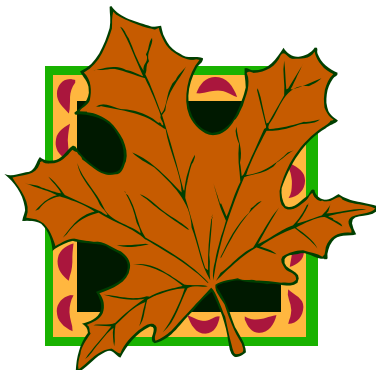
Larry Dorf, Big Ideas Learning, LLC

Teachers will experience going deeper in the middle school classroom by participating in engaging games and activities.

- 55 Time: 2:00 - 2:50 Session (50 minutes) Room 202 Teacher Ed.
Making a Case for the Heron's Formula to Find the Areas of Triangles

Yong Colen, Indiana University of Pennsylvania

The presenter advocates for incorporating the Heron's Formula into the school mathematics. The concept is accessible at the middle school level, and more precocious students--with teacher's guidance--can prove the formula at the secondary level.



FRIDAY, NOVEMBER 11

- 89 Time: 10:00 - 10:50 Session (50 minutes) Room 109 General Interest
Mixing Good Pedagogy with the Interactive White Board

Jim Preston, Slippery Rock University

Attendees will be presented with a framework for using the interactive white board in a pedagogically sound way. A number of lessons will be modeled.

- 90 Time: 11:00 - 11:50 Session (60 minutes) Room 204 Senior High (9-12)
Delayed Homework; What It Is and is Not!

Marian Avery, Great Valley High School

Delaying homework assignments until after the second day of instruction decreases student anxiety and increases student understanding and success. Unit outline examples and action research will be shared.

- 91 Time: 11:00 - 11:50 Session (60 minutes) Room 205 College
Enhancing Mathematics Understanding Through Literacy

Dawn Turkovich, Saint Vincent College

Kristin Harty, Saint Vincent College

This session will discuss how pre-service elementary teachers learned to enhance their mathematics instruction with the use of literacy activities.

- 92 Time: 11:00 - 11:50 Session (60 minutes) Room 206 Senior High (9-12)
Hands-On Approach to Mathematics

Thomas Waltrich, Gwynedd Mercy Academy High School

We will be using unconventional materials to demonstrate a variety of concepts for different levels of high-school math. Items include paper clips, silly putty, and the Rubik's cube.

- 93 Time: 11:00 - 11:50 Session (60 minutes) Room 207 General Interest
PA/18 = ?

Ben Galluzzo, Shippensburg University

Jonathan Hocker, Shippensburg University

How would you divide Pennsylvania into 18 congressional districts? Join us as we explore how topical real world problems are accessible to students across the curriculum.

- 94 Time: 11:00 - 11:50 Session (60 minutes) Room 208 General Interest
The Bird Olympics - Integrating Math and Science

Victoria Thornton, Juniata College

Melissa Kelly, Juniata College; Luke Waddell, Juniata College

Join us to discover what it is like for pre-service math and science students when they are given an interesting challenge. We created an integrated math and science field trip for a group of eighth graders using an unfamiliar topic --the song-birds of Pennsylvania.

FRIDAY, NOVEMBER 11

84 Time: 10:00 - 10:50 Session (50 minutes) Room 204 Elementary (K-4)

Mathematical Practices for Elementary Classrooms

Daniel Sidlenick, Consultant

Bruce Kazmire, Consultant

This workshop will provide an overview of the Common Core State Standards for Mathematics and will present strategies teachers can use to help their students meet these standards providing practical examples elementary teachers can implement.

85 Time: 10:00 - 10:50 Session (50 minutes) Room 205 Middle (5-8)

Building a Community of Mathematical Thinkers Through the Use of Math Olympiad Problems

M. Lynn Breyfogle, Bucknell University;

Susan Carroll, Ashkar Elementary, Julie Yeaker, Ashkar Elementary

We will explore problems provided by MOEMS, describe how these problems were used to create an environment of mathematical thinkers, and share experiences as coaches of 4th-6th grade teams.

86 Time: 10:00 - 10:50 Session (50 minutes) Room 206 Senior High (9-12)

Every Minute Counts in Professional Development Time

Donn Spatz, West Chester Area School District

This session will focus on a successful model that was used to make the most of limited professional development time for secondary math teachers using "Teaching Math for Learning in SAS."

87 Time: 10:00 - 10:50 Session (50 minutes) Room 207 General Interest

Integrating the History of Mathematics into the Classroom

Walter Orange, University of Pittsburgh at Greensburg

By integrating short segments on the history of mathematics into our lessons, we can help students to find our subject less abstract, more human, and more lively.

88 Time: 10:00 - 10:50 Session (50 minutes) Room 208 General Interest

The Interactive Math Classroom: Engaging Today's Learners

Melendy Lovett, President. Education Technology, Texas Instruments

Today's students need solid conceptual understanding of mathematics in order to develop the 21st century skills of problem solving, critical thinking, communication and collaboration. Technology can play an important role in supporting educators meet this goal by helping students visualize and understand complex concepts.

THURSDAY, NOVEMBER 10

56 Time: 2:00 - 2:50 Session (50 minutes) Room 204 Middle (5-8)

High Impact Techniques – Making Connections

Debbie Gochenaur, Shippensburg University

Kelly Kozain, Northern York High School

Finding high impact classroom techniques to enable disabilities students to succeed, with little additional prep time, is difficult. Specific techniques, with targeted learning deficits that each addresses, will be discussed.

57 Time: 2:00 - 2:50 Session (50 minutes) Room 205 Senior High (9-12)

Unite Patty Paper and Sketchpad to Increase Geometric Understanding

Charlene Keen, Dauphin County Technical School

Patty paper gives a hands-on approach to understanding geometry and Geometer's Sketchpad enables us to make extensions. Let's combine both techniques so that students have a better understanding of geometry.

58 Time: 2:00 - 2:50 Session (50 minutes) Room 206 General Interest

PA Statistics Poster Competition: Fun, Learning and Prizes for Your K-12 Students

Peter Skoner, Saint Francis University

Have your class participate in this fun learning experience. Students from grades K-12 can work in groups or individually to develop and submit displays that summarize data, provide different points of view, and answer questions about the data.

59 Time: 2:00 - 2:50 Session (50 minutes) Room 208 General Interest

The Mathematics of Motion: An exploration with the Asio Prizm Color Graphing Calculator

John Diehl, CaSIO Teacher Advisory Council

Falling rocks, water fountains, juggling peppers and even jumping fish--all of these move in predictable ways so that we can model the position. Let's explore heights, time, velocity and the paths they take by using graphs, tables, background pictures and many other features of this exciting learning tool.

60 Time: 2:00 - 2:50 Session (50 minutes) Room: Senate General Interest

Alternative Education: Helping Inner City Students with Real World Projects

Michael Ladick, Allegheny Intermediate Unit

Deal with some of the roughest and most challenging students? Come to this fast paced and fun seminar with examples of true differentiated instruction and project based education.

THURSDAY, NOVEMBER 10

61 Time: 3:00 - 3:50 Session (50 minutes) Room 105 Senior High (9-12)

Illuminate and Clarify Variables and Behavior of Functions with Sketchpad

Scott Steketee, KCP Technologies

Students needn't struggle with domain, range, composition, and inverses. They can create geometric functions, drag input points to determine output points, and trace compositions and inverses.

62 Time: 3:00 - 4:30 Workshop (90 minutes) Room 104 Senior High (9-12)

Using Formative Assessment to Check Student Understanding

Marian Avery, Great Valley High School

Utilizing formative assessment daily gives quick and immediate feedback on the level of student understanding and mastery. Interactive examples, lists of formative assessments used, and book references will be given.

63 Time: 3:00 - 4:30 Workshop (90 minutes) Room 106 Elementary (K-4)

Bring World Class Mathematics to Your Classroom

Patsy Kanter, HMH Specialized Curriculum (Houghton Mifflin Harcourt)

Making Every Day Count Using World Renowned Singapore Strategies and Calendar Math to Build First-Class Mathematics Girls and Boys in Pennsylvania.

64 Time: 3:00 - 4:30 Workshop (90 minutes) Room 108 Elementary (K-4)

Look in the Mira

Dave Kennedy, Shippensburg University

The MIRA is a classic manipulative for developing understanding of geometric ideas in grades 2-5. Use a MIRA to flip faces, rotate letters, check sketches for symmetry, and do simple constructions.



FRIDAY, NOVEMBER 11

80 Time: 9:45 - 11:15 Workshop (90 minutes) Room 104 Elementary (K-4)

Math Matters: Games, Puzzles and Diversions to Develop Reasoning

John Hinton, Math Matters, Inc.

Stimulate student thinking skills by using games to teach concepts in number, geometry, and algebra. Participants will use games to integrate basic skills and analytic reasoning.

80a Time: 9:45-11:15 Workshop (90 minutes) Room 109 General Interest

See Math in a New Light

John Diehl, CTAC President

Discover how utilizing Natural Textbook Display, along with color technology, allows for a truer mathematics focused classroom where the technology enhances teaching and student learning – not overtaking it.

81 Time: 9:45—11:15 Workshop (90 minutes) Room 106 Senior High (9-12)

Powerful Technology = Powerful Mathematics

Dan Ilaria, T3 - Teachers Teaching with Technology

"Some mathematics is possible because technology allows it." If you enjoy mathematics, this is the place for you! See the diversity, beauty, and wonder of mathematics shine with the help of TI-Nspire CX CAS.

82 Time: 9:45 - 11:15 Workshop (90 minutes) Room 107 Teacher Ed.

Incorporating Student Writing to Deepen Their Understanding

Stephen Cicioni, Retired Classroom Teacher

Participants will be engaged in activities and writing prompts suitable for middle school and high school math classes. Three types of prompts will be demonstrated: descriptive, procedural, and conceptual.

83 Time: 9:45 - 11:15 Workshop (90 minutes) Room 108 Middle (5-8)

Making Algebra Child's Play (R)

Evelyn Riley, Borenson and Associates, Inc.

Learn a visual and kinesthetic approach to teaching algebraic concepts to students in grades 3-8.

FRIDAY, NOVEMBER 11

75 Time: 9:00 - 9:50 Session (50 minutes) Room 204 Elementary (K-4)

How Is Arithmetic Related to Algebra?

Sheri Stayton, Lewisburg Area School District

This presentation will make important connections between basic arithmetic and algebra. I will explore ideas on how to promote algebraic thinking and number sense in students before they study algebra.

76 Time: 9:00 - 9:50 Session (60 minutes) Room 205 Middle (5-8)

Using Historical Mathematicians to Differentiate

Sam Smith, Council Rock School District, *Dr. Julie Eastburn*

Motivate students through the study of Carl Gauss and Sophie Germain, along with other famous mathematicians. This session will help participants discover how studying history can develop computational fluency and problem solving strategies.

77 Time: 9:00 - 9:50 Session (50 minutes) Room 206 Senior High (9-12)

Reading across the Curriculum:

Reading Skills in the Secondary Mathematics Curriculum

Alyce Baker, Lock Haven University

Educational reformers have been advocating reading across the curriculum. Using a theoretical framework for supporting interdisciplinary reading, the talk will focus on practical strategies that can be used in the secondary mathematics classrooms.

78 Time: 9:00 - 9:50 Session (50 minutes) Room 207 General Interest

Developing Mathematics Academic Language

Harold Asturias, Director Center for Excellence and Equity in Mathematics, University of California, Berkeley

We will discuss several strategies for using mathematics concepts to help students, particularly ELLs, develop Academic Language and explore the Standards for Mathematical Practice. These standards can be used as a framework for giving ELLs opportunities to use multi-modal communication while doing mathematics.

79 Time: 9:00 - 9:50 Session (50 minutes) Room 208 General Interest

The Shape of Geometry and The Geometry of Shape

Zalman Usiskin, Professor Emeritus, The University of Chicago, Director, University of Chicago Mathematics Project

In geometry, "shape" is usually mentioned informally with similar figures and not given a formal definition. This talk argues that the geometry that we teach is essentially the geometry of shape, and that approaching similarity through transformations, integrating geometry with algebra, inserting applications and using technology can be viewed as ways in which our conception of "shape" has changed.

Pre-Service Teacher Day Poster Showcase

3:00 PM—4:30 PM

Break Area

It's a new dimension for Pre-Service Teacher Day at the PCTM 2011 Annual Conference! Pre-Service teachers will present posters sharing a favorite field experience related to math, a favorite teaching idea, a lesson plan that went well (or not so well) and what they learned, or a favorite math topic. Stop by and interact with these future math teachers.

PCTM BANQUET AND GUEST SPEAKER

6:30 PM—9:00 PM

Banquet Room

Connecting Mathematics and Language

Harold Asturias, Director Center for Excellence and Equity in Mathematics, University of California—Berkeley

Students need access to the language of mathematics to deepen their understanding of the concepts they are learning. We will explore why English is so hard and why academic language is an essential part of understanding mathematics.



FRIDAY, NOVEMBER 11

65 Time: 8:00—8:50 Session (50 minutes) Room 204 Elementary (K-4)

Why Can't My Students Learn Their Basic Facts?

James Preston, Slippery Rock University

Attendees of this session will learn some of the reasons why students struggle to learn their basic facts when taught with the traditional model. Alternative methods of instruction will be shared.

66 Time: 8:00 - 8:50 Session (50 minutes) Room 205 Middle (5-8)

Middle School Mathematics is Changing. Are you ready?

Kristine Hobaugh, Carnegie Learning, Inc.

The Carnegie Learning Math Series: Courses 1-3 provide research-based and engaging instruction to help all middle school students master math concepts and skills. The curricula were developed to align to the new Common Core Standards for Mathematics.

67 Time: 8:00 - 8:50 Session (50 minutes) Room 206 Senior High (9-12)

180 Days of Fun!

Bob Stover, Calvert Catholic HS

My students have taught me well the past 36 years.
Challenge problems, puzzles, games and even a song!
Come on in and have some fun.

68 Time: 8:00 - 8:50 Session (50 minutes) Room 207 General Interest

ALEKS and First in Math Online Programs

Mark Losey, ALEKS + First in Math Online Programs;

Jim Johnston, Ebner Elementary, Altoona; Anne Saclaro, Altoona SHS

First in Math®, www.firstinmath.com: Over 325,000, K-8, PA students are playing. This includes 24®GAME, basic fact fluency, test-prep, competition.

69 Time: 8:00 - 8:50 Session (50 minutes) Room 208 General Interest

Sharing Your Great Ideas---in Print!

M. Lynn Breyfogle, Bucknell University;

Tom Evitts, Shippensburg University; Dave Kennedy, Shippensburg University
Ever considered sharing your ideas with a wider audience? Come learn tips and suggestions for publishing your work from editors of PCTM's "Magazine" and "Yearbook", and NCTM's "Teaching Children Mathematics".

FRIDAY, NOVEMBER 11

70 Time: 8:00 - 9:30 Workshop (90 minutes) Room 104 Middle (5-8)

Blocks and Paper: Minimum Materials, Maximum Mathematics

Anna LaForgia, Council Rock School District;

Gina Pflanz, Council Rock School District

Construct understanding and connect knowledge of angles, fractions, algebra, and more with just blocks and paper. Transform your perspective of these simple items as you engage in mathematically rich problem-based tasks and discussion.

71 Time: 8:00 - 9:30 Workshop (90 minutes) Room 106 Senior High (9-12)

Unit Origami and Three-Dimensional Models in Geometry

Marian Avery, Great Valley High School

Unit Origami, 30-60-90 Triangle, Pythagorean Theorem, isosceles triangles, surface area and volume of a prism come together in a triangular hexahedron. Original classroom tested activity worksheets shared.

72 Time: 8:00 - 9:30 Workshop (90 minutes) Room 107 General Interest

Sundials

James Troutman, York College

Building sundials for use in the classroom.

73 Time: 8:00 - 9:30 Workshop (90 minutes) Room 108 Middle (5-8)

Exploring Primes, Factors, and Multiples in the Elementary Classroom

Jay Schiffman, Rowan University

The primes are the atoms of the counting integers. Participants will explore activities involving primes, factors, and multiples using manipulatives including color tiles and the graphing calculator.

73a Time: 8:00-9:30 Workshop (90 minutes) Room 109 General Interest

How Dare You Question My Questions

Amber Branch, Casio Education

Making small changes to move past good questioning strategies and teaching with context, to fostering use of technology so students can explore and process information to encourage asking their own "good questions" that will better prepare them for their future mathematics classes.

74 Time: 8:00 - 11:00 Mini-course (3 hours) Room 105 Senior High (9-12)

Addressing Classroom Diversity

Kathleen McKinley, School District of Lancaster

Learn ways technology might be used to differentiate instruction at all levels. Use of TI Navigator and TI 84+ graphing calculators will be incorporated. Participants will benefit whether or not they have Navigator Systems. Please bring your graphing calculator.