

MLSN Summer '09 Academy



8:30 – 9:30

Registration and Breakfast
Provided

Key Note

9:00 – 10:15

Ruth Casey

Technology in the Teaching, Learning, and Assessment of Algebraic Thinking

What is the role of technology in today's mathematics classroom? How is it used in curriculum, instruction, and assessment? How can technology be used effectively as a tool for learning algebraic reasoning? Come learn about, and share, answers to these questions. In a hands-on session, we will explore some interesting activities from TI Algebra Nspired and other resources.

Ruth Casey received her undergraduate degree in mathematics from the University of Kentucky and her Masters' Degree in secondary education from Georgetown College. She is a National Board Certified Teacher in *Adolescent and Young Adult Mathematics*. After completing 29 years of teaching middle and high school mathematics, Ruth now works as a professional development consultant. She maintains her contact with teachers and students through her work with PIMSER (Partnership Institute for Math and Science Education Reform) at the University of Kentucky, and serves as a workshop instructor for Texas Instruments. She has also been working the Texas Instruments' *Algebra Nspired* and *Geometry Nspired* Pilot Programs.



Ruth has received the Presidential Award for Excellence in the Teaching of Mathematics, has been recognized as a Tandy Scholar, and was selected as a Christa McAuliffe Fellow. She was chosen as a recipient of the 2004 Leadership Award from the T³: Teachers Teaching with Technology program. She has been on the development team for professional development materials for T³ and was an author for the Glencoe © 2010 Algebra 1 & Algebra 2 books. Ruth was one of the twelve teachers selected to serve on the first Teacher Advisory Council of the National Academy of Sciences and was a member of the Board of Directors for the National Council of Teachers of Mathematics.

10:30 – 11:45

Day 1, Session 1

Let's Play – (Elementary Strand) A1

Vonda Stamm

Games are a great way to build number sense and fact fluency. Come experience some games geared to engage your students.

Interactive Integers – (Middle School Strand) A2

Jane Hunt

Participants will explore a variety of contexts, models, and metaphors that facilitate learning integer concepts and operations.

Day 1, Session 1

Problem Solving in Number and Operations – (High School Strand) A3 Jim Moore
Number pervades all areas of mathematics. The other four Content Standards as well as all five Process Standards are grounded in number. This session will focus on building new mathematical knowledge in Number and Operations through problem solving. Good problems give students the chance to solidify and extend their knowledge and to stimulate new learning. Most mathematical concepts can be introduced through problems. You will work and explore problems from the high school level of the Program of Studies, Number and Operations strand.

EPAS – (Assessment Strand) A4 Ann Booth and Tami Pickett
Incorporate strategies into your school and classroom to help students' performance on the Explore, Plan, and ACT.

Lenses on Learning – (Leadership Strand) A5 Rhonda Allen
This session is an overview of a professional development model for administrators and other instructional leaders. *Lenses* provides a framework for participants to study how students learn mathematics, how to support teacher growth in math content and pedagogy, etc. Principal cadres develop a better understanding of *looking fors* to strengthen school/department mathematics programs.

Primary Fractions – (Previous MLSN Problems) A6 Tolene Pitts
Participants will examine strategies to help primary students develop understanding of fractions.

Round and Square Houses – (Previous MLSN Problems) A7 Terry Parkey
This is the story of the traditions of a family through the eyes of Osa and her grandmother. In a village in the Cameroons in Central Africa, the women live in round houses and the men in square houses. In this session we will compare the round and square houses of the village.



11:45 – 12:30

Lunch
Provided

12:30 – 1:45

Day 1, Session 2

Domino Math – (Elementary Strand) B1 Tolene Pitts
Can primary students make connections? Why should they? Experience an investigation with dominoes.

“Probably” Number Sense – (Middle School Strand) B2 Gloria Beswick
Join us in determining the probable outcome of a basketball game when the final score is riding on a 1-and-1 foul shot. Participants will be engaged this problem which connects probability concepts with number sense and reasoning in a basketball context. The TI-73 calculator will be used as a tool for exploring the problem.

Matrices – (High School Strand) B3 Ann Booth
Take a conceptual look at how matrices can enrich students' number sense in your classroom. Find the true meaning of how matrices are used and what the entries really mean.

Change Leadership – (Leadership Strand) B4 Rhonda Allen
Participants will wrap up the '08-'09 study of Change Leadership. We will examine the last few chapters of the book (7-10) and discuss strategies and next steps for implementing change in mathematics teaching/learning.

Microsoft Word – (Technology Strand) B5

Jim Moore and Tami Pickett

Have you always wanted to create professional looking teacher documents? Come learn how to use Word with tables, pictures, text boxes, equation editor, and more.

Day 1, Session 2

TI-Nspire – (Technology Strand, Middle and High School) B6

Ruth Casey

In this hands-on session, participants will learn about the “Action/Consequence/Reflection” lessons that are an integral part of the TI-Nspired™ classroom. We will explore the activities and resources that are part of the *Algebra Nspired* and *Geometry Nspired* programs. Using pre-made TI-Nspire files in a technology *microworld*, students interact with multiple representations as they investigate important mathematical concepts.

2:00 – 3:15

Day 1, Session 3

Developing Algebraic Thinking – (Elementary Strand) C1

Rhonda Allen

Strategies for developing a foundational understanding of algebraic concepts. By making intentional connections between number sense and algebraic thinking, teachers can help students transition to higher level mathematical reasoning.

Using the Calculator to Support Learning – (Elementary Strand) C2

Jane Hunt

Join us in discovering the calculator as a tool, another strategy for problem solving, not merely a number crunching machine.

Functions in Multiple Ways - (Middle School Content Strand) C3

Terry Parkey

Algebraic thinking and reasoning in the middle grades include solving problems in context, tables, graphs and equations. As students work with relationships among the representations, they develop a better understanding of functions. Multiple representations on the TI 73 calculator, with an introduction to the TI-73 Smart View, will be included.

Let's Play – (Middle/High School Strands) C4

Vonda Stamm

How many times have you heard, “I don’t have time to play games with my students?” During this session you will take a look at games that help build number sense, and leave you saying, “I don’t have time not to play games with my students?”

15 Fixes for Broken Grades – (Assessment Strand) C5

Gloria Beswick and Tami Pickett



Participants will extend the '08 – '09 discussion of How to Grade for Learning by examining Ken O’Conner’s 15 Fixes for Broken Grades. We will look at specific strategies that can be used in your classroom to help make grades better reflect student progress toward meeting the standards.

“Jump Frog” - (Previous MLSN Problem) C6

Ann Booth

Explore an adventure in Algebraic Thinking from Kindergarten through High School.

The TI-Nspire as Co-teacher - (Technology Strand) C7

Jim Moore

This session will look at a familiar lesson using the TI-Nspire/TI-Nspire Computer Software. The session will serve as an example of the use of the TI-Nspire Computer Software as a way to connect Geometry, Algebra and Data Analysis to facilitate conceptual learning. This lesson or similar lessons could be used with your existing computer and multi-media projector. The lesson could also be done with each student using a TI-Nspire calculator. No prior knowledge of the TI-Nspire is assumed. This session could serve as a good introduction to this calculator and the software.

Day 2



8:30 – 9:30

Registration and Breakfast

Provided

9:00 – 10:15

Day 2, Session 1

Let's Play – (Elementary Strand) D1
Repeat of session A1.

Vonda Stamm

Functions in Multiple Ways - (Middle School Content Strand) D2
Repeat of session C3.

Terry Parkey

Matrices – (High School Strand) D3
Repeat of session B3.

Ann Booth

Change Leadership – (Leadership Strand) D4
Repeat of session B4.

Rhonda Allen

Exploring Apps on the TI73 – (Technology Strand) D5

Gloria Beswick



This “hands-on” session will give participants an opportunity to experience the various APPS available for the TI-73 calculator. We will discuss management of the APPS, and how these APPS can be used for instruction in the middle school mathematics classroom.

Pyramids Using GeoGebra - (Previous MLSN Problem) D6

Jim Moore

This session can serve as a good introduction to GeoGebra. It is also a good activity while studying the volume, the surface area, and the parts of a pyramid. This session is 100% one-on-one with the computer and the GeoGebra software. The activity allows the student to become up close and personal with the apothem, height, and slant height of a pyramid before finding the volume or surface area of the pyramid.

Developing Number Sense in Young Children – (Elementary Strand) D7

Rolanda Grubbs and Beverly Heady

This session is an introduction to What's My Space?, What's My Value, AND Reading and Writing the Language of Numbers.

Participants will learn how these daily routines draw upon the child's ability to think visually by using interactive visual models, grids, and dots to develop concepts related to place value as well as many other mathematical concepts.

10:30 – 11:45



Day 2, Session 2

Poly and the Shape Shifter – (K-12 Strand...MLSN 06-07 Activity) E1

Vonda Stamm

What's the relationship between the of sides of a polygon and the number of diagonals? Join Poly as she goes from a triangle to an n-gon, and see what happens to her diagonals.

Domino Math – (Elementary Strand) E2

Tolene Pitts

Repeat of session B1.

Interactive Integers – (Middle School Strand) E3

Jane Hunt

Repeat of session A2.

Problem Solving in Number and Operations – (High School Strand) E4

Jim Moore

Repeat of session A3.

15 Fixes for Broken Grades – (Assessment Strand) E5

Gloria Beswick and Tami Pickett

Repeat of session C5.

Deconstructing Standards and Learning Targets – (Leadership Strand) E6

Rhonda Allen

Strategies for “unpacking” math teaching/learning standards. How do we get our department and/or grade-level teams on the same page with instructional goals, “big rocks,” and student-friendly “I Can...” statements?

Using CBR's – (Technology) E7

Ann Booth

Collecting data with a CBR is a sure way to hook students. Come experience several ways to do this.



11:45 – 12:30

Lunch
Provided

12:30 – 1:45

Day 2, Session 3

Using the Calculator to Support Learning – (Elementary Strand) F1

Jane Hunt

Repeat of session C2.

Developing Algebraic Thinking – (Elementary Strand) F2

Rhonda Allen

Repeat of session C1.

Developing Algebraic Thinking – (Elementary Strand) F2

Rhonda Allen

Repeat of session C1.

“Probably Number Sense” - (Middle School Content Strand) F3

Gloria Beswick

Repeat of session B2.

The Power of 10 – (Middle Strand) F4

Vonda Stamm

Join us as we roll out an overview of our prevention/intervention material for middle school students. Participants familiar with the One-to-One Project will notice the similarities.

Day 2, Session 3

TI-84 Series – (High School and Technology Strand) F5

Tami Pickett

Explore basic uses for the TI-84 including basic operations, Apps, settings, and more. Whether you are self-proclaimed guru, or barely know how to turn the device on and off, there will be something for you.

Primary Fractions – (Previous MLSN Problem) F6


Tolene Pitts

Repeat of session A6.

TI-Nspire – (Technology Strand, Middle and High School) F7

Ruth Casey

Repeat of session B6.



2:00 – 3:15

Day 2, Session 4

Process Standards – (Elementary Strand)

Tolene Pitts

What type of questions can lead primary students to Reasoning and Proof? Experience some of the questions presented in The Math Process Standards Series.

Building Rafts – (Middle School Strand) G1

Terry Parkey

Have you ever used Cuisenaire Rods? Come build rafts with Cuisenaire Rods to explore surface area and volume. We will collect and represent the data using the TI-73 calculator.

Arnie and Prancer – (Previous MLSN Problem...Elementary/Middle Strand) G2

Rhonda Allen

Participants will look at developing conceptual understanding of perimeter and area formulas with Prancer the Perimeter Pony and Arnie the Area Aardvark.

Let's Play – (Middle/High School Strands) G3

Vonda Stamm

Repeat of session C4.

EPAS – (Assessment Strand) G4

Ann Booth and Tami Pickett

Repeat of session A4.

Exploring Apps on the TI-73 – (Technology Strand) G5


Gloria Beswick

Repeat of session D5.

The TI-Nspire as Co-teacher - (Technology Strand) G6

Jim Moore

Repeat of session C7.



Make and Take Center – (Location for this set-up will be posted at the academy.) H1

AccuCut machines and laminating machines will be available for your use, along with all the die cuts.

Prepare by bringing your foam, card stock, construction paper, etc.

In addition, a library of books, which provide possible literature connections, will be available for viewing.

Session Organizer

Day	Session/Room		Session/Room		Session/Room		Session/Room	
1	Keynote							
2								