2006 I³ Conference for Teachers of Mathematics
I³ = Intensive Immersion Institutes

A grass-roots event of local teachers, by local teachers, and for local teachers

Wednesday, March 15, 2006
3:00 p.m. – 6:00 p.m.

Four Points Sheraton, Leominster, MA

This Conference is organized by teachers involved in a Massachusetts Mathematics and Science Partnership (MMSP - Fitchburg Public Schools, Gardner Public Schools, Leominster Public Schools, EduTron Corporation, M.I.T., and Fitchburg State College) supported by a grant from the Massachusetts Department of Education.

Conference Chair: Laureen Cipolla
LCipolla@leominster.mec.edu (978) 534-7700 x309

Conference logo design: Sara DiPilato w/ Sean Walker
http://www.edutron.com/I3_Math_Conf/

Come and connect with fellow professionals if you...

- feel isolated as an educator, connected only to your students and grading?
- have a bag of tricks (in math) to share?
- have challenging or oddball topics containing good math and want to share?
- need alternative ideas and approaches for removing student confusion?
- know a fantastic approach, book, software, or web-site that leads to student success?
- wish there were a math conference locally so you could just pop in after school?
- wonder what the analyses of student assessments mean?
- want time to talk “math” with colleagues?

I³ Conference Committee
Megan Arseneau
Jill Baker
Linda Breau-Norman
Andrew Chen
Laureen Cipolla
Charlene Cormier
Lee Cormier
Paula Cox
Sara DiPilato
Elaine Francis
Jeannine Gallant
Catherine Goguen
Paula Giaquinto
Cindy Haudel-McNeil
Teresa Huminski
Carol Hynes
Lance Johnson
George Johnston
Michelle Lattanzio
Kathleen Lizotte
Dick Lavers
Mike Lavers
Kai Liu
Sherri Nordhaus
Arthur Norman
Mark Pierce
Elaine Previte
Donna Sorila
Eileen Spinney
Deborah Squires
Dick Vaughn
Sean Walker
Marcella Wojdylak
2006 i^3 Math Conference, March 15, 2006, Leominster MA

Conference Program 2006

There are three Sessions: A, X, Y and Z:

Session A is for "Science-Fair" type presentations to be held in Brahms and Beethoven.

Sessions X, Y and Z are parallel oral presentations to be held in Cole Porter, Gershwin, and Irving Berlin.

Session X00
Brahms and Beethoven
3:00 – 3:15

Welcome
Lauren Cipolla, Conference Chair, Leominster I^3 Conference Committee and MMSP Planning Team

Session X01
Cole Porter
3:20 – 3:50

YODA Math

Niel Albero, Elm Street School, Gardner
Michelle Lattanzio, Elm Street School, Gardner
Kathleen Lizotte, Elm Street School, Gardner
Charlene Cormier, Elm Street School, Gardner
Alan Dernalowicz, Elm Street School, Gardner

Abstract
How do you begin to create a math community for teachers in your school? Use Your Own Districts Assets (YODA)! This presentation will describe how one school used their own math expertise and began creating a math community by holding weekly math sessions after school for all teachers who wanted to sharpen their math skills. You will learn how to implement such classes and foster math learning among teachers in your school.

Session X02
Insider Report: K-12 Education in India, Japan, Kenya, and Taiwan (a panel discussion)

Cole Porter
4:00 – 4:40
Oral

Panel Chair: George Johnston, EduTron, Winchester
Andrew Chen, EduTron, Winchester
Jacqueline Macharia-Hagan, Luther Burbank Middle School, Lancaster
Sheila Ravikumar, Methuen High School, Methuen
Ravi Ravikumar, Lucent Technologies

Abstract
What are learning and teaching like in other parts of the world? Come and find out a few things from the panelists. They have firsthand experience with the education systems in India, Japan, Kenya, and Taiwan. How are teachers treated? What are parents like? Do they have high-stake tests like MCAS? What do their textbooks look like? Do they have SPED? What about learning culture and expectations? Bring your own data, information, and questions. We will compare notes.

Session X03
What Happens After the Initial EduTron Impact? One Attempt to Carry On

Cole Porter
4:50 – 5:20
Oral

Arthur Norman, Reingold Elementary, Fitchburg

Abstract
Anyone who has taken one of the EduTron workshops knows exactly what I mean when I say, "EduTron has given us all a great model, wonderful experiences, and energy." How does a school continue that momentum?
The purpose of this 30 minute presentation is to share the attempt by Reingold Elementary School staff to sustain that enthusiasm and spirit by initiating a weekly staff math workshop/club to explore math concepts, use math language, and strengthen math skills. Any program originating from the EduTron model is not passive. Be prepared to get involved as we discuss our program and challenge you to participate!
**Session X04**

**Using Content Splashes to Connect and Communicate in Math Class**

Cole Porter  
5:30 – 6:00  
Oral

**Abstract**

Teachers will actively participate in this session as they learn how using concept splashes and other graphic organizers can help students (as well as adult learners) activate and build on their prior math content knowledge.

Various strategies for incorporating the Rule of 4 (Tables, Graphs, Equations, and Words) into math class everyday will be modeled using examples from the middle school and high school algebra and geometry standards.

Participants will be given access to more than 60 graphic organizers created by Leominster teachers and summer institute participants for use in math class as well as directions for creating their own.

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**Oral Session Y**

**Session Y01**

**24 ® Game and Beyond**

Gershwin  
3:20 – 3:50  
Oral

**Abstract**

The 24 ® Game is a unique mathematics teaching tool that has evolved over the past 16 years and successfully engages students in grades 1 through 9 from diverse economic and social backgrounds. Students start by focusing on basic math facts and can progress to higher level games that involve fractions, decimals, exponents, and algebra. This half hour presentation will give you an overview of many of the card decks available as well as an introduction to the Mathematics Club Classroom Kits, Tournament Materials, the First In Math® Online Mathematics Program, and Classroom Incentives.

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**Session Y02**

**NCS Math Mentor: An Open-Response Assessment and Learning Tool**

Gershwin  
4:00 – 4:40  
Oral

**Abstract**

Assessment In The Standards-Based Classroom

Participants Will:

*Experience solving open-response math problems
*Develop skills for examining and assessing levels of student work based on a rubric
*Become familiar with the NCS Math mentor tool and learn how it can be used as a tool for examining and scoring student work

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**Session Y03**

**Can We Reduce Gender Differences in Mathematics through a Problem-Based Approach to Instruction?**

Gershwin  
4:50 – 5:20  
Oral

**Abstract**

Gender differences on standardized tests of mathematics have persisted despite numerous attempts to eradicate them. One theory of these differences identifies a lack of strategic flexibility among females that impedes their performance on standardized tests of mathematics. If this is the case, perhaps a change in instructional practices from a rules-based approach to a problem-solving approach would not only yield better outcomes for all students, but also level the playing field for female students.
**Integrating Art Into Your Math Curriculum**

**Gershwin**

5:30 – 6:00

Judith Gemborys, Overlook Middle School, Ashburnham-Westminster Regional

**Abstract**

Bring learning alive! Come experience your own creativity and incorporate art into your math classroom. Lessons on the areas of squares, rectangles, and triangles can result in ginormous snowflakes; teach symmetry by making African masks; have you ever inserted a ruler into a bubble to measure its radius? Come blow bubbles using a straw and find out about radius, circumference, and area. If you draw a shape on paper, do you know how to enlarge the shape using a rubber band and then compare the two areas? Lesson plans will be provided so you can incorporate into your classroom the very next day!

**All Equilateral Triangles are Green, and Other Math Misconceptions**

**Irving Berlin**

4:50 – 5:30

Richard Lavers, Fitchburg Public Schools, Fitchburg

Eileen Spinney, Fitchburg Public Schools, Fitchburg

**Abstract**

How can we identify and address some of the common misunderstandings that kids have about math? Participants will examine some of the most common and potentially most obstructive math misconceptions students develop.

According to new research, many students have misconceptions about mathematics—sometimes called "naïve theories"—that can turn them into clumsy learners. Students do not come to the classroom as "blank slates" (Resnick, 1983). Instead, they come with theories constructed from their everyday experiences. They have actively constructed these theories, an activity crucial to all successful learning. Some of the theories that students use to make sense of the world are, however, incomplete half-truths (Mestre, 1987).
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<th>Session A03</th>
<th>Popcorn in the Classroom</th>
<th>K-8</th>
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<tr>
<td>Brahms and Beethoven</td>
<td>Terry Dorsey, Memorial Middle School, Fitchburg</td>
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**Abstract**

Several fiction and nonfiction titles are used as a springboard for lesson plan ideas integrating all curriculum areas for grades K-8. "Popcorn" is the key component that brings these lessons together. Get some fresh ideas that you may bring back to your classroom and use tomorrow.

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<tr>
<th>Session A04</th>
<th>Real World Math</th>
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<tbody>
<tr>
<td>Brahms and Beethoven</td>
<td>Jean Beckner, Memorial Middle School, Fitchburg</td>
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**Abstract**

The presentation will focus on lesson plans that incorporate Mathematics concepts and skills in Grade 6 Social Studies classes, and that meet Massachusetts' Curriculum Frameworks standards for both subjects. Ways to prepare for Grade 6 MCAS Math questions in World Geography class will be explored. When students understand that Math is everywhere in their world, they will no longer need to ask, “Why are we doing Math in Social Studies class?”

<table>
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<tr>
<th>Session A05</th>
<th>Your Chances of Meeting a Dark, Handsome King Are 2 IN 52 !</th>
<th>4-6</th>
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<tbody>
<tr>
<td>Brahms and Beethoven</td>
<td>Doreen Allen, Memorial Middle School, Fitchburg Beth Porell, Memorial Middle School, Fitchburg</td>
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**Abstract**

It is fair to predict that when you visit this site it will not be because of random chance. It is likely you will be using cards, dice, or coins to determine probability. It is unlikely that you will be disappointed with the outcome.

<table>
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<th>Session A06</th>
<th>Games that Will Enhance Math Skills</th>
<th>5-8</th>
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<tr>
<td>Brahms and Beethoven</td>
<td>Joyce Baker, B.F. Brown Arts Vision School, Fitchburg</td>
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**Abstract**

These games are filled with fun and excitement that help students sharpen math skills, adding, subtracting, multiplying, division, angles, and fractions.

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<th>Session A07</th>
<th>What IS So Very Special about Right Triangles?</th>
<th>5-8</th>
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**Abstract**

Originally created as an after school math & quilt sewing program, this presentation has mini lessons in mathematics which can be adapted for most grade levels. Students used only right triangles to design and create a 9 square quilt block pillow. The Massachusetts Curriculum Frameworks Strands addressed include: Visual Arts – elements of art & design, methods, materials and techniques; Mathematics – patterns, relationships, algebra, geometry and measurement; Health -- Interpersonal relationships with adults & peers; Use of computer applets for designing quilt block.

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<th>Session A08</th>
<th>Analyzing And Representing Linear Relationships</th>
<th>7-9</th>
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<tr>
<td>Brahms and Beethoven</td>
<td>Gokhan Berkman, Sky View Middle School, Leominster Sonja Kuokkanen, Sky View Middle School, Leominster</td>
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Massachusetts Math and Science Partnership

Fitchburg, Gardner, Leominster, EduTron Corp, M.I.T., & Fitchburg State College
Abstract
This presentation shares some student work of a project that was given to Grade 8 students. Each student's work displays an original situation that has a linear relationship and also reflects how the relationship is represented by algebraic, tabular, and graphical ways.

Session A09
Geome Tree Island
Brahms and Beethoven
3:00 – 6:00
Judith Giles, Gardner Middle School, Gardner
Barbara Yablonski, Gardner Middle School, Gardner
Jeannine Gallant, Gardner Middle School, Gardner

Abstract
Arghh, mateys! Welcome to Geome Tree Island! While you are here, you will be asked to solve six easy and six challenging problems while you learn about the pirates who inhabited this mathematical land. Puzzle pieces will be awarded in return for correct solutions. By completing and assembling the puzzle, you "may" discover the location of a hidden treasure chest. And if you do, it's yours to keep! Arghh!

Session A10
Multiple Intelligences and Math
Brahms and Beethoven
3:00 – 6:00
Deborah Hooper, South Street School, Fitchburg
Jane Ledoux, South Street School, Fitchburg

Abstract
"How can I get my children to understand and remember what we are doing in math?" It's a question you may often ask yourself. This display will give you some ideas about how to use Howard Gardner's Multiple Intelligences theory in your math classroom.

Session A11
Advanced Student Directed Mathematics Research
Brahms and Beethoven
3:00 – 6:00
Sean Walker, Memorial Middle School, Fitchburg

Session A12
Math Inclusion for All Types of Learners
Brahms and Beethoven
3:00 – 6:00
Lisa Wyman, B.F. Brown Arts Vision School, Fitchburg
Debbie King, Memorial Middle School, Fitchburg
Kim Bacon, Bf Brown Arts Vision School, Fitchburg

Abstract
Today's' classrooms are a mix of diverse learners with differing abilities and learning styles. Differentiating instruction so that all students can be successful is a lot of work, but the rewards is worth the efforts. Three Special Education teachers have brought together strategies and materials they use to help students access the Massachusetts Curriculum Frameworks. Many of the strategies can be applied right away in your own classrooms.

Session A13
"Graduating" with Number Sense
Brahms and Beethoven
3:00 – 6:00
Katie Schmitt, Fitchburg High School, Fitchburg
Patti Aube, Reingold School, Fitchburg
Lee Cormier, Reingold, Fitchburg
Lance Johnson, Memorial Middle School, Fitchburg

Abstract
Thinking of the equal sign as a balance! This significant concept has a foundation that gets built in elementary school and progresses through graduation day (and beyond). Sample equations and student work will be shared to demonstrate how and where it happens from grades 1 through 12.
Session A14  The Language of Mathematics  6-8
Sarah Perkins, Academy Middle School, Fitchburg
Melissa McKenna, Academy Middle School, Fitchburg

Abstract
We would like to focus on showing how English Language Arts and Mathematics can be incorporated in an interdisciplinary way. Our project will deal with the language used to describe mathematical problems and solutions as well as how math can be used in an English Language Arts classroom. The primary target of our project will be sixth, seventh, and eighth grade ELA classes, but our methods should be applicable for all grades.

Session A15  Math Grahams  3-6
Charlene Cormier, Elm Street School, Gardner
Michelle Lattanzio, Elm Street School, Gardner
Sherri Nordhaus, Elm Street School, Gardner

Abstract
Learn math skills with yummy graham crackers! Teach your students geometry, computation, fractions and metric measurement in a fun creative way. Begin your lesson with graham cracker fractions right out of the box. Design and build 3-D graham shapes and geobread houses while learning measurement concepts. Teach your students area and perimeter while using scale drawings to design the graham home of their dreams. Students will learn to follow directions, work cooperatively and write about their math experiences.

Session A16  Scrapbooking - It's All About the Math  2-12
Susan Marshall, Academy Middle School, Fitchburg
Hilary Sparks, Academy Middle School, Fitchburg

Session A17  Visual Imagery and Multiplication  3-4
Joan Feehan, St. Anthony School, Fitchburg

Abstract
How do I get my students to memorize their multiplication facts? Visual Imagery is the answer. My presentation will address interesting ways to remember facts.

Session A18  Tools of the Trade  5-8
Aimee LeBlanc, BF Brown, Fitchburg
Michelle O’Leary, BF Brown, Fitchburg

Abstract
This presentation will share strategies that assist all learners, including SPED and ELL, through application problems.

Session A19  Birdhouse "Nets"  5-7
Deb Squires, Sky View, Leominster

Abstract
*This project involves two and three dimensional geometry, spatial visualization, problem solving, surface area, and scale models.
*Students will explore hexominoes and prisms, form nets, and create a birdhouse. Extensions can be made to find...
volume and weight of each birdhouse and density.

Session A20
Brahms and Beethoven
3:00 – 6:00
poster

Reading & Math Stars Summer 2006 Workshop
K-4

Bonniejean Boettcher, Worcester Polytechnic Institute, Worcester

Abstract

Come learn about an exciting opportunity for K-4 faculty this summer at WPI through our Reading & Math Stars program. Participants in this one week workshop will design lessons and assist in the development of Reading & Math Stars, a K-4 program comprised of short language arts and hands-on mathematics activities based on a diverse set of historical characters.