

# Math in Action 2008 Program

## Session A: 8:30 - 9:30 am

### A1 Everyday Math Games

Michael Klann, McGraw Hill/Wright Group

These games provide basic math practice and help differentiate instruction. The playing of these games will improve children's attitudes about mathematics as well as to improve achievement among low achievers. Grades K - 6

### A2 Junk Food Wars

Mary Richardson, Diann Reischman, GVSU Statistics

The speakers will present four interactive 'junk-food-based' activities that can be used to illustrate: descriptive statistics, regression, ANOVA, and inferences on means for paired data. Grades 9 - 12+

### A3 Provide Success with Purposeful Practice!

Carol Lukeman, ETA Cuisenaire

Discover a hands-on manipulative that provides practice and reinforcement in math. Explore self-correcting learning activities that engage students at various levels in the classroom. Grades K - 8

### A4 Human Graphing

Roger Patrick, GRAPCEP High School, Grand Rapids Public Schools

Teachers will learn methods of teaching graphing of linear, quadratic, and exponential functions using students as plotting points. They will also learn how human graphing helps students to create understanding of the various forms of graphs. Grades 9 - 12

### A5 KC4 and the Mathematics HSCE

Ruth Moxon, Kent ISD

Local districts have been responding to the Michigan Mathematics HSCE in a variety of ways. See how one ISD has responded on behalf of its local districts to develop the KC4 Mathematics curriculum, aligned to the Math HSCE content, and incorporating assessments and best practices of instruction. Handouts of a sample unit. Grades 9 - 12

### A6 Creating a Personal Timeline Using Rational Numbers

Elizabeth Lund, Anastasia Batsios, GVSU Students

Here's a lesson where learning about rational numbers is personal, creative and fun. Taken from an MTMS article, students create timelines using rational numbers to represent dates of events before and after their birth. Hear how this was taken from article to classroom and the reflection that comes with it. Grades 6 - 8

### A7 Free the Turtles

Michael McDaniel, Aquinas College

The programmable turtles of StarLogo provide an engaging introduction to writing and debugging programs because the turtles move, draw, breed, live and die. The turtles model logistic and exponential growth and decay, along with more complicated population patterns. Their drawings can illustrate geometrical structures. StarLogo is a free program! Grades 6 - 12+

### A8 Questions, Answers, and Conversation: Issues for New Elementary and Middle School Teachers

Panel Discussion

This panel discussion will focus on issues relevant to new elementary and middle school teachers. Panelists will include both new and experienced K-8 teachers, and there will be ample opportunity to ask questions. This session is ideal for teachers who are just beginning their careers and for pre-service teachers who would like to gain insight into what to expect during their first few years of teaching. Grades K - 8

### A9 Making Meaning through Problem Solving

Esther Billings, Dave Coffey, GVSU Mathematics

Explore how reading comprehension strategies described in Mosaic of Thought (2007) can apply to problem solving in mathematics. Come ready to participate in a problem-solving workshop; we'll explore how our ability to monitor our own thinking informs problem solving and what this approach might look like in the K-6 classroom. Grades K - 6

## Session B: 9:45 am - 10:45 am

### B1 Questions, Answers, and Conversation: Insight from an Administrator

Nick Ceglarek, Fruitport Community Schools

In this informal session, Nick Ceglarek, a former math teacher and currently the superintendent of Fruitport Community Schools, will share his insights and experiences as a teacher and administrator. Much of the session will be devoted to answering questions from participants. Grades K - 12+

### B2 Two Activities for Incorporating Statistics into the Math Curriculum

John Gabrosek, Phyllis Curtiss, GVSU Statistics

Participants will engage in hands-on learning activities that illustrate connections between statistics and the grades 7-12 math curriculum. Two activities will use the TI calculator to connect sampling and probability to concepts in algebra and geometry. Grades 6 - 12

### B3 Probing for Place Value

Mary DeYoung, Allison Pautler, Hope College

Stop-Look-and Listen-to Children. The process of interviewing children can provide an important window into their thinking about number and operations. This interactive video session will explore how we can help children to make sense of the foundational ideas of our tens system. Grades PreK - 3

### B4 Building Number Sense...What, Why and How?

Mike Klavon, Ottawa Area ISD

This session will explore what number sense is, why it is important and how to develop it throughout early elementary school. Instructional strategies and resources that help build number sense in kindergarten and 1st grade (based on Michigan's GLCEs) will be discussed and shared throughout this presentation. Grades K - 3

### B5 G.I.F.T.S. (Great Ideas For Teaching Students)

Feryal Alayont, Nancy Alexander, Dave Coffey, Pam Wells, and John Golden

GVSU Mathematics

In this interactive round-robin session, facilitators will share innovative ideas that they successfully use in their classes to help students get the most out of reading and homework assignments, and in-class activities. Handouts will be provided. Grades 9 - 12

### B6 Math Games and Strategy Analysis

Gary Talsma, Calvin College

We'll play a couple of "old favorites": Sprouts and Taxman. How can mathematics help us develop effective strategies for these games? (Code for a Taxman program for TI calculators will be provided.) Grades K - 6

### B7 Mayan Math

Marge Friar, GVSU Mathematics

Learning about the Mayan numeration system can be a source of cultural pride for those with a Central American heritage, increase historical awareness, assist in understanding the base-ten number system, and provides opportunities to practice mental mathematics. At the conclusion of the session, you will be able to write numbers and perform some computations using Mayan numerals. We will use manipulatives. Grades 3 - 12

### B8 The Mathematics of Hawaii

Charlene Beckmann, Nicole Kildau, GVSU Mathematics

There are many connections between mathematics and the volcanoes, flora, and culture of Hawaii. In this session, we will share pictures and activities suitable for middle school students. Mathematics connections include slope, linear and exponential functions, surface area and volume. Grades 6 - 8

## General Session: 11:00 am - 12:00 pm

### Glenda Lappan, Michigan State University

#### Supporting Students' Learning to Think and Reason in Mathematical Situations

We will examine mathematical situations from strands of mathematics in the current Michigan Mathematical Expectations. As we examine the example of a problem situation from each of number, algebra, geometry, probability and statistics we will look at the classroom support students need to tackle the problem. The practical resources we will examine promote ways of exploring the situation mathematically—manipulatives, mathematical representations, technological support, and teacher support through questioning.

## Lunch Break: 12:00 - 1:00 pm

## Session C: 1:00 - 2:00 pm

### C1 Where the Sidewalk Ends, Math Begins

Joanne Caniglia, Eastern Michigan University

This presentation will use the poetry of Shel Silverstein to showcase meaningful mathematics activities. From taking out the garbage with Sarah Sylvia Stout to out"Smarting" by counting coins, you will experience the magic of one of America's favorite poets. Grades K - 6

### C2 Preparing All High School Graduates for Additional Learning

Beth Ritsema, Western Michigan University

We will consider mathematics content recommendations by different organizations including the College Board (SAT), Achieve, the American Statistical Society, Adding it Up, and the Michigan Mathematics Curriculum Framework. Commonalities recommended for developing mathematical proficiency will be discussed. Curriculum examples to help fulfill these recommendations from Core-Plus Mathematics will be examined. Grades 6 - 12+

### C3 Kixels!

Matthew Wyneken, University of Michigan - Flint

A "kixel" is a pixel only bigger and, yes, we use Kix® - they work surprisingly well to approximate the area of everything from a circle to the State of Michigan. This hands-on activity session about the conservation of area will change the way you teach this concept. Grades 6 - 12+

### C4 Questions, Answers, and Conversation: Issues for New Secondary Teachers

Panel Discussion

This panel discussion will focus on issues relevant to new secondary mathematics teachers. Panelists will include both new and experienced high school teachers, and there will be ample opportunity to ask questions. This session is ideal for teachers who are just beginning their careers and for pre-service teachers who would like to gain insight into what to expect during their first few years of teaching. Grades 9 - 12

## Session C (continued): 1:00 - 2:00 pm

### C5 Don't Slow Me Down with that Calculator (Part 1)

*Cliff Petrak, Brother Rice H.S., Chicago (retired)*

Learn to master a multitude of little-known, super-shortcut computational techniques and strategies involving addition, subtraction, fractions, squaring and multiplication that will leave your calculator-dependent friends in the dust. This is the first of 2 sequential sessions and will concentrate on speed techniques involving addition, subtraction, and fractions.

Grades 3 - 12

### C6 Math Games for Skill and Understanding

*John Golden, GVSU Mathematics*

Games from several sources for use in K-5 classrooms. Why use games, how to use games effectively, and what to look for in your games.

Grades PreK - 6

### C7 A Surprising Connecting between Mathematics and Presidential Elections

*Ted Sundstrom, GVSU Mathematics*

The various apportionment methods that have been used throughout history for the U.S. House of Representatives will be discussed, and we will discuss why the presidential election of 1876 was decided by an illegal apportionment method. Mathematics and history - go figure! Please bring a calculator.

Grades 9 - 12+

### C8 New Software Tools Supporting New Expectations for High School Mathematics

*Nicole Lanie, Western Michigan University*

Explore the teaching and learning possibilities offered by the new CPMP-Tools software. Participants will have an opportunity to engage in using this software as it relates to the Statistics, Geometry, and Algebra strands. Investigative activities will be centered around using a data analysis tool, an interactive drawing program, and a computer algebra system (CAS) to address some of the Michigan High School Content Expectations. Participants will have free access to this exciting computer software.

Grades 9 - 12

### C9 Helping Students Reconcile Visual and Symbolic Representations for Multiplication of Fraction Contexts

*Jeanna Duimstra, Jenison Public Schools*

*Pam Wells, GVSU Mathematics*

We will explore 5th and 6th grade students' thought processes as they struggle to integrate their algorithmic knowledge of fraction operations with pictures they draw to solve multiplication & division problems set in a context. Key fraction concepts and how they relate to student work will be shared.

Grades 3 - 8

## Session D: 2:15 - 3:15 pm

### D1 Motivating Mathematics with Mime

*Timothy Chartier, Davidson College*

Tim Chartier, a professor of mathematics and professionally trained mime, uses pantomime to motivate mathematical ideas. This workshop will consist of 1) demonstrations of performance pieces used to motivate mathematical ideas, 2) simple mime techniques that can foster discussion about mathematical topics such as estimation and number sense, and 3) pointers on utilizing mime for anyone interested in using the art in teaching.

Grades K - 6

### D2 What a drag! (Using MSWord to Explore the Continuity of Scaling)

*Dana Cox, Western Michigan University*

Scaling a triangle is one thing—scaling the letter S is another. Come take a modern look at the concepts of similarity and scale. Font size and clip art are sources of complex figures which can be scaled in numerous ways to help students visualize scaling as continuous, all-over growth.

Grades 6 - 12

### D3 Teaching Math Through the Use of Bases

*Chris Carter, Reeths-Puffer Schools*

Learn to teach children how to count, borrow and carry through the use of different base numbers. Children can learn what they are actually borrowing and carrying using bases. The can also learn what place value really means.

Grades K - 6

### D4 Functions-Based Approach to Algebra I

*Charlene Beckmann, Nicole Kildau, GVSU Mathematics*

The Michigan Merit Curriculum for Algebra I is functions-based. How might the course be organized so that student understanding of functions builds naturally on linear functions? The presentation will share a coherent approach to functions aligned with the Michigan Merit Algebra I Curriculum. The approach is generalizable to more advanced functions.

Grades 9 - 12

### D5 Don't Slow Me Down with that Calculator (Part 2)

*Cliff Petrak, Brother Rice H.S., Chicago (retired)*

Learn to master a multitude of little-known, super-shortcut computational techniques and strategies involving addition, subtraction, fractions, squaring and multiplication that will leave your calculator-dependent friends in the dust. This is the second of 2 sequential sessions and will concentrate on speed techniques involving squaring and multiplication.

Grades 3 - 12

### D6 The Math Curse: Differentiated Instruction in Mathematics

*Keith Trampler, GVSU Graduate*

Each student is unique and should be given the chance to express their knowledge in their own unique way. In each session we will take a look into differentiated instruction and equity in the classroom based on a lesson from the book "The Math Curse" by Jon Scieszka.

Grades 6 - 8

### D7 Questions, Answers, and Conversation: GLCEs and HSCEs - Adapting to Changing Expectations

*Panel Discussion*

This panel discussion will focus on the State of Michigan Grade Level Content Expectations and High School Content Expectations. Panelists will share ways to adapt and thrive within the context of these changing expectations, and there will be ample opportunity to ask questions.

Grades K - 12

### D8 Activities for Introducing the Idea of Division

*Jan Koop, Calvin College*

We will explore ways to provide a firm foundation for students' understanding of the concept of division, long before they memorize division facts or the long division algorithm. We'll use a variety of activities and children's literature.

Grades K - 6

# Mathematics in Action Registration Form



(One registration per form...duplicate as needed - this form AND online registration are also available at [www.gvsu.edu/math/MathInAction](http://www.gvsu.edu/math/MathInAction))

<b>Name</b>		<b>Last 4 digits of Social Security Number</b>			
<b>Address</b>		<b>City</b>		<b>Zip</b>	
<b>Daytime Phone ( )</b>		<b>Email</b>			
<b>Name of School</b>		<b>School District</b>		<b>Grades Teaching Now</b>	
<b>Gender</b>		<b>Ethnicity</b>			
Male ___ Female ___		African-Am ___ Asian-Am ___		Caucasian ___ Hispanic ___ Native-Am ___ Other _____	
<b>Participant Category (please select one choice from the two rows of boxes below)</b>					
<b>Teacher</b> <input type="checkbox"/>	<b>Student</b> <input type="checkbox"/>	<b>Administrator</b> <input type="checkbox"/> (your title) _____		<b>School Board</b> <input type="checkbox"/>	<b>Parent</b> <input type="checkbox"/>
<b>Community Member</b> <input type="checkbox"/>	<b>Business/Industry</b> <input type="checkbox"/>	<b>Legislator</b> <input type="checkbox"/>	<b>Other (specify)</b> _____		

(Place appropriate session code in blank)

### Confirmations will be emailed.

**NOTE:** Sessions offered more than once are marked with an \*.

Ask your school if professional development funds are available.

**Session A:**

\_\_\_\_\_ 1<sup>st</sup> Choice

\_\_\_\_\_ 2<sup>nd</sup> Choice

**Session B:**

\_\_\_\_\_ 1<sup>st</sup> Choice

\_\_\_\_\_ 2<sup>nd</sup> Choice

**Session C:**

\_\_\_\_\_ 1<sup>st</sup> Choice

\_\_\_\_\_ 2<sup>nd</sup> Choice

**Session D:**

\_\_\_\_\_ 1<sup>st</sup> Choice

\_\_\_\_\_ 2<sup>nd</sup> Choice

Enclose your registration fee of \$27.00 per teacher/educator \$11.00 per preservice teacher (make checks payable to GVSU) and mail this completed registration form postmarked by **February 15, 2008** to:

RMSC - MIA  
328 Henry Hall  
Grand Valley State University  
1 Campus Drive  
Allendale, MI 49401

### Online Registration is available at:

[www.gvsu.edu/rmsc](http://www.gvsu.edu/rmsc) **OR** [www.gvsu.edu/math/MathInAction](http://www.gvsu.edu/math/MathInAction)

**Amount enclosed:** \_\_\_\_\_ Check \_\_\_ or Credit Card \_\_\_

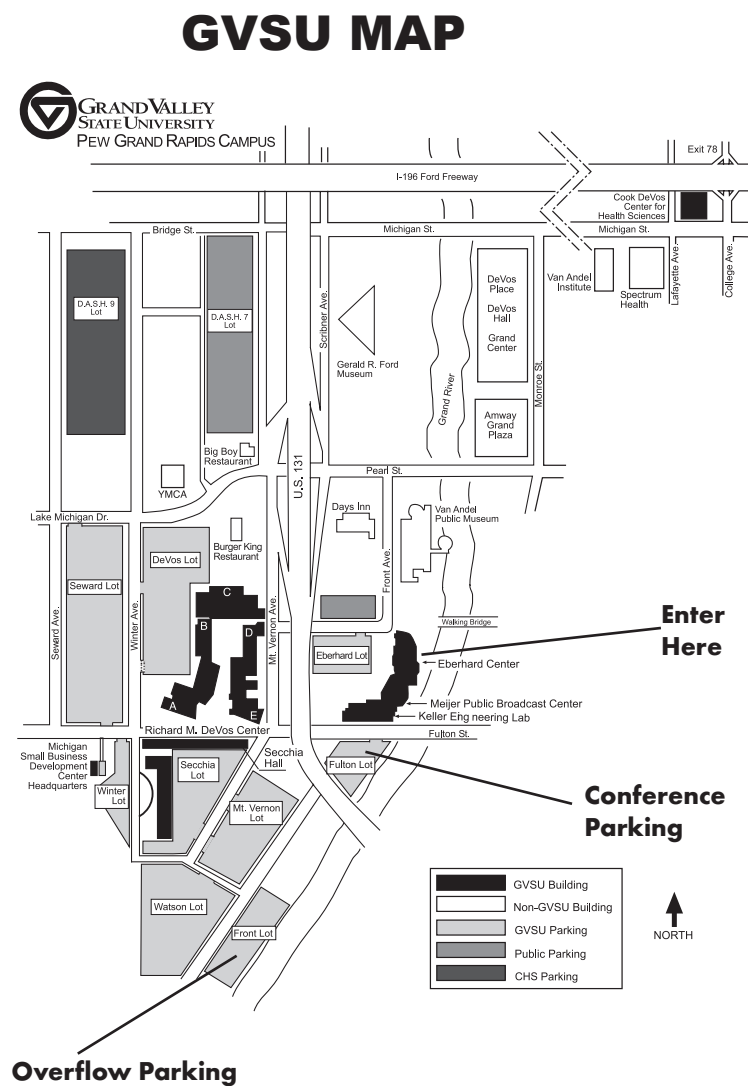
CC Number: \_\_\_\_\_

Expiration date: \_\_\_\_\_

Signature: \_\_\_\_\_

# Math in Action Schedule

8:00 - 8:30 am	Registration and Refreshments 2nd Floor lobby, Eberhard Center
8:30 - 9:30 am	Breakout Session A Conference Facilities, Eberhard Center
9:45 - 10:45 am	Breakout Session B Conference Facilities, Eberhard Center
11:00 am - 12:00 pm	General Session Auditorium, Eberhard Center
12:00 - 1:00 pm	Lunch 2nd Floor Lobby, Eberhard Center
1:00 - 2:00 pm	Breakout Session C Conference Facilities, Eberhard Center
2:15 - 3:15 pm	Breakout Session D Conference Facilities, Eberhard Center



**From US-131 Northbound:** Take the Pearl St. Exit, #85B. Turn left (west) onto Pearl Street (which becomes Lake Michigan Drive). Go two blocks; turn left on Winter Ave. Take Winter south to light at Fulton St. Turn left on Fulton, follow roughly two blocks under US-131 and enter the Fulton Lot on your right.

**From US-131 Southbound:** Take the Pearl St. Exit, #85B. Turn right (west) onto Pearl Street (which becomes Lake Michigan Drive). Go one block; turn left at first intersection on Winter Ave. Take Winter south to light at Fulton St. Turn left on Fulton, follow roughly two blocks under US-131 and enter the Fulton Lot on your right.

**From I-196 East/West:** Take the Ottawa Ave/Downtown Exit, #77. Follow Ottawa Ave. through downtown til it dead-ends into Fulton St. Turn right onto Fulton. Proceed roughly three blocks across the river til just before the US 131 overpass. Turn left into the Fulton Lot marked Conference Parking.

Overflow parking is available in the Front Lot noted on the map above.

January 3, 2008

Dear Educator,

You are cordially invited to attend this year's Math in Action Conference, hosted by Grand Valley State University, on Wednesday, February 27, 2008. This conference exists to provide a venue for mathematics educators in West Michigan to grow professionally by coming together, sharing ideas, and learning from experts. The theme of this year's conference is "Practical Resources for Real Classrooms," and our goal is to provide practical insights and resources for educators at all levels of K-12 mathematics. Our hope is that this conference will bring together educators with diverse experiences in an environment in which best practices can be shared and new ideas can be generated.

We are excited to welcome Dr. Glenda Lappan, University Distinguished Professor of Mathematics at Michigan State University and former president of the National Council of Teachers of Mathematics, as our keynote speaker. Dr. Lappan's address, "Supporting Students' Learning to Think and Reason in Mathematical Situations," will highlight resources for developing students' problem solving and mathematical reasoning skills in a variety of content areas. In addition to Dr. Lappan's address, this year's program features four breakout sessions that run throughout the day. Each breakout session consists of approximately eight presentations, workshops, or panel discussions, all running in parallel. Presenters will share activities and ideas relevant to K-12 teachers, and many sessions will encourage participants to explore these ideas interactively while gaining resources that can be adapted for use in their own classrooms.

Besides directions to the conference site, this brochure contains a detailed schedule of presentations and a registration form. (Note that the deadline for registration is February 15, 2008.) Please share this brochure with your colleagues who may be interested in attending, and feel free to download additional brochures at <http://www.gvsu.edu/math/MathInAction>. Your questions and comments are welcomed by the conference co-chairs, who may be reached at the addresses below.

Sincerely,

Jonathan Hodge  
Co-chair, Math in Action  
[hodgejo@gvsu.edu](mailto:hodgejo@gvsu.edu)

Nancy K. Mack  
Co-chair, Math in Action  
[mackn@gvsu.edu](mailto:mackn@gvsu.edu)

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# Mathematics in Action

## "Practical Resources for Real Classrooms"

a conference for K-12 mathematics educators



Wednesday, February 27, 2008



The Eberhard Center  
The Robert C. Pew Campus  
in downtown Grand Rapids  
Grand Valley State University  
Wednesday, February 27, 2008  
8:30 am - 3:15 pm



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[www.gvsu.edu/math/MathInAction](http://www.gvsu.edu/math/MathInAction)