

# 15<sup>th</sup> Annual Users' Conference

## Connected Mathematics

February 24 & 25, 2012



### Michigan State University

Kellogg Hotel & Conference Center  
55 S. Harrison Road  
East Lansing, MI 48824

### Highlights:

Agenda at a Glance	2
Breakout Descriptions	4
Facilities Map	9
Certificate of Completion	10
Future Conferences	11

---

Connected Mathematics  
A-715 Wells Hall  
Michigan State University  
517.432.2870  
[connectedmath.msu.edu](http://connectedmath.msu.edu)

**BREAKOUT SESSIONS AT-A-GLANCE**  
**15<sup>TH</sup> ANNUAL CMP USERS' CONFERENCE, 2012**

**Friday, February 24<sup>th</sup>**

	Room 103AB Classroom	Room 104AB Classroom	Room 101 Classroom	Room 106 Classroom	Heritage Room Classroom
<b>8:00–8:15 A.M., Introductions: <i>Elizabeth Phillips, Lincoln Room</i></b>					
<b>8:15–9:15 A.M., Reasoning &amp; Sense Making: The “Core” of the Standards for Mathematical Practice. <i>J. Michael Shaughnessy, NCTM President &amp; Professor Emeritus, Portland State University</i></b>					
<b>9:30– 10:45 A.M.</b>	<b>1.</b> Investigating the Importance of Models in Developing Efficient Algorithms <i>Droll/Robinson</i>	<b>2.</b> Formative Assessment in CMP with ASSISTments <i>Hefferman/Towle</i>	<b>3.</b> Data In CMP: Implications for Changes from the CCSS <i>Friel</i>	<b>4.</b> Planning for & Implementing a Summary that Supports the Mathematical Practices <i>Butki/Devine</i>	<b>5.</b> Becoming a CMP Teacher <i>Alsbaugh/Dole</i>
<b>11:00 A.M.– 12:15 P.M.</b>	<b>6.</b> Building Understanding through Connections while Managing Time Effectively <i>Porath/Schmitt</i>	<b>7.</b> GeoGebra: Dynamic Geometry Software for <i>Kaleidoscopes, Hubcaps &amp; Mirrors</i> <i>Towle</i>	<b>8.</b> Creating an Environment in which the Mathematical Practices Come Alive <i>Keusch</i>	<b>9.</b> What I Do with the Mathematical Reflections <i>Grant</i>	<b>10.</b> Implementing CMP 2: Teacher Concerns & Possible Solutions <i>Graham</i>
<b>12:15–1:30 P.M., Lunch with Round Table Discussions Related to Implementing &amp; Teaching CMP, Lincoln Room</b> <i>(Meal: Salad, Breast of Chicken Marsala, Rice Pilaf, &amp; Chocolate Mousse Cake)</i>					
<b>1:45– 3:00 P.M.</b>	<b>11.</b> Supporting Students in Developing Deep Understandings of Operations with Rational Numbers <i>Callard</i>	<b>12.</b> Differentiated Instruction <i>Keusch</i>	<b>13.</b> Pushing the Mathematics in <i>Growing, Growing, Growing</i> <i>Porath</i>	<b>14.</b> Assessment in the CMP Classroom <i>Neuse</i>	<b>15.</b> A Recipe for Preparing a Successful CMP Lesson <i>Wohlgelegen</i>
<b>3:00–3:15 P.M., Break</b>					
<b>3:15– 4:30 P.M.</b>	<b>16.</b> CMP2 in Title I Schools <i>Neuse</i>	<b>17.</b> Looking for More Connections in Connected Math <i>Droll/Robinson</i>	<b>18.</b> Standards for Mathematical Practice: Where are the Opportunities for Teachers & Students (6 <sup>th</sup> grade) <i>Gordon/Devine</i>	<b>19.</b> Let's Create a Summary Together! <i>Dole</i>	<b>20.</b> An Example of How the CCSS Mathematical Practices Play Out in a CMP Unit <i>Newquist</i>
<b>4:30–5:45 P.M., Reception and Prize Drawing in Lincoln Room</b>					

**Please read detailed descriptions of talks for more information.**

**BREAKOUT SESSIONS AT-A-GLANCE**  
**15<sup>TH</sup> ANNUAL CMP USERS' CONFERENCE, 2012**

**Saturday, February 25<sup>th</sup>**

	Room 103AB Classroom	Room 104AB Classroom	Room 101 Classroom	Room 106 Classroom
<b>7:30–8:00 A.M., Continental Breakfast, Lincoln Room</b>				
<b>8:00– 9:15 A.M.</b>	<b>21.</b> Grades—How Do They Help? How Do They Hurt? <i>Porath/Schmitt</i>	<b>22.</b> Standards for Mathematical Practice: Where are the Opportunities for Teachers & Students (8 <sup>th</sup> grade) <i>Devine/Halligan</i>	<b>23.</b> Formative Assessment Lessons for Learning <i>Bouck</i>	<b>24.</b> Five Practices for Orchestrating Productive Discussions <i>Callard</i>
<b>9:30– 10:45 A.M.</b>	<b>25.</b> How I Know What My Students Know & What I Do About It <i>Nicoll-Turner</i>	<b>26.</b> What If...? —The Role of Questioning in Developing Understanding <i>Grant</i>	<b>27.</b> Understanding the CCSS Mathematical Practices & How They Apply to a CMP 2 Classroom <i>Graham</i>	<b>28.</b> Of Course ELL Students Can Learn with CMP <i>Wohlgelegen</i>
<b>11:00 A.M.– 12:15 P.M.</b>	<b>29.</b> Using Technology to Support Learning in CMP <i>Towle</i>	<b>30.</b> Notebooks, Grading, & Other Management Ideas <i>Nicoll-Turner</i>	<b>31.</b> The Mathematical Practices & the CMP 2 Instructional Model <i>Newquist</i>	<b>32.</b> Opening Up & Finding the Edge <i>Schmitt</i>
<b>12:15–2:00 P.M., Conference Reflections, Valerie Mills, President-Elect, NCSM; with J. Michael Shaughnessy, President, NCTM. Lunch, Lincoln Room</b> <i>(Meal: Organic Greens, Baked Lasagna, Chef's Selection Vegetables, MSU Dairy Store Ice Cream)</i>				

**Please read detailed descriptions of talks for more information.**

# BREAKOUT DESCRIPTIONS

## 15<sup>TH</sup> ANNUAL CMP USERS' CONFERENCE, 2012

Friday, February 24, 2012

8:00 – 9:15 a.m.

Plenary Talk

Lincoln Room

*Reasoning & Sense Making: The “Core” of the Standards for Mathematical Practice*

**J. Michael Shaughnessy**

**NCTM President & Professor Emeritus, Portland State University**

CMP and NCTM have both long been committed to supporting students' development in mathematical processes in addition to conceptual and procedural understanding. This presentation points to how NCTM's Reason and Sense Making Initiative provides connections for CMP to the Common Core State Standards for Mathematical Practice. Participants will have opportunities to engage in several reasoning and sense making tasks during the session.

Friday, February 24, 2012

9:30 – 10:45 a.m.

**Session 1**

**Room 103AB**

*Investigating the Importance of Models in Developing Efficient Algorithms*

**Carolyn Droll & Jan Robinson**

How can we help students develop efficient algorithms for dividing fractions? Models are more than just drawing pictures. Using Investigation 4 of *Bits and Pieces II*, participants will create models and analyze how their models could be used to lead to various algorithms. Participants will also discuss the teacher's role in moving students from models to algorithms, become aware of how mathematical models develop conceptual understanding, and see how models facilitate the teaching of algorithms.

**Session 2**

**Room 104AB**

*Formative Assessment in CMP with ASSISTments*

**Cristina Hefferman & Shawn Towle**

Teachers are asked repeatedly to use data to inform instruction. Researchers at WPI have built an online free tutoring system used to collect data. It blends assessment and instructional ASSISTance to help teachers with formative assessment. Come see how it is can be used with your students. Uses of ASSISTments for homework, quizzes, mathematical reflections, and the CMP games will be discussed. Engage in experimentation and conversation to think about how this tool might be used to help you increase student learning in CMP. Bring a laptop!

**Session 3**

**Room 101**

*Data In CMP: Implications for Changes from the CCSS*

**Susan Friel**

This session will discuss a revised path through statistics and data analysis in grades 6–7 tied to expectations from the CCSS. Participants will have a chance to think about some new ideas tied to the concept of variability as part of this session.

**Session 4**

**Room 106**

*Planning for & Implementing a Summary that Supports the Mathematical Practices*

**Melissa Butki & Geraldine Devine**

We will explore five strategies for planning and orchestrating a productive summary. We will also consider ways in which attending to multiple solution strategies in the summary creates opportunities for students to build proficiency with standards of content and practice. We illustrate how the Teacher Guide and effective instructional practices are helpful for planning and conducting productive discussions that support the mathematical goals of the lesson.

**Session 5**

**Heritage Room**

*Becoming a CMP Teacher*

**James Alspaugh & Kathy Dole**

In this session we will look at a teacher's first year using CMP with the support of a coach during the process. Through discussions participants will gain an understanding of the challenges in implementing CMP.

Friday, February 24, 2012  
11:00 a.m – 12:15 p.m.

**Session 6**

**Room 103AB**

***Building Understanding through Connections while Managing Time Effectively***

**Jane Porath & Mary Beth Schmitt**

How do you plan for completing Investigations in a timely manner without hindering students' mathematical development? We will look at the variables that influence pacing and share ideas for developing deeper student understanding while adhering to a timeline. Through discussions participants will become aware of how teacher decision-making impacts the facilitation of the lessons.

**Session 7**

**Room 104AB**

***GeoGebra: Dynamic Geometry Software for Kaleidoscopes, Hubcaps & Mirrors***

**Shawn Towle**

GeoGebra is FREE mathematics software for schools that connects geometry, algebra and calculus. Come see how GeoGebra can be used as dynamic geometry software to enhance student learning in the unit Kaleidoscopes, Hubcaps, and Mirrors. Bring a laptop!

**Session 8**

**Room 101**

***Creating an Environment in which the Mathematical Practices Come Alive***

**Teri Keusch**

How can we create an environment where students will persevere through problems, reason abstractly, and argue points while critiquing others' reasoning? Sound tough? That's because it IS! We'll look at the mathematical practices of the CCSS, watch video of a classroom where these practices are in place, and think hard about how to create an environment that will foster the use of these practices.

**Session 9**

**Room 106**

***What I Do with the Mathematical Reflections***

**Yvonne Grant**

We will share some ideas for how to get students to write mathematical reflections. We will explore how we might assess their writing in a quick, manageable way. Also, we'll investigate how the reflections tie to

the mathematical practices and enhance students' understanding of the mathematical goals in an investigation.

**Session 10**

**Heritage Room**

***Implementing CMP2: Teacher Concerns & Possible Solutions***

**Dave Graham**

In this session we will address common concerns teachers have when implementing CMP2 and in the process develop strategies for lowering teachers' anxiety level during implementation. In particular, teachers and coaches will have a better understanding of how to manage the conversion from a traditional classroom to a CMP2 classroom.

Friday, February 24, 2012  
1:45 – 3:00 p.m.

**Session 11**

**Room 103AB**

***Supporting Students in Developing Deep Understandings of Operations with Rational Numbers***

**Cindy Callard**

Supporting students to develop an understanding of how operations with rational numbers "work" and to be able to meaningfully perform operations with rational numbers is a goal of the CMP program. But how does one support students' thinking/reasoning to develop this deep understanding and facility with operations? Using tasks from *Accentuate the Negative* related to integer addition and subtraction, we will consider how to elicit, build on, and refine students' thinking about operations over time in order to support students' formalization of strategies. We will examine how CMP tasks were used to support students' generalizations and examine student work related to these tasks. We will consider how these goals for students are reflected in the CCSS Content Standards AND Standards for Mathematical Practice.

**Session 12**

**Room 104AB**

***Differentiated Instruction***

**Teri Keusch**

As a 6th grade teacher, I will share my experiences and reflections about some ways I differentiate my instruction each day. We'll think hard about making the best use of THE TIME WE HAVE to meet the needs of students with varying ability levels. In particular, we will discuss the questions: How can we

begin to fill some gaps in our student learning? How can we “push and pull” kids DURING our class time?

---

**Session 13** **Room 101**

***Pushing the Mathematics in Growing, Growing, Growing***

**Jane Porath**

Our daily lives are bombarded with percent changes, from our changing GDP to the value of our cars depreciating. This session will explore ways to deepen student understanding of percent change in the real world. We will have the opportunity to push our own thinking about various problems within the curriculum in order to engage our students in deeper mathematical reasoning.

---

**Session 14** **Room 106**

***Assessment in the CMP Classroom***

**Kay Neuse**

Asking students to explain their reasoning can take many forms. Assessment of these explanations may take just as many forms. Formative and summative assessments should be used regularly in the CMP2 classroom. Suggestions and ideas for both types of assessments will be shared as well as discussions around when to assess student progress.

---

**Session 15** **Heritage Room**

***A Recipe for Preparing a Successful CMP Lesson***

**Jim Wohlgehagen**

We will discuss the important items that should be considered when you prepare to teach a CMP lesson. Ideas for effective use of the Launch-Explore-Summarize model will be shared.

Friday, February 24, 2012

3:15 – 4:30 p.m.

---

**Session 16** **Room 103AB**

***CMP2 in Title 1 Schools***

**Kay Neuse**

Schools with a high number of economically disadvantage and minority populations have unique challenges when using CMP2. Strategies for engaging students and supporting their success will be shared.

---

**Session 17**

**Room 104AB**

***Looking for More Connections in Connected Math***  
**Carolyn Droll & Jan Robinson**

Is there more to Tupelo Township than adding fractions? What do ratios have to do with *Filling and Wrapping*? Discover the hidden teaching opportunities that exist within CMP investigations. Participants will examine CMP problems from various units to find ways to extend and reinforce skills and concepts other than those explicitly addressed.

---

**Session 18**

**Room 101**

***Standards for Mathematical Practice: Where are the Opportunities for Teachers & Students? (6<sup>th</sup> grade)***

**Jill Gordon & Geraldine Devine**

We will explore the powerful learning opportunities created by the interplay between a rich CMP task and key instructional decisions attentive to the standards for mathematical practice. First, we will explore and discuss opportunities in the “Missing Factors” task (*Bits and Pieces III*, Problem 2.2) to deepen students’ content knowledge and develop elements of the CCSS for Mathematical Practice. We will also discuss ways in which the application of the Mathematical Practices can support student understanding. Video clips of teachers and students enacting the task will illuminate additional opportunities provided by the enactment of the task.

---

**Session 19**

**Room 106**

***Let’s Create a Summary Together***

**Kathy Dole**

In this session we will look at Problem 2.1 in *Comparing and Scaling*. We will look at video of students during the explore portion of the lesson and create a summary together. We will observe students working on the problem and use our observations to plan and execute an effective summary. These strategies can translate to creating summaries for other problems

---

**Session 20****Heritage Room*****An Example of How the CCSS Mathematical Practices Play Out in a CMP Unit*****Charlie Newquist**

The session will review of the mathematical practices, but focus on the ways in which teachers can support development of mathematical practices in student thinking. This is done by choice of task, discourse in the classroom, assigned homework, and daily classroom routines. Examples will come from the *Prime Time* unit.

Saturday, February 25, 2012

8:00 – 9:15 a.m.

**Session 21****Room 103AB*****Grades—How Do They Help? How Do They Hurt?*****Jane Porath & Mary Beth Schmitt**

If you believe that grades should reflect student understanding, this session will provide opportunities for you to consider how that it is possible. We will share our recent experiences with standards-based grading while streamlining the time it takes to assess student work. Participants will have the opportunity to consider how grades can reflect depth of student understanding rather than points earned by successful task completion.

---

**Session 22****Room 104AB*****Standards for Mathematical Practice: Where are the Opportunities for Teachers & Students (8<sup>th</sup> Grade)*****Geraldine Devine & Jennifer Halligan**

We will explore the powerful learning opportunities created by the interplay between a rich CMP task and key instructional decisions attentive to the standards for mathematical practice. Participants will explore and discuss opportunities in the “Tiling the Pool” task (*Say it With Symbols*, Problem 1.1) to deepen student content knowledge. In addition, instructional strategies that provide opportunities for students to develop skill with the Common Core State Standards for Mathematical Practice and how these Practices enhance understanding will be discussed. Video clips of teachers and students enacting the task will illuminate additional opportunities provided by the enactment of the task.

---

**Session 23****Room 101*****Formative Assessment Lessons for Learning*****Mary Bouck**

A formative assessment lesson for learning, that aligns with CMP units, will be shared, as well as a free website for additional lessons. This set of lessons, developed by the Mathematical Assessment Project out of the University of California – Berkeley, reflects the research findings of Black and William on formative assessment, supports implementation of the new CCSS, and aligns and supports the mathematics and pedagogy of CMP. We will review and experience a formative assessment lesson “for learning.”

---

**Session 24****Room 106*****Five Practices for Orchestrating Productive Discussions*****Cindy Callard**

Implementing CMP well goes beyond having students work together to solve problems. This is the tip of the iceberg. How do we as teachers (coaches, administrators) get better at helping students to uncover the important mathematical ideas of the problems, consider contradictions or misconceptions, and build on other’s solutions (all called for in the CCSS)? Participants in this session will have an opportunity to become familiar with Peg Smith’s framework for “orchestrating mathematically productive discussions” and examine the use of these practices in the enactment of the “Orange Juice Problem” from *Comparing and Scaling*. Participants will have time to reflect on the use of these practices in relationship to their own CMP teaching, coaching or supervising.

Saturday, February 25, 2012

9:30 – 10:45 a.m.

**Session 25****Room 103AB*****How I Know What My Students Know & What I Do About It*****Anne Marie Nicoll-Turner**

We will discuss instructional decision making, based on evidence of student learning from math reflections, quizzes and unit tests from the unit *Comparing and Scaling*.

---

**Session 26** **Room 104AB**

***What If...?—The Role of Questioning in Developing Understanding***

**Yvonne Grant**

What if we could enhance our questioning? Would I learn more about my students? How would my students benefit? Is it worth the effort? Could it help address the Mathematical Practices? In this session we will examine the importance of questioning to enhance mathematical understanding.

---

**Session 27** **Room 101**

***Understanding the CCSS Mathematical Practices & How They Apply to a CMP2 Classroom***

**Dave Graham**

We will discuss the Standards for Mathematical Practice with reference to the National Academies book, *Adding It Up, Helping Children Learn Mathematics*. In particular, we will examine how the Mathematical Practices are reflected throughout CMP2 by exploring examples from CMP2 curriculum.

---

**Session 28** **Room 106**

***Of Course ELL Students Can Learn with CMP***

**Jim Wohlgehagen**

Ideas will be shared that can help ELL students be more successful in a CMP classroom.

Saturday, February 25, 2012

11:00 a.m – 12:15 p.m.

---

**Session 29** **Room 103AB**

***Using Technology to Support Learning in CMP***

**Shawn Towle**

---

Saturday, February 25, 2012

**Plenary Talk**

***Conference Reflections***

Valerie and Mike will provide their reflections on the conference and show their perspective on the future of mathematics education in their county.

---

How can technology be used to enrich student learning in Connected Mathematics? Technology can provide a dynamic environment to learn and practice mathematics. We will explore powerful tools and resources that are freely available online. I will share my “moodle” site and discuss ways to use the applets with students in our CMP lessons. Bring a laptop!

---

**Session 30** **Room 104AB**

***Notebooks, Grading & Other Management Ideas***

**Anne Marie Nicoll-Turner**

In this session an experienced CMP teacher will share ideas used to help manage notebooks and grading. Opportunities will be given to answer questions from the audience.

---

**Session 31** **Room 101**

***The Mathematical Practices & the CMP2 Instructional Model***

**Charlie Newquist**

In this session the 8 CCSS for Mathematical Practices will be discussed as they are used in teaching a CMP unit. We will connect the Practices to the instructional model in CMP2 with emphasis on illustrating how the Practices are embedded in the instruction and hence not taught separately.

---

**Session 32** **Room 106**

***Opening Up & Finding the Edge***

**Mary Beth Schmitt**

As seasoned users of the CMP curriculum, we are looking for opportunities to “bump up” mathematical engagement by students. How can we encourage students to interact with the mathematics rather than being subjected to the mathematics? How can we “open up” the depth of student inquiry?

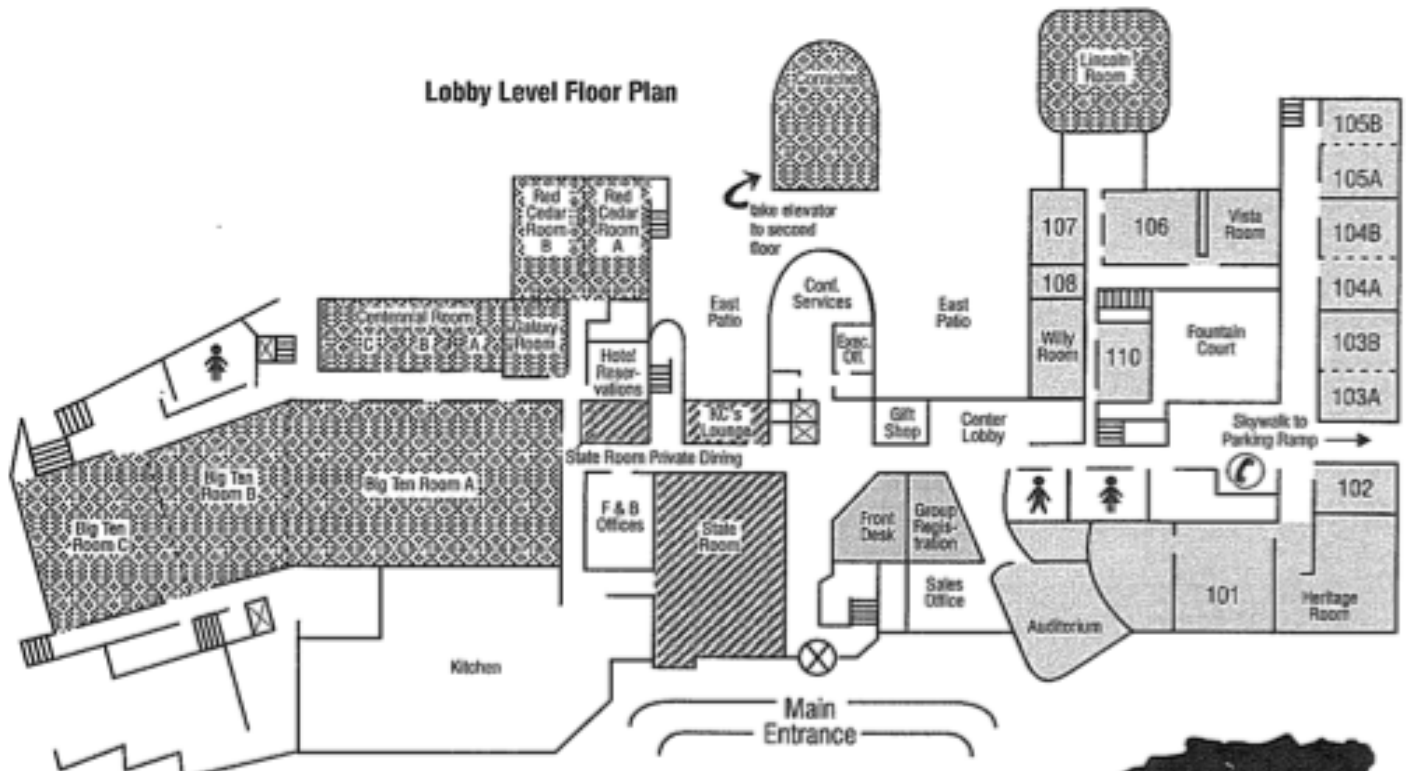
---

12:15 – 2:00 p.m.

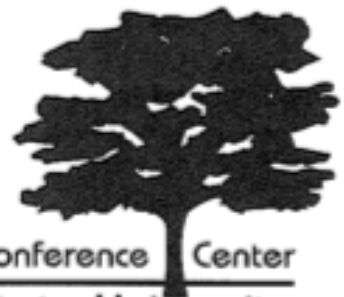
**Lincoln Room**

**Valerie Mills, President-Elect, NCSM  
J. Michael Shaughnessy, President, NCTM**

### Lobby Level Floor Plan

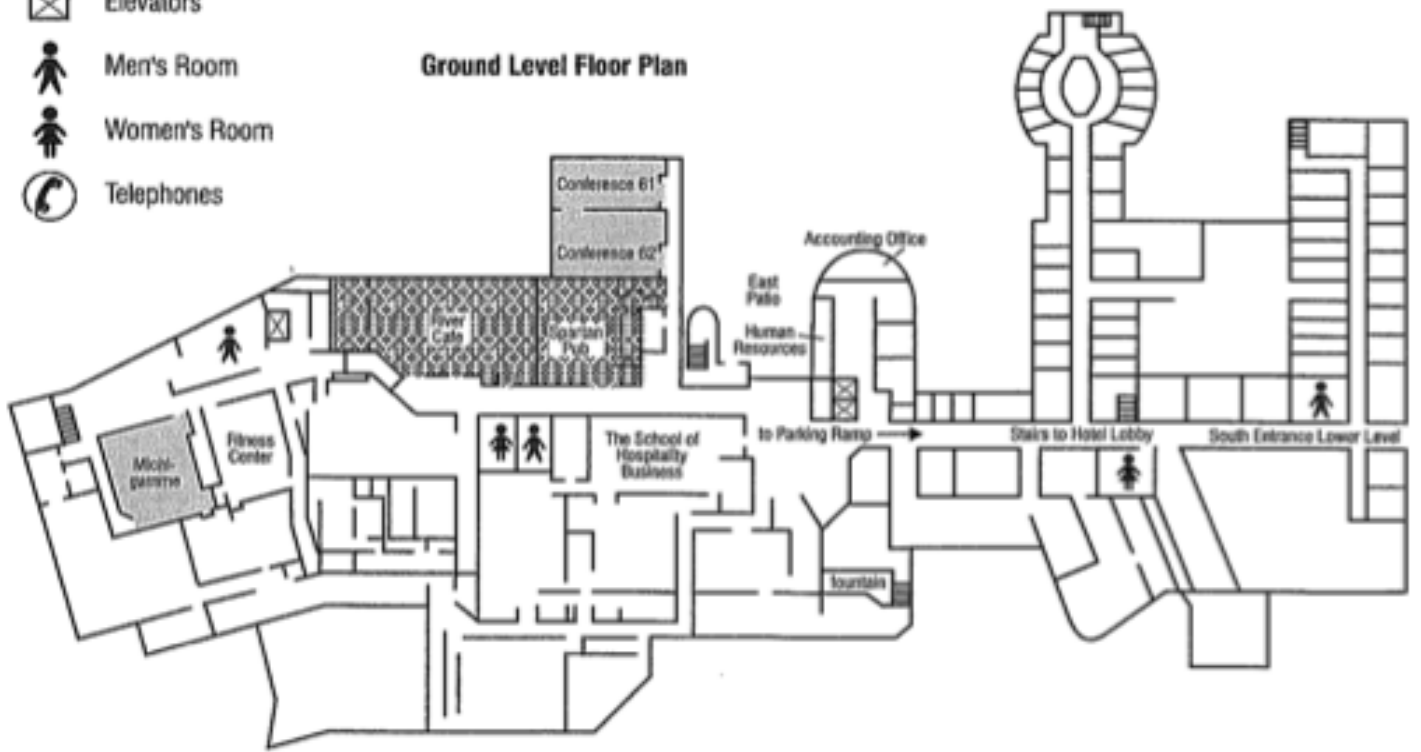


-  Meeting Rooms
-  Banquet / Meeting Areas
-  Eating Areas
-  Front Desk
-  Elevators
-  Men's Room
-  Women's Room
-  Telephones



**Kellogg Hotel & Conference Center**  
at Michigan State University

### Ground Level Floor Plan



## FUTURE CONFERENCES

### **17<sup>th</sup> Annual Getting to Know CMP Conference**

*June 18-22, 2012*

You are cordially invited to attend a five-day Getting to Know Connected Mathematics (CMP) Workshop on the beautiful campus of Michigan State University, June 18–22, 2012. This workshop is intended for teachers, coaches, teacher leaders, and administrators new to the curriculum, new to a grade level of the curriculum, or interested in receiving a more in-depth look at the mathematics and pedagogy of CMP as well as implementation strategies. It is also intended for experienced CMP teachers who want to explore the mathematics in a different grade level from that which they teach. This year a common thread throughout the conference will be a discussion of the Common Core State Standards (CCSS) curriculum and the Mathematical Practices (MP).

### **5<sup>th</sup> Annual CMP Teacher Leaders and Coaches Workshop**

*June 18-22, 2012*

You are cordially invited to attend a five-day CMP Teacher Leader and Coaches Workshop on the beautiful campus of Michigan State University, June 18–22, 2012. This conference is intended for professional development leaders (coaches, teacher leaders, curriculum coordinators) who are committed to providing ongoing support for teachers who are striving for more effective engagement with the CMP curriculum. Attendees will have a chance to discuss how to design professional development opportunities in your district. Characteristics of effective CMP classrooms will be examined through classroom videos, student work, and other artifacts. Coaching strategies for helping teachers develop students' understanding of key mathematical ideas in CMP will be exemplified. The Common Core State Standards (CCSS) curriculum and the Mathematical Practices (MP) and CMP2 will be discussed during the week.

While these videos could be used in CMP unit training workshops, conference participants will:

- Look deeply at the mathematics embedded in the curriculum
- Increase their understanding of mathematical connections within units in a grade level and across grade levels in CMP
- Examine the teaching model and its role in developing student understanding;
- Understand the varying needs of teachers new to this curriculum and develop activities for meeting these needs
- Develop strategies to help teachers plan, teach, assess and reflect more effectively on their teaching practice
- Learn about various models for professional development and apply this knowledge to designing and reflecting on their district/institutional models
- Develop awareness of current research and theory relevant to CMP teaching and implementation.