

**Mathematics Coaching Program - Mathematics Teaching Institute  
July 27, 2015**

**Daily Agenda: Day One**

**Big Picture Goals:**

- **Compare / Contrast student-centered mathematics instruction with 'traditional' teacher-centered mathematics instruction.**
- **Introduce and explicate the 8 Student Mathematical Practice (CCSSM) and the 8 Mathematical Teaching Practices (NCTM).**
- **Build cohort community through collaborative problem solving.**
- **Identify the major tenets of Cognitively Guided Instruction (CGI) in the context of problem-solving.**

8:30 am	Cheryl, Cathy, and Joan	Summer Institute Check-in and Registration Participant Folders
9:00 am <i>Please note: All times are tentative and subject to change!</i>	Patti, Azita, Tim, Lucia, Joan, Cheryl, Cathy, and GRAs	Official Welcome and Introduction Meet your Summer Institute Facilitators Meet your Summer Institute Support Team Ice Breaker: Draw Yourself Doing Mathematics
9:20 am	Patti	Summer Institute Overview: Why are we here? How can I make a difference?  Setting the tone for our week together  8 Student Mathematical Practices (CCSSM)  8 Mathematical Teaching Practices (NCTM)
10:00 am		Morning Break
10:15 am	Lucia & James	<b>Module 1: Overview of the week &amp; Teaching Mathematics in K-5</b>  Establishing our Community and Social Norms Teaching K-5 mathematics Key concepts in K-5 mathematics

		<p>Collaborative Problem Solving Part I:  A Math Task in Three Acts (Dan Meyer)  Group Sharing of Solutions and Solution Strategies  - Building squares and cubes</p>
12:00 pm		Lunch
12:45 pm	Lucia & James	<p><b>Module 2: Place Value</b>  Problem solving in base-ten place value</p> <p>M –Student and Teacher Actions during Collaborative Problem Solving</p>
2:15 pm		Afternoon Break
2:30 pm	Lucia & James	<p>Place-Value Numeration</p> <p>Student and Teacher Actions</p> <p>Sharing Best Practices in instructional design for counting and place-value concepts</p>
3:45	Lucia & James	<p>Day One Reading Homework:  Kari, A. R. &amp; Anderson, C. B. (2003). Opportunities to develop place value through student dialogue. <i>Teaching Children Mathematics</i>,  Free at: <a href="http://www.nctm.org/Publications/teaching-children-mathematics/2003/Vol10/Issue2/A-Teacher-s-Journal---Opportunities-to-Develop-Place-Value-___/">http://www.nctm.org/Publications/teaching-children-mathematics/2003/Vol10/Issue2/A-Teacher-s-Journal---Opportunities-to-Develop-Place-Value-___/</a></p> <p>Morin, J. &amp; Samelson, V. M. (2015). Count on it: Congruent manipulative displays. <i>Teaching Children Mathematics</i>, 21, 362-370.  Free access at:  <a href="http://www.nctm.org/Publications/teaching-children-mathematics/2015/Vol21/Issue6/Count-On-It - Congruent-Manipulative-Displays/">http://www.nctm.org/Publications/teaching-children-mathematics/2015/Vol21/Issue6/Count-On-It - Congruent-Manipulative-Displays/</a></p> <p>Optional:  Hintz, A. B. (2013). Strengthening Discussions. <i>Teaching Children Mathematics</i>, 20, 318-324.  Free access at:  <a href="http://www.nctm.org/Publications/teaching-children-mathematics/2013/Vol20/Issue5/tcm2013-12-318a_pdf/">http://www.nctm.org/Publications/teaching-children-mathematics/2013/Vol20/Issue5/tcm2013-12-318a_pdf/</a></p>

**Mathematics Coaching Program - Mathematics Teaching Institute**

**July 28, 2015**

**Daily Agenda: Day Two**

**Big Picture Goals:**

- **Investigate the use of Formative Instruction in mathematics classrooms.**
- **Integrate Mathematical Practices into mathematics instruction.**
- **Use students' work to uncover mathematical thinking and misconceptions.**

9:00 am	Azita	Whole Group Mathematics Discussion:  Asking the BIG <i>Why</i> Questions in K – 12 Mathematics  More Mathematical Practices  What can we learn from wrong answers?
10:00 am		Morning Break
10:15 am	Azita	“Why Questions” continued
12:00 pm		Lunch
12:45 pm	Mary	Exploring “Depth of Knowledge”: <ul style="list-style-type: none"><li>- Implications for assessment</li><li>- Implications for instruction and learning activities</li><li>- Developmental considerations</li></ul>
2:15 pm		Afternoon Break
2:30 pm	Lucia & James	<b>Extending Why Questions and Depth of Knowledge in K-5:</b> <ul style="list-style-type: none"><li>- <b>Using Tasks from your Curriculum materials</b></li></ul>
		Day Two Homework: “13 Rules that Expire” (Karp, Bush, and Dougherty, 2014) Free access on NCTM.org: <a href="http://www.nctm.org/Publications/teaching-children-mathematics/2014/Vol21/Issue1/tcm2014-08-18a.pdf/">http://www.nctm.org/Publications/teaching-children-mathematics/2014/Vol21/Issue1/tcm2014-08-18a.pdf/</a>

		Optional: Skim chapters 1-5 of Cardone, T. (2015) Nix the Tricks; <a href="http://nixthetricks.com/">http://nixthetricks.com/</a> (Free download; author accepts donations)
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## Mathematics Coaching Program – Mathematics Teaching Institute

July 29, 2015

### Daily Agenda: Day Three

#### Big Picture Goals:

- Transform ‘traditional’ textbook tasks into problem solving experiences.
- Develop and strengthen elementary computation concepts of addition and subtraction
- Using Number Talks to support students’ number sense development
- Digging deeper into Cognitively Guided Instruction (CGI) in the context of problem-solving.

9:00 am	Lucia & James	Solving and analyzing a rich problem - The Candy Bar Problem - Solving Rich problems - Creating Rich problems
10:15 am		Morning Break
10:30 am	Lucia & James	From Textbooks to Tasks / Adapt-a-Task using YOUR curriculum  Problem Posing: Removing Constraints and Increasing Cognitive Demand
12:00 pm		Lunch
12:45 pm	Jodi and Team	<b>Number Talks with a Mathematics Coach</b> - How to use them to build students’ number sense - Developing computational fluency through number talks - Implementing number talks in your classroom and school
2:30 pm		Afternoon Break
2:45 pm	Patti, Azita, Tim, Lucia, Joan, Cheryl, Cathy, and GRAs	MCP Year Three Recognition MCP Alumni Panel Discussion  Homework: Seeley, C. Faster Isn’t Smarter: The Trap of Timed Tests (Message 18). Free at: <a href="http://www.ntcm.org/mespa/FasterIsntSmarter.pdf">www.ntcm.org/mespa/FasterIsntSmarter.pdf</a>

**Mathematics Coaching Program – Mathematics Teaching Institute**

**July 30, 2015**

**Daily Agenda: Day Four**

**Big Picture Goals:**

- **Extend participants thinking about measurement in Intermediate Mathematics.**
- **Use estimation and measurement concepts in classroom-ready activities.**
- **Explore frames of reference for standards measurement units.**
- **Use literacy-based activities as a context for measurement in metric and U.S. Customary Systems.**
- **Generate mathematical problem-solving experiences that incorporate Mathematics Practices.**

9:00 am	Lucia	Reflection on Day 3  Reflections on “13 Rules That Expire” (“Why?” and “Why not?”) & “Nix the Tricks”
10:30 am		Creating rich tasks and adapting tasks to create rich tasks
12:00 pm		Lunch
12:45 pm	Lucia  <i>Afternoon Break taken as needed.</i>	Geometry concepts <ul style="list-style-type: none"><li>- What is a polygon?</li><li>- Analysis of student misconceptions by grade level</li><li>- Planning geometry tasks</li></ul>
2:30 pm		Problem Posing with Children’s Literature
3:50 pm		Daily Feedback Form  Homework: McKeny, T. S. & Foley, G. D. (2012). Tales, tasks, tools, and talk. <i>Teaching Children Mathematics</i> , 19, 316-323. Free at: <a href="http://www.nctm.org/Publications/teaching-">http://www.nctm.org/Publications/teaching-</a>

		<p><a href="http://www.nctm.org/Publications/Teaching-Children-Mathematics/2012/Vol19/Issue5/Tales,-Tasks,-Tools,-and-Talk/">children-mathematics/2012/Vol19/Issue5/Tales,-Tasks,-Tools,-and-Talk/</a></p> <p>Bay-Williams, J. M. &amp; Kling, G. (2014). Enriching Addition and Subtraction Fact Mastery through Games. <i>Teaching Children Mathematics</i>, 21, 238-247.</p> <p>Free at: <a href="http://www.nctm.org/Publications/Teaching-Children-Mathematics/2014/Vol21/Issue4/Enriching-Addition-and-Subtraction-Fact-Mastery-through-Games/">http://www.nctm.org/Publications/Teaching-Children-Mathematics/2014/Vol21/Issue4/Enriching-Addition-and-Subtraction-Fact-Mastery-through-Games/</a></p>
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## Mathematics Coaching Program – Mathematics Teaching Institute

July 31, 2015

### Daily Agenda: Day Five

#### Big Picture Goals:

- Write and refine student-centered and developmentally-appropriate teaching units.
- Integrate Mathematical Practices in teaching units.
- Use CCSSM Learning Progressions to create teaching units.
- Generate coherent mathematical problem solving experiences that support student understanding.
- Write and refine formative assessments and rubrics to measure student progress toward instructional outcomes.

9:00 am	Lucia & Team	The Structure of Day Five and What you will be creating Setting Expectations for Learning Tasks - You CAN do this!
10:00 am	<i>Morning break taken as needed.</i>	Learning Tasks Group Assignments and Topic Selection  On your mark; get set; CREATE!!!
12:00 pm		Lunch
12:45 pm	<i>Afternoon break taken as needed.</i>	Grade-band Learning Task Feedback Groups  Further development and refinement of Learning Tasks  Developing Learning Task Assessments
3:00 pm	Lucia & Team	Submitting your Learning Tasks
3:30 pm	Patti, Azita,	Summarizing our week



	Tim, Lucia, Joan, Cheryl, Cathy, and GRAs	Where are we going? Where have we been? Day Five Feedback Form and Reflection A Fond Farewell
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