



# Greater San Diego Mathematics Council

An Affiliate of the National Council of Teachers of Mathematics  
and the California Mathematics Council

## ***Annual Conference***

FRIDAY & SATURDAY, FEBRUARY 3 & 4, 2012

***Marina Village, Mission Bay***

***Put Students at the Helm,  
Standards for Mathematical  
Practice***



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### **Areas of Focus include:**

- ❖ **Strategies for English Learners**
- ❖ **STEM (Science, Technology, Engineering and Mathematics)**
- ❖ **Common Core: Addressing Four Major Areas of Challenge**
  - ✓ **Fractions**
  - ✓ **Number Sense and Place Value**
  - ✓ **Transformational Geometry**
  - ✓ **Model with Mathematics**
- ❖ **Extended length workshops offered Saturday included in conference fee**

## 2011 Teacher of the Year & Karen Richey Family Math Awards

For the first time the GSDMC Annual Recognition Banquet will be held during the GSDMC conference on Friday, February 3, 2012 beginning at 6 pm at The Dana on Mission Bay. The banquet recognizes and honors those teachers, who have done a superior job of inspiring students of all background and abilities to higher achievement in mathematics, by presenting GSDMC Outstanding Classroom Mathematics Teacher Awards. We hope to continue holding this annual recognition event in connection with our annual conference.

We also recognize the accomplishments of those schools doing outstanding work through the Family Math/Mathematica Para La Familia program by presenting the Karen Richey Family Math Award. Please consider joining us in honoring these dedicated teachers and educators. The banquet is limited to 120 people. Find a registration form for this special event at [www.gsdmc.org](http://www.gsdmc.org).

Details for next year can be found below.

## GSDMC Student Events Planned for 2012

**Do you know....**

**that your registration fees for the GSDMC Conference help support** a variety of student contests and field days planned for 2012? Check the GSDMC website ([www.gsdmc.org](http://www.gsdmc.org)) for more information about Elementary Math Field Day; Middle School Math Field Day; Senior High Math Field Day; MATHCOUNTS; 24 Challenge Math Tournament; High School Honors Math Contest; and High School Honors Statistics Contest. To find out if GSDMC may be able to support a mathematical event for you contact Brian Lawler at [www.gsdmc.org](http://www.gsdmc.org)

## Nominate an Outstanding Teacher for GSDMC Recognition for 2012

Each year, GSDMC honors teachers who do a superior job of inspiring students of all backgrounds and abilities to higher achievement in mathematics. In late January or early February of 2012, information will be sent to every school in the county asking for nominations for the GSDMC Outstanding Classroom Mathematics Teacher Award. Winners will be invited to attend the GSDMC Annual Recognition Banquet in May. Every awardee will receive a plaque, \$200 to be used at their discretion for their classroom mathematics program, and one year's membership in GSDMC.

GSDMC is asking you to nominate an outstanding classroom teacher of mathematics. Your nominee should be an exemplary classroom teacher who has also shared his/her expertise and passion outside the classroom. Nomination forms will be posted on the GSDMC web site at [www.gsdmc.org](http://www.gsdmc.org). The deadline for nominations has extended the nomination period until November 2012!

## Karen Richey Family Math Award

In order to bring more recognition to schools doing outstanding work in the inclusion of Family Math/Mathematica Para La Familia into their parent involvement program, GSDMC established the Karen Richey Family Math Memorial Award. If you or a school you know of has been conducting successful Family Math sessions for at least three years, please consider applying for this award. The schools selected will be honored at the GSDMC Annual Recognition Banquet at our next conference in February, 2013.

Each site selected to be honored will be entitled to four complimentary dinners at the banquet. In addition, \$300 will be given to the school awarded this honor to be used for the school's Family Math program. Information about the Karen Richey Family Math Memorial Award will be sent to all schools in late January/early February and the application form will be online at the GSDMC web site at [www.gsdmc.org](http://www.gsdmc.org).

**Visit our website to see how you can get involved with this all-volunteer organization.** [www.GSDMC.org](http://www.GSDMC.org)

## Be the Best Math Teacher you can be!

**Master of Arts in Education with a  
Concentration in  
K-8 Mathematics Education**

San Diego State University  
Fall 2012-Spring 2014

Online application available  
October 15, 2011

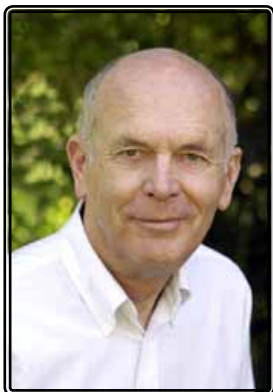
Application deadline: February 1, 2012

For more information, go to:  
<http://coe.sdsu.edu/ste/masters/mathed/index.php>

Or contact Vicki Jacobs (619).594.1373,  
[vjacobs@mail.sdsu.edu](mailto:vjacobs@mail.sdsu.edu)  
or Lisa Lamb, 619.594.0774 [Lisa.Lamb@sdsu.edu](mailto:Lisa.Lamb@sdsu.edu)



## Featured Presenters



### **Dr. Robert F. Sawyer, Friday, 12:30 – 1:45, Starboard Room**

During his forty-three year career at the University of California, Berkeley as a professor of mechanical engineering, Dr. Sawyer's teaching and research included rocket propulsion, energy conversion, combustion, air pollution, and regulatory policy. He has authored or co-authored more than 350 publications including two books. He chaired the Energy and Resources Group and was the first Class of 1935 Professor of Energy at Berkeley. From 2003-2005 he headed the University of California Education Abroad Program in London. In January 2006, Dr. Sawyer left the University of California to accept the appointment by Governor Schwarzenegger to head the California Air Resources Board, a position he held through June 2007. Currently he is the class of 1935 Professor of Energy Emeritus at UC Berkeley. He is a graduate of Stanford and Princeton Universities. He received the

Berkeley Citation and the American Society of Mechanical Engineers' Soichiro Honda Medal. He is a fellow of the Society of Automotive Engineers and a member of the United States National Academy of Engineering. Bob has completed 29 marathons and has hiked the John Muir Trail four times, for a total of about 1000 miles. For more information about Dr. Sawyer's work visit: <http://www.me.berkeley.edu/faculty/sawyer/>

### **Dan Meyer**

**Friday, 3:30 – 4:45, Starboard Room**

Dan Meyer taught high school math between 2004 and 2010. He is currently studying at Stanford



University on a doctoral fellowship. In his blog he states: "Abstraction doesn't make math harder. Abstraction makes math *possible*. It's one of the most powerful and satisfying tools in the mathematician's box. The trouble is

that you can't abstract a vacuum. You start with something concrete (not necessarily "real-world") and then abstract its essential features. Again: you *start* with something concrete and *then* abstract it." His hobbies include graphic design, filmmaking, motion graphics, and infographics, most of which have found their way into his practice in some way or another. His specific interests include curriculum design (answering the question, "how we design the ideal learning experience for students?") and teacher education (answering the questions, "how do teachers learn?" and "how do we retain more teachers?" and "how do we teach teachers to teach?"). Dan is listed in the Guinness Book of World Records 2005, for holding the record for the "longest paper clip chain". He put together 54,030 paper clips to create a "5,340-foot paper clip chain." See: <http://paperclipchallenge.com/> To follow Dan's blog, visit: <http://blog.mrmeyer.com/>

### **Dr. Rochelle Gutiérrez**

**Saturday, 8:15 – 9:15, Terrace**

Dr. Gutiérrez' research focuses on equity in mathematics education, race/class/language issues in teaching and learning mathematics, effective teacher communities, and social justice. Dr. Gutiérrez has served as a member of the RAND

National Mathematics Study Panel, the National Academy of Sciences' Committee on Increasing Urban High School Students' Engagement and Motivation to Learn, and the board of directors of Society for Advancement of Chicanos and Native



Americans in Science (SACNAS). She was awarded a Fulbright fellowship to study secondary mathematics teachers in Zacatecas, México, and is currently serving as editor for a special issue on identity/power for the Journal for Research in Mathematics Education. Her work has been published in such journals as *Mathematical Thinking and Learning*, *Journal of Curriculum Studies*, *Journal for Research in Mathematics Education*, *American Educational Research Journal*, and the *Urban Review*. Before and throughout graduate school, she taught middle and high school mathematics to adolescents in East San José, California. She currently is the PI on an NSF grant that seeks to understand what it takes to develop high school mathematics teachers who engage their students in rigorous and creative mathematics and are committed to social justice.

# Saturday Extended Focus Workshops

Go deeper with the mathematics content on Saturday by attending focused one-hour and/or focused two-Hour sessions. Choose from a variety one-hour and two-hour sessions focusing on the areas of **Common Core State Standards Four Major Areas of Challenge**; **Strategies for English Learners** **TODOS** Strand; **STEM** (Science, Technology, Engineering and Mathematics)

## Focus on English Language Learners

**Mini-Conference** (see Saturday session descriptions)



The Saturday ELL Mini-Conference is geared toward developing a community among San Diego math educators who advocate for an equitable and high quality mathematics education for all students, in particular English

Language Learners, by increasing educators' ability to foster students' proficiency in rigorous and coherent mathematics. All of the speakers in this half day Mini-Conference are nationally or internationally recognized for their work, and active in the TODOS: Mathematics for All organization.

After an opening Plenary, participants will break into grade bands to consider teaching strategies that will engage all children in worthwhile mathematics. At this time, there will be breakout sessions for leaders, including coaches and administrators. The Mini-Conference will conclude with a re-assembly of all participants in a Community session.

The Community session will tie together and celebrate the events of the half-day and will give participants an opportunity to cultivate relationships and partnerships with like-minded individuals. There will be an opportunity to make commitments for implementation of ideas learned with the support of the community. We are excited to offer this Mini-Conference and hope that YOU will join us in this professional opportunity!

### ELL Resources and References:

<http://www.todos-math.org/resources>

<http://www.nctm.org/publications/content.aspx?id=26302>

<http://www.tsusmell.org/resources/useful-links.htm>



## Common Core State Standards: Areas of Challenge

Why come learn about the Common Core State Standards in Mathematics? The Common Core Standards provide a consistent, clear description of what students are expected to learn so teachers and parents know what they need to do to help their

students. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy.

The Greater San Diego Mathematics Council believes that the Common Core State Standards will benefit the students of both California and our nation by providing a consistently challenging, yet attainable, level of progress in each content area at each grade level. Regardless of socioeconomics, our students will learn the skills and knowledge to help them achieve in their future academic and/or career settings.

### Common Core State Standards Resources and References:

FAQ's can be found at

<http://www.cde.ca.gov/ci/cc/ccssfaqs2010.asp>

San Diego Common Core Connection

<http://www.sdcoe.net/commoncore/>

CDE's Common Core State Standards Resources

<http://www.cde.ca.gov/ci/cc/>

California Common Core State Standards -

Mathematics Resources <http://caccssm.cmpso.org/>

SMARTER Balanced Assessment Consortium (SBAC)

<http://www.cde.ca.gov/ta/tg/sa/smarterbalanced.asp>



## STEM (Science, Technology, Mathematics and Engineering)

As schools move further into the 21st Century, students use the Learning and Innovation Skills - often called the 4 C's - creativity, critical thinking, communication, and collaboration to develop a greater understanding of Science, Technology, Engineering and Mathematics. Our annual mathematics conference brings you a taste of STEM in a way that guides teachers and students to take a giant step forward towards a 21st Century education.

### STEM Resources:

<http://www.stemedcoalition.org/about-us/>

[http://www7.nationalacademies.org/bose/Frameworks\\_Report\\_Brief.pdf](http://www7.nationalacademies.org/bose/Frameworks_Report_Brief.pdf)

## Extended Two-Hour Professional Development Sessions:

### Extending Children's Mathematical Thinking AFTER a Correct Answer (K-2) Session 650

**Vicki Jacobs, SDSU, 8:15 – 10:15, Marine Room**

What happens after a correct answer is given? In many cases, the mathematical conversation ends! In this session, we will use video and written work of K–2 children to explore why mathematical conversations can (and should) continue after correct answers. We will focus on categories of teacher moves that are likely to be productive in helping children deepen their understandings and make connections to other mathematical ideas related to number sense and place value.

### Don't Just Do Math - USE Math! (3-8) Session 651

**Dawn Caine, Calvert County Public Schools, 8:15-10:15, Coral**

A sign hangs by my desk reminding me to "Help More by Helping Less!" What??? How can that possibly make sense? Think about it... How many real-world situations have all of the information sorted and available in one place? Hmm... none?! The new Common Core Math Practices focus on the math habits our students should be developing to solve real equations. Come learn classroom strategies designed to strengthen these math Practices.

### Using 3D geometry and vector algebra to determine if a molecule can be a greenhouse gas (9-12) Session 652

**Dan MacKay and Laura Webb, High Tech High International, 8:15-10:15, Vineyard**

A gas must possess a vibrating dipole moment in order to be a "Greenhouse gas". Given a molecular model for a gas molecule, its dipole moment can be computed using simple vector geometry. Comparing dipole moments between distorted (using vector scaling) molecular configurations allows the determination of whether the molecule is a greenhouse gas. We will create Excel spreadsheets to calculate such dipole moment vectors paying close attention to significant figures and independent numerical checks.

### Investigating Your School's Ecological Footprint with Project Learning Tree (K-12) Session 850

**Meera Varigonda, California Project Learning Tree, and Michelle Raymond, Crawford Educational Complex, SDUSD, 10:45-12:45, Vineyard**

The Project Learning Tree program supports the development of students' critical thinking skills through investigations of environmental issues. PLT Greenschools! - a new PLT program - helps students take a look at their school's environmental footprint and involves math and teamwork! Come hear about how to involve your school and take home materials to get started.

### Helping Students Reason about Fractions (4-7) Session 851

**Nadine Bezuk, SDSU & Steve Klass, Encinitas USD, 10:45-12:45, Marine Room**

Are your students struggling with fractions? Can they use number lines to reason about fractions? This session will investigate ways to strengthen students' understanding of fractions and reasoning about the big ideas of fractions, including fraction concepts, order, and equivalence. We'll use a variety of models, specifically including the number line and fraction circles, and we'll explore connections between fraction reasoning and understanding the meaning of variables.

### Teaching Advanced Place Value & Decimals with Metric System Tools & Manipulatives (6-8) Session 852

**Madeleine Jeter and Susan Addington, CSU San Bernardino, 10:45 – 12:45, Coral**

Place value and the metric system are both based on a system of units that increase by powers of 10. Teaching them together helps make sense of both. The activities in this session use readily available tools and manipulatives: meter sticks and tape measures and base 10 blocks. Topics will include: Number sense with big and small numbers; Estimating and rounding; Decimals and percents; Arithmetic with decimals; Scientific and exponential notation.

## EARN COLLEGE CREDIT FOR ATTENDING SAN DIEGO MATH CONFERENCE

FEBRUARY 3 & 4, 2012\*



**EDUX 7501(FGH):**  
**Mathematics Instruction & Effective Practice**  
**\$89 per credit unit\*\***

Earn 1, 2, or 3 units.

College Credit Connection offers teachers the opportunity to earn **graduate-level semester credits** through WASC accredited Vanguard University of Southern California. These professional development courses offer **potential professional development, recertification, and salary step advancement.**

*For more information on how to earn college credit units by attending the Math Conference at Marina Village in San Diego -- and to Pre-Enroll for units -- please log on to: [www.CollegeCreditConnection.com](http://www.CollegeCreditConnection.com)*

University Representatives will be at Marina Village early on February 3, 2012 for onsite registration, however pre-registration is encouraged

*\*Each semester credit earned is equivalent to 15 hours. CCC/VU credits are acceptable in many states toward educator re-certification and within many school districts for salary advancement. It is the learner's responsibility to determine if a CCC/VU course will be accepted by their district before enrolling.*



**\*\*Fees for the conference are paid separately to GSDMC and are not a part of the \$89 unit fee for college credit.**

100 R CC ① ③	K-5 $\pi$ T, $\mathcal{E}$	Rusty <b>Bresser</b> & Caren <b>Holtzman</b> UCSD, La Jolla, CA Using Math Discussions to Develop Computational Fluency Discussions in math class can be a tool for building students' computational accuracy, efficiency, flexibility, and reasoning. This workshop features activities, strategies, and video clips which support teachers in facilitating math discussions in the classrooms	<b>VINEYARD</b>
101 R CC ②	2-5 T $\mathcal{E}$	Leigh <b>Childs</b> SDCOE Retired, San Diego, CA Effective Strategies + Engaging Activities = Numerically Nimble Students "Work smarter, not harder" to improve numeric competence. These strategies promote greater sense-making and participation — also ideal for intervention success and "family math" efforts. A ready-for-immediate-use handout includes engaging activities to enhance mathematical reasoning and improve students' numeric confidence and competence.	<b>MARINE ROOM</b>
102 R CC ① ③ ⑦	3-8 $\pi$ T	Dawn <b>Caine</b> Calvert County Public Schools, Owings, Maryland The Power of Open-Ended Questioning During this session, we will work to achieve 3 goals: (1) Understand what makes a "good question" (2) Learn how to create open-ended questions that promote higher-level thinking (3) Experience and design questions that you can use in class on Monday	<b>E10</b>
103 R CC ① ⑦	5-8 $\pi$ T $\mathcal{E}$ , $\mathcal{A}$	Joanie <b>Commons</b> CVUSD, El Cajon, CA Inquiry in Mathematics: Reawakening Curiosity and Creativity Experience questions that lead to action, not a simple answer. Learn strategies to make "I wonder..." the language of your classroom. Tackle some inquiry level problems. Work with others to take problems from the textbook and open the problems to an inquiry level. Are you curious? Do you wonder if these strategies will increase student learning in your class?	<b>TERRACE</b>
104 R CC ① ④ ⑥ ⑦ ⑧	6-7 $\pi$ T $\mathcal{E}$	Trudy <b>Mitchell</b> Independent, San Diego, CA What is Multiplication Anyway? How Can It Make Sense? Using the Standards for Mathematical Practices, let's explore multiplication and think about ways to help students make sense of it. Multiplication is multiplication whether we are using whole numbers, integers, fractions and decimals. Use connections and representations that you can take back to your classroom. Hands-on leads to Minds-on!	<b>STARBOARD</b>
105 R CC ⑤	6-8 $\pi$ T $\mathcal{E}$	Mark <b>Evans</b> St. Callistus Catholic School, Garden Grove, CA You're Not In Math Class Anymore! Integrating Math Across the Curriculum It is every mathematics teacher's responsibility to help students recognize and apply mathematics in contexts outside mathematics. Connecting mathematics to other subject areas is an exciting way to capture students' interest. This presentation will look at examples of how mathematics can be connected to other subject areas.	<b>E12</b>
106 R CC ⑤	9-12 T $\mathcal{E}$	Janet <b>Perez-Covacevich</b> VUSD, Vista, CA The Foreign Language of Math Math is an intriguing and dreadful subject for many because it either seems like hieroglyphics or some strange language that is not easy to understand. Math is NOT universal and for English learners, "intensive care" is needed. Participate in games, activities and use strategies geared for English learners (ELs) with a focus on those who are behind or low-skilled. Handouts will be provided.	<b>E5</b>
107 R CC ④ ⑤ ⑥ ⑦	6 - 12 $\pi$ T $\mathcal{E}$	Tom <b>Knapik</b> Patrick Henry High School, San Diego Enriching the Mathematics Classroom with Polyhedra This is a presentation on methods for building polyhedra, understanding their properties, and how to incorporate them into a geometry curriculum. Participants will make origami units to be assembled and learn other techniques useful for working with students grades 6 - 12. Handouts and online resources will be shared.	<b>C8</b>
108 R CC ① ③ ⑤	8-9 $\pi$ T $\mathcal{E}$	Kimberly <b>Samaniego</b> SDUSD and UCSD, San Diego, CA Google Your Math: Exploring the Impact of Student Participation in Collaborative Online Environments in Algebra and Beyond I will share how my 10th-grade Algebra 1 students used Google's online environments as a means to dialogue and problem-solve outside the classroom. My action-research results which showed increased levels of practice at home, changes in students' mathematical performances, and evidence of narrowing achievement gaps will also be discussed. Session participants will explore how knowledge-building and motivation theories influenced this project design and how to create and manage collaborative online activities in various math classes.	<b>D8</b>

**CC - Common Core Focus**

- |   |   |
|---|---|
| ① Make sense of problems and persevere in solving them          | ⑤ Use appropriate tools strategically                   |
| ② Reason abstractly and quantitatively                          | ⑥ Attend to precision                                   |
| ③ Construct viable arguments & critique the reasoning of others | ⑦ Look for and make use of structure                    |
| ④ Model with mathematics  | ⑧ Look for and express regularity in repeated reasoning |

R=Repeat     $\pi$ =Gate    T=Title 1     $\mathcal{E}$ =ELL     $\mathcal{A}$ =Administration     $\Psi$ = Featured Speaker

**Continued: Friday, February 3, 2012 • 8:30 am – 9:45 am**

109	8-12 R T $\mathcal{E}$ CC 5 7 8	Christine <b>Escovedo-Hill</b> Montecito HS/RUSD, Ramona, CA Facts, Factors, and Factorability of Polynomials Help your struggling students master the art of simplifying, factoring, and manipulating polynomials of different sizes. Learn strategies and techniques that will allow all your students to successfully factoring $ax^2+bx+c$ , special polynomials, cubic polynomials, multiply polynomials and completing the square.	<b>CORAL</b>
110	3-5 $\pi$ T $\mathcal{E}$ CC 8	Yvette <b>McCauley</b> McGraw-Hill, Fullerton, CA Stephen <b>Batman</b> McGraw-Hill, La Verne, CA *Answers will vary !!! In this session the speaker will lead participants through the discussion process for an open-ended math problem designed for the elementary classroom. We will discuss creating the proper environment and how to lead these discussions so that students can evaluate the thinking of their peers.	<b>E9</b>

**Friday, February 3, 2012 • 10:15 am – 11:30 am**

200	K-2 R T $\mathcal{E}$ CC 1	Alison <b>Williams</b> & Rosanna <b>de la Cruz</b> SDUSD, San Diego, CA Utilizing Mistakes to Make Sense of Problems We will be examining ways in which student errors may be utilized in the primary classroom in order to scaffold student understanding, increase student confidence and participation, and encourage perseverance.	<b>E12</b>
201	2-5 R T $\mathcal{E}$ CC 2	Leigh <b>Childs</b> SDCOE Retired, San Diego, CA Effective Strategies + Engaging Activities = Numerically Nimble Students "Work smarter, not harder" to improve numeric competence. These strategies promote greater sense-making and participation — also ideal for intervention success and "family math" efforts. A ready-for-immediate-use handout includes engaging activities to enhance mathematical reasoning and improve students' numeric confidence and competence.	<b>MARINE ROOM</b>
202	3-5 $\pi$ Title 1 CC 1	Kathleen <b>Strange</b> Pleasant Hill, CA Jennifer <b>North-Morris</b> Tucson, AZ What Textbooks Don't Tell You About Fractions Discover what's missing from elementary textbooks and why fractions are not making sense to students. Learn why visual models of fractions can be confusing and lead to common errors. Session includes a variety of activities so students can compare, add, subtract, multiply, and divide fractions in several ways. Students will not only persevere, they will enjoy and learn from these fraction games.	<b>E5</b>
203	5-8 R T $\mathcal{E}$ , $\mathcal{A}$ CC 7	Debra <b>Coggins</b> Oakland USD, Oakland, CA Laura <b>Kikuchi Blount</b> Audeo Charter School, San Diego, CA Proportionality: Make Use of Structure to Represent, Discuss & Solve Problems Representations such as tables, double number lines, equations, and sketches enable students to model and solve a wide variety of problem situations, thus leading to success with linear functions, unit conversions, similar figures, percents, fractions, etc. Methods for supporting students in "talking math," including constructing viable arguments and critiquing the reasoning of others, will be discussed while exploring familiar contexts such as toys and cereal.	<b>TERRACE</b>
204	6-7 R $\pi$ T $\mathcal{E}$ CC 1 4 6 7 8	Trudy <b>Mitchell</b> Independent, San Diego, CA What is Multiplication Anyway? How Can It Make Sense? Using the Standards for Mathematical Practices, let's explore multiplication and think about ways to help students make sense of it. Multiplication is multiplication whether we are using whole numbers, integers, fractions and decimals. Use connections and representations that you can take back to your classroom. Hands-on leads to Minds-on!	<b>STARBOARD</b>
205	6-12 $\mathcal{A}$ CC 1 2	Bruce <b>Arnold</b> MDTP, La Jolla, CA Refining Formative Assessment Through Diagnostic Testing Formative assessment allows teachers to identify their students' learning needs and then adapt their teaching to address them. MDTP tests and written response items are carefully designed to identify some common misconceptions and make them available to teachers. Participants will experience how to diagnose MDTP test results and written responses to refine formative assessments and guide instructional decisions in their classrooms. Particular attention will be paid to improving students' abilities to reason and communicate effectively about mathematics.	<b>C8</b>
206	7-12 $\pi$ T $\mathcal{E}$ CC 5	Roger <b>Jaffe</b> SDUSD, San Diego, CA Make videos of your lessons and put them online Do you want immediate, positive feedback from your students about their understanding of class content? This session will demonstrate how to create screencast videos of your lectures, lessons, homework solutions, class problems, and anything else you'd like students to watch. Learn how to upload videos to YouTube, or other websites for 24/7 viewing by students. Video podcasting will also be demonstrated. A list of websites, resources, and tools used to create screencasts for little or nominal cost will be presented and available online.	<b>D8</b>

**CC - Common Core Focus**

- |   |   |
|---|---|
| 1 Make sense of problems and persevere in solving them          | 5 Use appropriate tools strategically                   |
| 2 Reason abstractly and quantitatively                          | 6 Attend to precision                                   |
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**Continued: Friday, February 3, 2012 • 10:15 am – 11:30 am**

207	8-9 T $\mathcal{E}$ , $\mathcal{A}$	Elizabeth <b>Phillips</b> Michigan State University, East Lansing, MI Developing Students' Algebraic Thinking and Reasoning By engaging in specific algebraic tasks and examining classroom discourse, we will look at a promising organizing theme for the algebra curriculum that highlights the "big ideas" in algebra and promotes deep understanding and reasoning as reflected in the Mathematical Practices in the Common Core State Standards. We will also look for evidence of the Mathematical Practices in developing students' algebraic reasoning and understanding.	<b>E10</b>
<b>CC All</b>			
208	8-12 R T $\mathcal{E}$	Christine <b>Escovedo-Hill</b> Montecitio HS/RUSD, Ramona, CA Facts, Factors, and Factorability of Polynomials Help your struggling students master the art of simplifying, factoring, and manipulating polynomials of different sizes. Learn strategies and techniques that will allow all your students to successfully factoring $ax^2 + bx + c$ , special polynomials, cubic polynomials, multiply polynomials and completing the square.	<b>CORAL</b>
209	10-12	John <b>Berray</b> West Hills High School, Santee, CA How Much Does Your Birthday Cost? Why use a stale textbook when we can energize a lesson on sequences and series with current data from the web (and get to talk about the spirit of creativity and ingenuity)? Using the site <a href="http://iwearyourshirt.com">iwearyourshirt.com</a> , we will have students making sense of the math behind one man's successful marketing strategy, all the while coaching them to persevere through the questions that scream wildly from this scenario.	<b>E9</b>
210	General	Brian <b>Shay</b> Canyon Crest Academy, San Diego, CA Using Holistic Problems to Support the Mathematical Practices Leaders and Fellows from Math for America San Diego will introduce attendees to holistic problems, demonstrate their ability to support the Common Core Standards eight mathematical practices, and discuss the implementation of holistic problems. This session will focus on Algebra and Geometry multi-layered problems to enrich any level of class.	<b>VINEYARD</b>
<b>CC 1</b>			

**Friday, February 3, 2012 • 12:30 pm – 1:45 pm**

<b>KEYNOTE ADDRESS</b>	300	K-12	Robert F. <b>Sawyer</b> UC Berkeley, Professor Emeritus, Oakland, CA Berkeley Freshmen Discover the Difference Between a Million and a Billion Even the best of students struggle with number sense—what is big, what is small, how to recognize the difference. Nearly all UC Berkeley freshmen have completed calculus. They have mastered the formalities of mathematics and abstract reasoning. If they struggle, then it is fair to say that nearly everyone struggles! Listen to stories of how difficulty with the concept of number invades STEM careers, the real world, and the political world. Take away some ideas about how to promote number fluency in K-12 classrooms.	<b>STARBOARD</b>
	<b>CC 1</b>			
	301	K-2 R T $\mathcal{E}$	Alison <b>Williams</b> & Rosanna <b>de la Cruz</b> SDUSD, San Diego, CA Utilizing Mistakes to Make Sense of Problems We will be examining ways in which student errors may be utilized in the primary classroom in order to scaffold student understanding, increase student confidence and participation, and encourage perseverance.	<b>E12</b>
	302	5-8 R T $\mathcal{E}$ , $\mathcal{A}$	Debra <b>Coggins</b> Oakland USD, Oakland, CA    Laura <b>Kikuchi Blount</b> Audeo Charter School, San Diego, CA Proportionality: Make Use of Structure to Represent, Discuss & Solve Problems Representations such as tables, double number lines, equations, and sketches enable students to model and solve a wide variety of problem situations, thus leading to success with linear functions, unit conversions, similar figures, percents, fractions, etc. Methods for supporting students in "talking math," including constructing viable arguments and critiquing the reasoning of others, will be discussed while exploring familiar contexts such as toys and cereal.	<b>TERRACE</b>
	303	6-12 $\mathcal{A}$	Bruce <b>Arnold</b> UCSD, La Jolla, CA Developing Formative Assessment Through Diagnostic Testing Formative assessment allows teachers to identify their students' learning needs and then adapt their teaching to address them. MDTP tests are carefully designed to identify some common misconceptions and make them easily available to teachers. MDTP Written Response Items allow teachers to probe misconceptions more deeply. Participants in this session will experience how MDTP results can guide instructional decisions.	<b>C8</b>
	304	8-9 R $\pi$ T $\mathcal{E}$	Jennifer <b>North Morris</b> Casio Education, Tucson, AZ    John <b>Berray</b> West Hills High School, Santee, CA No Talking in My Classroom (by the teacher): Getting Students to Think & Collaborate Come join the fun! You will experience creative, easy ways to get your students collaborating about mathematics and be able to implement them immediately when you return to the classroom. Once we've warmed up, we will tackle a problem that will involve data collection, modeling data, and explaining its significance using pencil and paper and the Casio PRIZM graphing calculator.	<b>D8</b>

**CC - Common Core Focus**

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|---|---|
| ① Make sense of problems and persevere in solving them          | ⑤ Use appropriate tools strategically                   |
| ② Reason abstractly and quantitatively                          | ⑥ Attend to precision                                   |
| ③ Construct viable arguments & critique the reasoning of others | ⑦ Look for and make use of structure                    |
| ④ Model with mathematics  | ⑧ Look for and express regularity in repeated reasoning |

R=Repeat     $\pi$ =Gate    T=Title 1     $\mathcal{E}$ =ELL     $\mathcal{A}$ =Administration     $\Psi$ = Featured Speaker

**Continued: Friday, February 3, 2012 • 12:30 pm – 1:45 pm**

- 305 10-12 Patricia **Brooks** Del Norte High School, San Diego, CA **E9**  
 R Sense Making and Problem Solving Using TI PublishView Documents  
 CC ① Participants will be introduced to TI PublishView interactive documents and how these documents can be used by students to make sense of problems. Students can access and interact with this documents over the web.
- 306 5-6 Diana **Hock & Cara Dunn** The Child’s Primary School, San Diego, CA **MARINE ROOM**  
 R  $\pi$  Title 1 Using Benchmark Numbers to Access Fraction, Decimal, and Percent Understanding  
 CC ② How can we make understanding fractions, decimals, and percents easier for our students? In this session, we will explore how benchmark numbers such as 0, 1/2, and 1 are powerful tools that allow students to reason abstractly and quantitatively. Through activities, video, and discussion, you’ll leave with a deeper understanding of benchmark numbers, how students can use these numbers conceptually, and how you can incorporate these ideas into your classroom tomorrow!
- 307 K-1 Nona **Loftis** Carlsbad USD, Carlsbad, CA **E5**  
 T  $\mathcal{E}$  Developing “Teness” in Young Children  
 CC ④ Discover ways to build "tenness" through engaging hands-on activities with a focus on counting, operations, and place value. Participants will work with the standard Model with Mathematics as they learn how young children can apply their knowledge of "tenness" in order to solve problems in their world.

**Friday, February 3, 2012 • 2:00 pm – 3:15 pm**

- 400 General Megan **Holmstrom** Chadwick School, Palos Verdes Peninsula, CA **E12**  
 CC All Habits of Mind  
 Research in mathematics education, specifically how students think mathematically, continues to support the balanced approach to mathematics education. In the workshop we will explore the changes in math education, including Habits of Mind. Students' understanding of mathematical ideas can be built throughout their school years if they actively engage in tasks and experiences designed to deepen and connect their knowledge. Mini-lessons that incorporate discovery-based, guided instruction will be presented. The lessons presented are intended to be take-home lessons for use in your own classrooms.
- 401 K-12 Jameson **Rienick** SDCOE, San Diego, CA **STARBOARD**  
 $\mathcal{A}$  Common Core California Standards Mathematics (CCCS) 101  
 CC All CCCS 101: Come join K-12 mathematics advocates to learn about the new Common Core California Standards! Learn about the standards, including the Mathematical Standards, and how they are organized. Compare the current standards to the new Common Core California Standards for Mathematics. Begin the implementation process by discussing how to ensure that all students will progress toward these new standards.
- 402 K-12 John (Zig) **Siegfried** SDSU / UCSD, San Diego, CA **E9**  
 CC ① Productive Disposition: The Missing Component of Mathematical Proficiency  
 To achieve in mathematics, students need content knowledge, but they also need productive dispositions. People with productive dispositions tend to see sense in mathematics, to perceive it as both useful and worthwhile, and to believe that steady effort pays off. Unfortunately, productive disposition is a complicated and oft-ignored construct. This session will include videos of people productive engaged with mathematical tasks and discussions about how productive dispositions can be developed and supported.
- 403 K-2 Laura **Choate** Fallbrook Union Elementary Fallbrook, CA **TERRACE**  
 R T  $\mathcal{E}$ ,  $\mathcal{A}$  Games to Develop Number Sense: Creating Student Success  
 CC ④ Be more efficient and selective about time devoted to number. A ready-to-use handout of highly engaging, adaptable activities and instructional strategies will help you enhance number sense and build confidence in your students.
- 404 3-5 Louise **Vandling** Vista USD (Retired), Vista, CA Judy **Bippert** SDSU (Retired), San Diego, CA **E5**  
 R  $\pi$  T  $\mathcal{E}$ ,  $\mathcal{A}$  Investigations that extend and enrich Classroom Instruction  
 CC ① ② ③ Students retain learning they have discovered for themselves. This session will focus on the use of investigations students have selected to explore dealing with probability and statistics. The investigations are based on Blooms levels and promote mathematical reasoning while encouraging students to make sense of problems and persevere in solving them.

**CC - Common Core Focus**

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**Continued: Friday, February 3, 2012 • 2:00 pm – 3:15 pm**

405	5-8	Mindy <b>Lewis</b> , Jessica <b>Pierson</b> & Lisa <b>Lamb</b> SDSU, San Diego, CA	<b>MARINE ROOM</b>
<b>CC 1</b>		Children's Conceptions of and Strategies with Integers We will look at look different types of integer problems and why they may be problematic for students as we share data and video from a San Diego State University study of children's conception of integers and operations with integers. We will discuss which problems were difficult for a majority of students and what conceptions and strategies successful students invoked. Teachers could build classroom discussions around these productive strategies to help deepen their students' understandings.	
406	6-7 $\pi$ T $\mathcal{E}$	Joanie <b>Commons</b> CVUSD, El Cajon, CA	<b>E10</b>
<b>CC 7 8</b>		Discrete Math: What counts and how to count it Discrete math problems provide an intriguing context to improve problem solving, practicing arithmetic, developing algebra concepts, and eliciting advanced mathematical ideas and formalism. Experience classroom-ready problems on finding the greatest common factor, permutations, combinations (probability), iteration (can we generalize to a formula?), and recursion (going backwards to go forward).	
407	6-7 $\pi$ T $\mathcal{E}$	Cheree <b>McKean</b> & Jessica <b>Borah</b> Vista USD, Vista, CA	<b>CORAL</b>
<b>CC 4</b>		"Teaching the f-word" - or "Fractions can be Fun!" Fractions should not be a dreaded topic for students or for teachers! This session will focus on helping students develop understanding of fractions using conceptual teaching strategies. Participate in a hands-on session using student-made cuisenaire rods, string, story-telling and other materials you might find in your classroom. You will leave this session with materials and practical strategies to easily implement the very next day.	
408	6-12	Vahid <b>Fozi</b> & Bryan <b>Meyer</b> HTHNC, San Marcos, CA	<b>C8</b>
<b>CC 1 4</b>		What we've learned teaching math through a project-based approach In this session, learn to design and implement Project Based Learning (PBL) in mathematics. We will discuss our experiences developing and implementing PBL units. In particular, we will identify our challenges as well as some successful (and less-than-successful) strategies that have emerged. We will share several PBL units.	
409	8-10 R $\pi$ T $\mathcal{E}$	Jennifer <b>North Morris</b> Casio Education, Tucson, AZ    John <b>Berray</b> West Hills High School, Santee, CA	<b>D8</b>
<b>CC 1 4 5</b>		No Talking in My Classroom (by the teacher): Getting Students to Think & Collaborate Come join the fun! You will experience creative, easy ways to get your students collaborating about mathematics and be able to implement them immediately when you return to the classroom. Once we've warmed up, we will tackle a problem that will involve data collection, modeling data, and explaining its significance using pencil and paper and the Casio PRIZM graphing calculator.	
410	General	Guershon <b>Harel</b> UCSD, La Jolla, CA    Ovie <b>Soto</b> Patrick Henry High School, San Diego, CA	<b>VINEYARD</b>
		Math for America San Diego Master Teaching Fellowship This session will focus on the Math for America San Diego's Master Teaching Fellowship. The fellowship is a five-year leadership development program funded by the NSF. In essence, teaching in accordance to the framework of this program entails that instruction must maintain the mathematical integrity of the content taught while focusing on the intellectual need of the student. The session will include problem solving activities.	

**Friday, February 3, 2012 • 3:30 pm – 4:45 pm**

500		Dan <b>Meyer</b> Mountain View, CA	<b>STARBOARD</b>
<b>KEYNOTE ADDRESS</b>		Why Students Hate Word Problems The fault lies not with our students but with the quality of the word problems themselves, which have been restricted for too long by the paper they're printed on. As we start to deliver curricula digitally, we need to seriously reckon with three questions. Why should we bother connecting math to the world outside the math classroom? How do teachers and curricula weaken that connection? And how can we strengthen it?	
501	10-12 $\mathcal{E}$	Melissa <b>Hosten</b> Chandler Unified School District, Chandler, AZ	<b>D8</b>
		A Visual Approach to Proof: Supporting ALL Learners Have you wanted to support students' ability to write proofs from both ends to the middle, from the middle out, forward, and backward? Have you had difficulty helping your English Language Learners understand proof? This workshop will provide a hands-on approach to writing proofs that engages all learners. The session will equip teachers to support learners with disabilities, struggling learners, and English Language Learners in writing and understanding proofs.	
502	K-2 R T $\mathcal{E}$ , $\mathcal{A}$	Laura <b>Choate</b> Fallbrook Union Elementary, Fallbrook, CA	<b>TERRACE</b>
<b>CC 4</b>		Games to Develop Number Sense: Creating Student Success Be more efficient and selective about time devoted to number. A ready-to-use handout of highly engaging, adaptable activities and instructional strategies will help you enhance number sense and build confidence in your students.	

**CC - Common Core Focus**

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| <ul style="list-style-type: none"> <li>1 Make sense of problems and persevere in solving them</li> <li>2 Reason abstractly and quantitatively</li> <li>3 Construct viable arguments &amp; critique the reasoning of others</li> <li>4 Model with mathematics</li> </ul> | <ul style="list-style-type: none"> <li>5 Use appropriate tools strategically</li> <li>6 Attend to precision</li> <li>7 Look for and make use of structure</li> <li>8 Look for and express regularity in repeated reasoning</li> </ul> |
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**Continued: Friday, February 3, 2012 • 3:30 pm – 3:45 pm**

- 503 3-5 Heather **Navarro** CUSD, TODOS, Gilbert, AZ **E10**  
 Multiplication: How Concrete Modeling leads to Abstract Understanding in an EL setting.  
 This session will demonstrate how students' work and dialogue reveal their conceptual knowledge of multiplication in an English Language Development setting. The demonstration will include how to analyze work samples and dialogue in order to reveal a students' comprehension of 2 X 2 digit multiplication problems through a small group setting utilizing concrete models. The demonstration will then extend in order to reveal the sequence of a 2 X 2 multiplication lesson; going beyond the analyzing of student work and dialogue to a more practical approach on what to do with this information so that students can build a bridge between their concrete understanding of multiplication and its abstract representations.
- 504 3-5 Louise **Vandling** Vista USD (Retired), Vista, CA Judy **Bippert** SDSU (Retired), San Diego, CA **E5**  
 R  $\pi$  T  $\mathcal{E}$ ,  $\mathcal{A}$   
 CC ① ② ③  
 Investigations that extend and enrich Classroom Instruction  
 Students retain learning they have discovered for themselves. This session will focus on the use of investigations students have selected to explore dealing with probability and statistics. The investigations are based on Blooms levels and promote mathematical reasoning while encouraging students to make sense of problems and persevere in solving them.
- 505 6-9 Don **Balka** President Elect TODOS-Mathematics for All; Saint Mary's College, Notre Dame, IN **E12**  
 $\pi$  T  $\mathcal{E}$ ,  $\mathcal{A}$   
 Using Manipulatives in the Algebra Classroom, Grades 6 - 9  
 Participants will be involved with dice, number tiles, cards, and two-color counters to provide practice on algebra ideas: order of operations, exponents, solving linear and quadratic equations, integer arithmetic, multiplying monomials and binomials, and many others. Materials will be provided.
- 506 6-12 Kristin **DeWit** Hemet High School / HUSD, Hemet, CA Jennifer **Deaton** De Portola Middle School, SDUSD, San Diego, CA **CORAL**  
 $\pi$  T  $\mathcal{E}$   
 CC ⑤  
 Making Secondary Math Fun!  
 Participate in our favorite standards-based stories, songs, games, memorization tricks, activities, and organizational ideas to make 6th-8th grade math, Algebra 1 & 2, Geometry, Trigonometry, and AP Calculus fun. Each participant will receive a free book with all of our favorite ideas. The goal of our presentation is to give teachers PRACTICAL ways to teach the core standards in mathematics while having fun!

**Saturday Mini-Conference – focus on English language learners  
 Community Building, Grade-level Workshops and Developing leadership  
 Saturday, February 4, 2012 • 8:15 am – 1:00 pm**

- 8:15-9:15 Rochelle **Gutierrez** TODOS Strand Plenary Session:  
 ELL Plenary  
 This plenary will kick off the Saturday workshop to consider how to create an equitable and high quality mathematics education for all students – in particular, Hispanic/Latino students – by increasing the equity awareness of educators and their ability to foster students' proficiency in rigorous and coherent mathematics.  
 Dr. Gutiérrez will share the results of her research, which suggest qualities of classroom and school environments that foster equitable and high quality mathematics education. She will also raise concerns about several thoughtful and well-intentioned assumptions about and orientations to this sort of effort.
- 9:30-11:45 Florence **Glanfield** Professor, University of Alberta, Edmonton Alberta Canada  
 ELL K-2  
 Inviting ALL Children to be Mathematicians  
 This session will use video clips of children engaged in talking about mathematical ideas.
- 9:30-11:45 Heather **Navarro** CUSD, TODOS, Gilbert, AZ  
 ELL 3-5  
 Multiplication: How Concrete Modeling leads to Abstract Understanding in an ELD setting.  
 This session will demonstrate how students' work and dialogue reveal their conceptual knowledge of multiplication in an English Language Development setting. The demonstration will include how to analyze work samples and dialogue in order to reveal a students' comprehension of 2 X 2 digit multiplication problems through a small group setting utilizing concrete models. The demonstration will then extend in order to reveal the sequence of a 2 X 2 multiplication lesson; going beyond the analyzing of student work and dialogue to a more practical approach on what to do with this information so that students can build a bridge between their concrete understanding of multiplication and its abstract representations.
- 9:30-11:45 Bob **McDonald** Cartwright ESD / TODOS, Phoenix, AZ  
 ELL 6-8  
 TODOS and Texas Instruments worked together to create a series of lessons utilizing technology which have best practices for teaching EL students imbedded . Come and experience one of these and see video of students working on the same lesson.

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**Continued: Saturday Mini-Conference – focus on English language learners  
Community Building, Grade-level Workshops and Developing leadership  
Saturday, February 4, 2012 • 8:15 am – 1:00 pm**

<b>9:30-11:45</b> ELL 9-12	Melissa <b>Hosten</b> Chandler Unified School District, Chandler, AZ What does it take: How do we engage Latino students in challenging mathematics courses? A disturbing trend was found that showed Latino students disengaging from challenging mathematics courses after taking Pre-Calculus. The school restructured Pre-Calculus to engage Latino students. What does that look like? How did it work? Participants will learn about the project, its results, and experience a restructured Pre-Calculus activity.
<b>10:45-11:45</b> ELL Leadership	Don <b>Balka</b> President Elect TODOS-Mathematics for All; Saint Mary's College, Notre Dame, IN Mathematics Leadership: Sequencing Instructional Change for ELL Students Teachers of English Language Learners need to be well versed in a variety of instructional strategies that teach mathematical concepts and skills at appropriate grade levels and are suitable to overcome language barriers. What are leaders expected to do? Ideas, strategies, and activities will be shared that focus on an answer to the question.
<b>12:00 -1:00</b> ELL Community	TODOS Developing Communities of Practice to Support High Quality Mathematics for ALL Children There is an African saying that it takes a community to raise a child. We believe that it also takes a community to support the professional development of teachers, leaders, coaches, and administrators. In this session we will focus on the community building aspects to support educators in meeting the needs of ALL children.

**Saturday, February 4, 2012 • 8:15 am – 9:15 am**

600		Alexis <b>Harry</b> NASA Aerospace Education Services Project; Dryden Flight Research Center, Edwards AFB "Mass vs. Weight: A Heavy Duty Concept" We often confuse the terms "mass" and "weight" and use them interchangeably even though they have very different meanings. Mass plays a critical role in the activities and experiments performed by the astronauts. Mass does not change whether it is measured on Earth or the ISS. Weight can change depending upon the gravitational pull such as on the Moon where weight is reduced to one-sixth that of on Earth. Each activity in the Mass vs. Weight series demonstrates the difference between mass and weight by comparing results with video clips filmed by astronauts performing similar activities onboard the ISS. Students perform the activities in the classroom, record, analyze, and interpret their data. Following data analysis, they observe video of astronauts performing similar demonstrations on the ISS. The activities focus on Newton's Second Law of Motion.	<b>C8</b>
601	K-6	Jessica <b>Pierson</b> & Melissa <b>Bird</b> SDUSD, San Diego, CA Charity <b>Silvas</b> SDUSD, San Diego, CA Tools for Improving Mathematics Discourse in Your Classroom One of the less obvious but most challenging aspects of teaching is the interactional and responsive work of teaching—how we work with and respond to students in-the-moment. And the primary tool for this responsive work of teaching? Discourse. In this presentation we present findings from our own classroom research and larger SDSU research studies to better understand how we can use mathematical discourse to support students as they construct and critique mathematical arguments.	<b>D8</b>
<b>CC 8</b>			
602	10-12 $\pi$	Alan <b>Ladner</b> Maranatha HS, Pasadena, CA Making Construction Interesting in High School Geometry Starting with the basic constructions, students learn to apply these to draw triangle and to discover properties of the incenter, orthocenter, centroid, plus some others. Handouts for a complete unit provided.	<b>E12</b>
<b>CC 6</b>			

**Saturday, February 4, 2012 • 8:15 am – 10:15 am**

650	K-2 $\pi$ T $\mathcal{E}$	Vicki <b>Jacobs</b> SDSU, San Diego, CA Extending Children's Mathematical Thinking AFTER a Correct Answer What happens after a correct answer is given? In many cases, the mathematical conversation ends! In this session, we will use video and written work of K-2 children to explore why mathematical conversations can (and should) continue after correct answers. We will focus on categories of teacher moves that are likely to be productive in helping children deepen their understandings and make connections to other mathematical ideas related to number sense and place value.	<b>MARINE ROOM</b>
651	4-8 $\pi$ Title 1	Dawn <b>Caine</b> Calvert County Public Schools, Owings, Maryland Don't Just Do Math - USE Math! A sign hangs by my desk reminding me to "Help More by Helping Less!" What??? How can that possibly make sense? Think about it... How many real-world situations have all of the information sorted and available in one place? Hmm... none?! The new Common Core Math Practices focus on the math habits our students should be developing to solve real equations. Come learn classroom strategies designed to strengthen these math Practices.	<b>CORAL</b>
<b>CC All</b>			

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**Continued: Saturday, February 4, 2012 • 8:15 am – 10:15 am**

652 10-12 Don **Mackay** & Laura **Webb** High Tech High International, San Diego, CA **VINEYARD**  
 Using 3D geometry and vector algebra to determine if a molecule can be a greenhouse gas  
**CC AII** In this workshop, you will participate in several activities both real and virtual that investigate charge interactions, resonance, periodic motion, and vector geometry. These activities can be adapted to various levels, from middle school through high school. At the conclusion of the project, students can explain at a fundamental level why carbon dioxide in the atmosphere is a greenhouse gas, but nitrogen is not and why water vapor absorbs infrared light far more efficiently than carbon dioxide.

**Saturday, February 4, 2012 • 9:30 am – 10:30 am**

701 4-8 Nancy **Paulson** San Marcos Middle School, San Marcos, CA **C8**  
 $\pi$  T  $\mathcal{E}$  Fun Factoring - Model Multiplication and Factoring with Math Games  
 In this hands-on workshop participants learn unique, multiple representation strategies, and motivating games using multi-sided dice and cards, for prime factoring and for factoring fractions to find LCM and GCF. Never use a Multiplication Chart again! Learn to to get students to view and decompose numbers, in a “different” way, one that leads to success in Algebra and higher mathematics. Strategies can be extended, using the distributive property, for factoring of polynomials and quadratics.

702 10-12 Susan **Addington** & Madeleine **Jetter** CSU San Bernardino, San Bernardino, CA **E12**  
**CC 2** Moving beyond Euclid: Reasoning Transformationally  
 Euclid’s geometry was based on a philosophy of static and unchanging ideal objects. Transformational geometry, a 20th century approach to the same objects and facts, is dynamic, based on motion. This session will present an introduction to thinking transformationally, using rotations, reflections, translations, dilations, and other transformations. The session will include hands-on and kinesthetic activities, demonstrations using dynamic geometry software, examples of proofs in transformational geometry, and a glimpse of transformational thinking in algebra.

703 10-12 Su **Scott** EUSD, Escondido, CA Laura **Barker** SSD, Santee, CA **D8**  
 GPS and Student Engagement  
 The iQUEST project provides professional development to enhance classroom learning experiences with Information and Communication Technology (ICT) resources including visualization tools, interactive games, online collaboration, videoconferencing, and open source applications. Supporting middle school science teachers to engage students in investigations that lead to deeper understanding of scientific concepts. ICT-enhanced lessons, developed by project teachers, will promote student readiness, interest, and participation in STEM fields. Project teachers share their resources as they encourage your classroom creativity.

**Saturday, February 4, 2012 • 10:45 am – 11:45 am**

801 K-12 Ivan **Alba** Learning is Power, San Diego, CA Elena **Lujan-Alba** SDUSD, San Diego **C8**  
 $T$   $\mathcal{E}$ ,  $\mathcal{A}$  Building an Algebraic Focus to Arithmetic  
**CC 6 7** This session will help teachers ensure that students are ready for the rigors of Algebra in middle school by focusing on meaning-centered algorithms in arithmetic. Learn what your teacher never taught you about math that will make it easier for students and teachers to compute with fluency.

802 5 - 8 Pat **Harcourt** & Rachel **Kennison** COSEE West UCLA, Los Angeles **D8**  
**CC 2 5 7** STEMing the Flow: Exploring Ocean and Coastal Data with Students  
 We will address the math standards by presenting activities and lesson plans for using Southern California Ocean Observing System data, graphs, and resources to teach concepts and skills on graphing, analyzing, and interpreting data sets. Participants will receive resources and information and will try out the activities. The presentation will include how to access on-line data from Southern California ocean and coastal areas.

803 10-12 Scott **Washburn** Redlands USD, Redlands, CA **E12**  
 $\pi$  Exponential Growth and Decay  
**CC 5** I will be using the TI Nspire Calculator and Navigator in order to present, solve, and go over 3 word problems involving exponential growth and decay. They are problems usually addressed in Algebra II high school mathematics. Also I will be using temperature probes to study the exponential decay pattern of ice melting in water, that science teachers would appreciate.

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**Saturday, February 4, 2012 • 10:45 am – 12:45 pm**

850	General $\pi$ T $\mathcal{E}$	Meera <b>Varigonda</b> California Project Learning Tree Statewide Program Michelle <b>Raymond</b> Crawford Educational Complex, SDUSD, San Diego, CA Investigating Your School's Ecological Footprint with Project Learning Tree The Project Learning Tree program supports the development of students' critical thinking skills through investigations of environmental issues. PLT Greenschools! - a new PLT program - helps students take a look at their school's environmental footprint and involves math and teamwork! Come hear about how to involve your school and take home materials to get started.	<b>VINEYARD</b>
<b>CC 1</b>			
851	4-7 $\pi$ T $\mathcal{E}$	Nadine <b>Bezuk</b> SDSU, San Diego, CA Steve <b>Klass</b> Encinitas Union SD, Encinitas, CA Helping Students Reason about Fractions Are your students struggling with fractions? Can they use number lines to reason about fractions? This session will investigate ways to strengthen students' understanding of fractions and reasoning about the big ideas of fractions, including fraction concepts, order, and equivalence. We'll use a variety of models, specifically including the number line and fraction circles, and we'll explore connections between fraction reasoning and understanding the meaning of variables.	<b>MARINE ROOM</b>
<b>CC 2</b>			
852	6-8	Madeleine <b>Jetter</b> & Susan <b>Addington</b> CSU San Bernardino, San Bernardino, CA Teaching Advanced Place Value and Decimals with Metric System Tools and Manipulatives Place value and the metric system are both based on a system of units that increase by powers of 10. Teaching them together helps make sense of both. The activities in this session use readily available tools and manipulatives: meter sticks and tape measures and base 10 blocks. Topics will include; Number sense with big and small numbers, Estimating and rounding, Decimals and percents, Arithmetic with decimals, and Scientific and exponential notation.	<b>CORAL</b>
<b>CC 2 5 6</b>			

**Saturday, February 4, 2012 • 12:00 pm – 1:00 pm**

900	6-12	Dave <b>Massey</b> San Diego Science Alliance (SDSA), San Diego, CA Exploring STEM Careers This is an introduction and review of curriculum which incorporates math and science standards in motivating high interest projects such as Sea Perch and Kid Wind. These are examples of programs which come with teacher training, equipment to take back to school, and a competition or challenge event enabling students to apply core understandings.	<b>C8</b>
901	6-12	Rong-Ji <b>Chen</b> Assistant Professor, CSUSM, San Marcos, CA New and old Internet tools for mathematics teaching and learning Do you hope to create a technology-supported learning environment? Are you interested in establishing a community of learners where they actively participate in collective learning? Come and explore how new and old Internet tools can help you provide opportunities for students to create mathematics objects, share their thinking, critique the reasoning of peers, and discuss mathematics concepts and problem-solving strategies. Let's also discuss the pros and cons of technology in mathematics teaching and learning.	<b>D8</b>
902	5-6 R $\pi$ Title 1	Diana <b>Hock</b> & Cara <b>Dunn</b> The Child's Primary School, San Diego, CA Using Benchmark Numbers to Access Fraction, Decimal, and Percent Understanding How can we make understanding fractions, decimals, and percents easier for our students? In this session, we will explore how benchmark numbers such as 0, 1/2, and 1 are powerful tools that allow students to reason abstractly and quantitatively. Through activities, video, and discussion, you'll leave with a deeper understanding of benchmark numbers, how students can use these numbers conceptually, and how you can incorporate these ideas into your classroom tomorrow!	<b>E12</b>
<b>CC 2</b>			
903	10-12 $\pi$	Mike <b>Lutz</b> Bakersfield, CA Going Beyond Formulas With Exponential Functions Compound Interest is often taught simply as plugging into equations. We will utilize TI-Nspire technology to make sense of exponential functions and create mathematical models in meaningful contexts involving transformations of the basic $y=b^x$ function.	<b>E9</b>

**CC - Common Core Focus**

- |   |   |
|---|---|
| 1 Make sense of problems and persevere in solving them          | 5 Use appropriate tools strategically                   |
| 2 Reason abstractly and quantitatively                          | 6 Attend to precision                                   |
| 3 Construct viable arguments & critique the reasoning of others | 7 Look for and make use of structure                    |
| 4 Model with mathematics  | 8 Look for and express regularity in repeated reasoning |

R=Repeat    $\pi$ =Gate   T=Title 1    $\mathcal{E}$ =ELL    $\mathcal{A}$ =Administration    $\Psi$ = Featured Speaker

# GSDMC ANNUAL CONFERENCE, FEBRUARY 3-4, 2012: PRE-REGISTRATION FORM

(Print) LAST NAME \_\_\_\_\_ MI \_\_\_\_\_  
 ADDRESS: Street \_\_\_\_\_ Apt. No. \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 Telephone Number (after 7 p.m.) \_\_\_\_\_  
 ( ) \_\_\_\_\_ e-mail address (please use all capitals) \_\_\_\_\_  
 SCHOOL \_\_\_\_\_ DISTRICT \_\_\_\_\_

**DEADLINES: Must be received by January 20, 2012 to claim early registration discount.** Forms received after January 27, 2012 will not be processed. No fax possibility.

**MAIL COMPLETED FORM**, along with check or purchase order (no credit cards accepted), to:

**Rose Ann Morris**  
**1592 Jewel Valley Road**  
**Boulevard, CA 91905**

POSITION:  Teacher  Site Admin.  Curriculum/Staff Developer  Publisher  Stu/Stu Tchr  Other Admin.  Other

GRADE LEVEL:  K-3  6-9  College  Adult Ed  3-6  9-12  Tchr Ed.  Other

### Group Discount Policy

Group discounts are available for our Annual Conference. We look forward to helping you send as many teachers, administrators, parents, and instructional assistants as possible.

Number in Group	Registration Discount
5-10	\$5
11-20	\$10
21 or more	\$15
Send 5 teachers from one site and an administrator from that site attends for free!	

Please complete a registration form for each teacher. A cover page must accompany the registration and should include the names of all who are covered by the group discount, and the name, telephone number, and address of the contact person of the group. A check, copy of a purchase order or requisition, or some indication of how your district or school will pay for the group, must be included. If a check or purchase order is not included, the check or purchase order must be received by January 20, 2012 in order for the group discount to apply. There will be no refunds for group registrations, but you may substitute someone else for any person who cannot attend.

**Send your group registrations to: Rose Ann Morris, on the form.**

### CONFERENCE REGISTRATION FEES:

*(No Friday Only Registration)*

Friday lunch is included in registration.

Early Registration: RECEIVED by January 20, 2012

Late Registration: RECEIVED after Jan. 20 but by Jan. 27

Full-Time College Student: (School \_\_\_\_\_)

(taking 12 or more units & not being paid as a teacher)

Speaker \_\_\_\_\_

Committee Chairperson: Conference & GSDMC Membership \_\_\_\_\_

Committee Chairperson: Conference only \_\_\_\_\_

Fri. & Sat.	Sat. Only	Amount
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

\$110 \$90

\$135 \$115

\$60 \$35

No charge

\$10

No charge

**CMC Membership** ( New  Renewal: # \_\_\_\_\_)

Teacher (\$50)  Student (\$25)

**DISCOUNTS:** GSDMC Life Member: deduct \$10

Group Registration Discount\* (must be received by December 17, 2011)

Pers. Ck. # \_\_\_\_\_  Dist. Ck # \_\_\_\_\_  Sch. Ck. # \_\_\_\_\_  Dist. PO # \_\_\_\_\_

Amount Enclosed \$ \_\_\_\_\_

### On-Site Registration

Regular Registration

Full-Time College Student

Fri/Sat

\$135

\$60

Sat Only

\$115

\$35

No Friday only

Registration

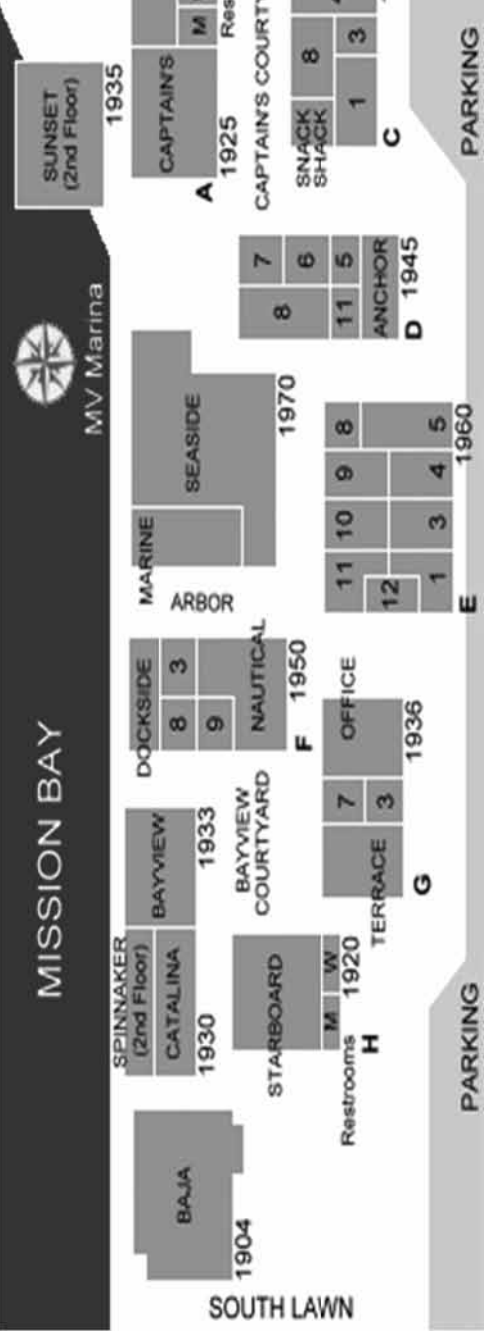
Registration Questions:

email: [greatersdmc@gmail.com](mailto:greatersdmc@gmail.com) 619-766-4593

**Please make a copy of this registration form so that you can keep the brochure intact. Program changes will be detailed in a "Changes to the Program" sheet provided on the day of conference.**

# Map of the Rooms Exhibit Hall Seaside Room

**Fri: 7:45 am – 5:30 pm**  
**Sat: 8:00 a.m. – 1:30 pm**



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## Thanks to the following volunteers for all their hard work in putting together this GSDMC 2012

<b>Cathy Williams</b> Conference Chair	<b>John Guseman</b> Signs, posters	<b>Jameson Rienick</b> Joannie Commons Common Core Strand
<b>Nancy Paulson</b> Program Chair	<b>Paul Bixler</b> Student Hosts	<b>Rose Ann Morris</b> On-site and Pre-Registration STEM Focus Strand
<b>Chris Halter</b> Brochure	<b>John (Zig) Siegfried</b> Student teacher registration	<b>Bruce Arnold</b> Program Committee
<b>Tina Shinsato</b> Finance	<b>Daryl Stermon</b> Technology	<b>Carol Giesing</b> On-site Registration
<b>Rick Willard</b> Commercial Exhibits	<b>Carole Manderson</b> Catering	<b>Brian Lawler</b> TODOS (ELL) Strand
<b>Reed Moore</b> Equipment		

## Hotel Reservation Info

Accommodations have been reserved for conference participants at the hotels named below. **Reservation requests should be made to the hotel.** If reserving by phone, mention that you are with the GSDMC Conference to get the conference rate (tax not included). **ASK FOR GSDMC RATE.**

<b>Hyatt Regency Mission Bay</b> 1441 Quivira Road, San Diego, CA 92109 Fax: (619) 221-4841 <b>Room rates from \$159</b> Call Cherise Wilson <b>619-221-4833</b> Email: Cherise.Wilson@Hyatt.com Reference GSDMC 2012 Conference Reservation rate available until January 30, 2012 Transportation San Diego Lindbergh Airport located 5 miles, 15 minutes from hotel.	<b>THE DANA ON MISSION BAY</b> 1710 Mission Bay Drive San Diego, CA 92109 Fax: (619) 222-4031 <b>Rates: \$119 per room, \$18 parking, and tax</b> To make Reservations and get more details: <b>Call (800) 445-3339 or (619) 222-6440</b> Online Registration: <a href="http://www.thedana.com">www.thedana.com</a> Attendee Code: 0212GRTRSD
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Registration cut off date: January 3, 2012