



CSUS MATH PROJECT NEWS

October 7, 2001

"Never tell people how to do things. Tell them what to do and they will surprise you with their iingenuity."
--George Patton

To ALL CSUSMP Fellows and Friends

I write this to each of you who have been to one of our 16 institutes over the last 3 summers, and to those other friends of CSUSMP who have been added to our mailing list. Lately, I have been focusing on hopeful thinking, and I sincerely hope, in this troubled time, that this letter finds you and your family well and happy. Below is our latest news in our seemingly small part of this Earth. I know all I can do is go on and try to make this part of the world in which I live the best I can make it. Some of that work for me is finding ways to reconnect with all of you, helping to further our common goal of improving the teaching and learning occurring in our classrooms. I hope something in this newsletter will help you to remember to reflect about the importance of your work for each of your children. They are our best hope.

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Shining a Flashlight... by Debbie Stetson

Something struck me over the course of observing and teaching in 3 institutes this summer. I reconsidered how to encourage more than the same 3 hands to go up, about how to get more students to understand more deeply, about how to ask something more specific than, "How many of you understand why that works?" I don't remember exactly which summer institute participant coined the phrase, or even during which institute it occurred, but I do remember a discussion of using questioning to "shine a flashlight" on just the right part of mathematics in order to lead students to see connections. During problem solving sessions this last summer, many learners in the room were able to understand the chain of reasoning, because we were all looking in the same direction, in the direction where the instructor shone the light. With the light shining on the idea, students can focus on the idea, on the underlying mathematics and make the connections for themselves. One of my goals for my own teaching as a result of the
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ASILOMAR CONFERENCE

If you haven't been to this conference, find a way to go. It offers a wide variety of workshops, talks and interactive discussion of issues in a beautiful setting at the Asilomar Conference Grounds, Nov. 30 - Dec. 2. The many ideas you will hear, the kindred spirits in attendance and the fresh open surroundings will inspire you to reflect about new things to try in with your class. CSUSMP fellows find it a great place to reconnect. As we have in the past years, we will co-sponsor an Affiliate Gathering with U.C. Davis Mathematics Project and with S.A.M.E. Information about the location of our gathering will be available when you register. If you would like more information about the conference, please go to <http://www.cmc-math.org/ASIL>. Former CSUSMP fellows who are presenting include:

Chris Borris , Karen Baum, Maia Fjelland , Glen Odabashian, & Jeanne Shimizu
Friends of CSUSMP and UC Davis MP and SAME will be presenting as well including Pat Duckhorn, Brian Lim, Ken Johnson, Susan Green, Tom Sallee, Nancy Aaberg, Rick Croom, Rita Johnson, Judy Kysh, Mary Carton, Elizabeth Coyner, Roberta Gehrman, Louise Iverson, and Al Mendle.

institutes this summer, was to try shining the flashlight with questions.

So...a couple of weeks ago, in my algebra classes, I was trying to figure a way to help my students connect what they may have memorized about the procedure for adding fractions with what they know about adding types of money. To begin, I had asked them to add fractions like one third plus one third, and 2 sevenths plus 3 sevenths. I asked them to direct me how to draw pictures signifying what they had just told me were the numerical fractional answers. For the one third, I drew one circle to represent the whole, and asked what to draw next. Someone told me to divide it into 3 pieces, and upon class agreement that 3 pieces were indeed required, I subdivided the whole circle into 3 unequal pieces. The class objected, and someone pointed out that the pieces should be equal parts. I asked questions emphasizing the importance of each third being equal to the others, even in the picture of the one third in the second whole, which was important when combining into a single whole (adding) and then calling that two thirds. Then I asked them how many of them thought my choice in fractions was better than it could have been, trying to get them to consider what sorts of fraction problems were more difficult. Then I shone the flashlight a bit, and said I was going to ask a seemingly unrelated question, but that we would make the connection later. I wrote some amounts of money on the board, 2 nickels, 5 dimes, 3 quarters, 1 dollar, and asked how much money I had.

Just letting them get into it a bit, I went to the board and started adding the numbers of coins muttering to myself, “ $2+5+3+1$ ”, drawing a line under the column of numbers and declaring I had 11. “That’s how much I have, 11!” I challenged them to tell me what was the matter with that. One of my students raised his hand and said that I didn’t get equal parts, to which the class said ohh! I asked how many people thought that student had just made the connection between this money problem and the previous fractions problem. Then I asked who could make up a fraction problem that was analogous to the money problem we did, where we would have to get equal parts before adding. We made up a few problems and went on about the business of connecting the processes of adding numerical fractions to adding algebraic ones. Although a small victory, and will need to be tested over time, but I was happy to hear the “ohs” because I think some students made a connection between what they know about money and what they have memorized about getting common denominators when adding fractions. I was also happy with this because I think my prompt about a “a seemingly unrelated question” was what helped students look for connection. I am not sharing this because I think I have happened upon the best way to teach adding fractions. Rather, I hope it will remind you about something you were going to try in your classroom this school year. Also perhaps, when you are buried in the day-to-day paperwork, in the phone calls and the endless battle with the mimeo machine, you might take just

a moment to remember we all began this craft of teaching—to figure out the best ways to help students learn an idea.

To be honest, writing these thoughts about my lessons is not something I normally do, and it has allowed me to rethink the reasons it may have worked for that class. Thank you for bearing with me and reading this far. If you would like to write to me about something occurring in your classroom, please email me at stetson@csus.edu.

----Debbie Stetson

UPCOMING CSUSMP EVENTS

- Saturday, Oct. 20, Follow-Up Meeting, 9 – 4 at CSUS, Mend 4008
- Saturday, Oct. 20 Graphing Calc. Course, 9 – 4 at CSUS, Free to CSUSMP fellows! Call or email to register.
- Saturday, Nov. 17, Follow-Up Saturday, 9:00 – 4:00 at CSUS
- Saturday, Feb. 9, Follow-Up Meeting, 9 - 4 at CSUS
- Saturday, March 2, SAME Spring Mini-Conference at CSUS Keynote Speaker - Rick West
- Saturday, April 13, Follow-Up Meeting, 9 - 4 at CSUS
- School Visits – Scott Farrand, Rick West and Debbie Stetson will be visiting classrooms providing observation and guest teaching. For those of you who were in our Invitational Summer Institutes, please call to schedule a visit.

GRAPHING CALCULATOR COURSE SATURDAY, OCTOBER 20.

Brian Lim, a professor in the Education Department here at CSUS and the WEB Master for the S.A.M.E. (Sacramento Area Mathematics Educators) has arranged a short course in using the TI-83 graphing calculator to enhance the teaching and learning of algebra and trigonometry. Also the Calculator Based Laboratory system will be used to gather data and to emphasize the connection with science. The instructor will be Stuart Moscowitz from Humboldt State University. Participants will have a hands-on experience as calculators will loaned out for the day. If you have attended any of CSUSMP's institutes in the past, we will register for you and pay your registration fee. If you attended an institute this last summer, you can attend this 1-day short course in lieu of attending our Saturday meeting on that same day. Lunch will be provided as participants will be invited to eat with those teachers attending the regular Follow-Up Saturday meeting for CSUSMP. Both events will be held here at CSUS from 9:00 – 4:00. If you would like more information about the graphing calculator course, please see the information and registration form on the S.A.M.E. website at <http://edweb.csus.edu/projects/same/>. If you would like to attend, you can register as directed at that site, or you can contact us here at CSUSMP. This will count as attending a Saturday meeting. (Over for more info.)

WHAT HAPPENS AT SATURDAY MEETINGS?

We begin each Saturday with a problem usually given to us by Rick West or Scott Farrand. Problems are chosen so that they are accessible to all no matter when they had algebra last. Participants are challenged to be sure of what they know and to attain a solid line of reasoning. During the morning problem solving session, some members of our staff will sit out of the lesson and observe, looking for what is working. After the lesson, the observers will have a peer coaching debriefing discussion with the instructors while the learners of the lesson (you participating teaches) are listening. In this way, participating teachers, after having just been learners, can retrace the lesson from a teacher's perspective, considering ways in which learners were involved, methods of questioning, and methods of pushing the understanding of learners to a deeper level. After the morning problem solving, we will offer break-out sessions particular to different grade levels of the teachers in attendance. These break out sessions also correspond to the separate institutes offered last summer, and are taught by the instructors from those various institutes.

NEXT SATURDAY MEETING: OCTOBER 20, 2001

All are invited to any of our follow-up Saturdays, former participants of our Invitational, Algebra, PreCalculus, and Elementary Institutes, their guests or anyone else reading this newsletter that would like to attend. If you have a colleague at your school with whom you would like to start a peer coaching relationship, or someone your are recommending to one of our institutes, please invite her/him. Remember, if you attended a summer institute with us in 2001, you can earn an additional stipend by attending Saturday Follow-Up meetings. Because we will provide a breakfast munchies and a lunch, please RSVP so that we can order enough food. You can contact Huong Nguyen, our administrative assistant, at (916) 278-4785 or csusmp@csus.edu, or Debbie Stetson at (916)278-5951 or stetson@csus.edu.

MAILING LIST REQUESTS

Would you like to be on our mailing list? If you would like this newsletter mailed to your home, contact us at (916) 278-4785 or csusmp@css.edu.

If you would like an electronic version only and no hard copy, please let us know that also.