



IMPressions

A NEWSLETTER ABOUT THE INTERACTIVE MATHEMATICS PROGRAM®

FALL 2002

Supporting Student Teachers and New Teachers

Nationwide, IMP teachers are establishing themselves as successful educational leaders. In Santa Cruz, California, two IMP veterans, Kathy Anderson and Kevin Drinkard, are finding that many of the skills they used to set up and maintain their IMP classrooms are invaluable in their new positions of supporting California's next generation of mathematics teachers.

Student Teachers

Kathy Anderson, who brought IMP to Santa Cruz County in 1992, has completed her second year as a Supervisor of Teacher Education at the University of California, Santa Cruz. In addition to teaching courses on how to teach, Kathy is responsible

for advising and working with student-teachers whom she places in over half a dozen local schools. She has this to say:

"As I focused on the question of how best to serve my students, I initially had the notion that teaching student teachers how to teach must be radically different than teaching students mathematics. I was also concerned about modeling excellence in teaching and learning where my students were graduate students in education.

I engaged in reflections on my own experiences working with high school students, especially through IMP.

"As a high school IMP teacher, I have been deeply aware of how students feel about themselves and their perceived ability to do mathematics as key to their potential for success. I believe mathematics is essential for all of us, whatever our endeavor. So, as a Supervisor of Teacher Education, my focus is empowering my students to reflect on their own knowledge and experiences, examine teaching strategies that have been shown to be successful, and develop their own distinctive teaching style. I am mindful of the complex and personal nature of teaching, so I take great care to encourage their growth in self-confidence and competence. I strive to create opportunities for students to tap into and develop their own passion and expertise.

"I guide my students to pose questions and seek solutions to problems in order to

continued on page 6 ▶



IMP students, parents, and school board members work on POWs at the Cokeville, Wyoming Math Fair.

Informing Parents

*by Cathy Martin and Alan Olds,
Rocky Mountain Regional Center*

IMP teachers in three schools in the Rocky Mountain Mathematics Leadership Collaborative (RMMLC) have worked with their Leadership Teams in unique ways to inform parents about the Interactive Mathematics Program curriculum.

RMMLC is a project funded, in part, by the National Science Foundation to actively support school improvement in mathematics by engaging the support of school leadership teams, composed of an administrator, parent, counselor, and mathematics teacher leaders. IMP teachers and their leadership team members meet for a two-day Leadership Summit each summer to set goals for their work and to create a plan for that work. One facet of that plan is a focus on how to engage the community in becoming well-informed advocates for standards-based mathematics.

Cokeville High School: Math Fair

After four years of IMP, the leadership team in Cokeville, Wyoming, a small rural community in southwestern Wyoming, wanted to ensure that their

continued on page 2 ▶

INSIDE

3 ACTIVITY:
The Rat POW

4 Regional IMPressions

7 IMP 2002–2003
Inservice Dates
IMP National and
Regional Centers
Contact List

8 Key Comments

PUBLISHED BY



Key Curriculum Press grants teachers the right to reproduce these pages for use in their own classroom and teaching community. For any other uses of this material, please contact Key Curriculum Press. For information about *IMPressions*—or for a free subscription—write Key Curriculum Press or call toll free at (800)995-MATH.

IMPressions is published by Key Curriculum Press each Fall and Spring. We invite readers to send IMP-related ideas and comments to us at:

IMPressions
1150 65th Street, Emeryville, CA 94608
Publisher: Steve Rasmussen
Editor: Lynne Alper
Production and Layout: Caroline Ayres

www.mathimp.org

Informing Parents continued from page 1

community continued to be supportive and informed.

The leadership team held a math fair where students showcased their work on POWs. The fair was scheduled to coincide with a school board meeting taking place at the high school that same evening. School board members, parents, and students, had the opportunity to engage in the POWs and to talk with students and teachers about the mathematics.

A variety of mathematical activities were available at the fair. Some IMP 1 students invited attendees to play their *POW 7* games (*POW 7: Make a Game in The Game of Pig*), including one game that featured a one-armed bandit (simulated via a graphing calculator). Other IMP 1 students challenged parents to help Corey the Camel deliver bananas, to solve *Around the Horn* (simulated by a *Sketchpad™* program), or to read *The Pit and the Pendulum* and view a video of the students' thirty-foot pendulum experiment. IMP 2 students shared findings on their chi-square study, which addressed the question: "Is there really a difference between students involved in school activities and those that are not with respect to their GPAs?" Other IMP 2 students sought help for the owners of a bakery wanting to maximize their profits given certain business constraints. Year 3 students explained their work in *Orchard Hideout* and *Meadows or Malls?* (complete with a three-dimensional model for the *More Cookies* problem). Year 4 students demonstrated their calculator programming skills including a program that teaches guitar playing!

Parents on the Cokeville leadership team arranged for the donation of prizes and refreshments. IMP teachers Richard Pieper and Bill Thompson declared the evening a success. Richard concluded, "Not only was it a great social event for the community but it allowed the students to showcase one of their strengths in mathematics."

Adams City High School: IMP Family Math

Adams City High School in Commerce City, Colorado, is in an urban school district adjoining Denver. With an enrollment of 1400, the school faces the

challenges of a highly mobile multi-lingual student population. Through their first three years of implementing IMP, the high school had struggled to engage parents in supporting their children's work in mathematics. For example, last year's parent night involved only three parents.

This year, Teresa Haft, the parent representative who attended the summer Leadership Summit, and teacher Joyce Whitney became the catalysts for increasing community involvement. In previous years, Joyce had her students set up their *POW 7* games in a lunchtime carnival format where students could play each other's games. She and Teresa brought the idea of expanding this event to the mathematics leadership team. The team decided to invite elementary and middle school mathematics teachers to join them in planning a family math evening that would highlight the K–12 standards-based mathematics programs in the district.

Their collaboration grew into the IMP Family Math Carnival, financed by the principal, which featured a free chili dinner. IMP students showcased their *POW 7* games, and middle and elementary students designed and presented a variety of other mathematics games. Participants received play money to be used to play games. Winnings could be redeemed on hundreds of donated items, and the evening ended with an auction led by IMP teacher Jan Fitzgerald for donated computers and bicycles. Over 450 parents and children attended. In a letter to the leadership team, Superintendent John Lange commended the teachers and team for engaging parents in "taking a serious interest in our math program and becoming more involved in our schools."

Rangely Schools: K–12 Family IMP Nights

Parent involvement has been generated in a different way in Rangely, Colorado, a small rural community in the northwestern part of the state, which is implementing standards-based K–12 mathematics. To

create a structure for sustaining this work, Rangely's IMP Leadership Team includes representatives from the middle and elementary schools. This year, K–12 mathematics teachers have joined together

to host a series of six family math nights. Each evening is organized around a strand of mathematics. Parents have the opportunity to do activities from this strand at each level so that they can see how the curriculum builds from year to year.

To send the clear message that parents should be aware of all levels of the mathematics curriculum, the Leadership Team meeting in

January was held at the elementary school and its focus was on planning an upcoming math night. All elementary teachers, the elementary principal, and middle school and high school mathematics teachers attended the planning session. Before putting the details of the evening together, teachers engaged in a discussion of the "Big Ideas" of geometry and how they build at each grade level.

The January math night, held the following week, focused on geometry. Mel Oliver, a high school IMP teacher, introduced the evening by sharing with parents the teachers' goals for parents: to observe how we're teaching mathematics and to get involved in doing the mathematics. Elementary teachers Diana Bissell, Lorraine Oliver, and Patty Williams led parents in activities that examined coordinate geometry and area. Middle school mathematics teacher Glenda Halcomb and a student provided parents with a model for understanding the formula for the area of a circle. Parents also used cubes to build rectangular prisms as they developed a "layering" formula for volume. At the high school level, three IMP students facilitated a mini-lesson for parents on finding a formula for the area of a triangle (*Homework 6: The Ins and Outs of Area from Do Bees Build It Best?*). IMP teacher Dave Walck encouraged parents to



Rangely Schools host Family IMP Night.

continued on page 6 ►

The Rat POW

The infamous “Rat POW” (*POW 1: Growth of Rat Populations*, in *Year 3*) has perhaps driven as many IMP students (and teachers) to near-madness as any other Problem of the Week. The special character of this POW comes in part from the fact

that, on some level, it is “just” an arithmetic problem, with a single correct answer. But the complexity of the arithmetic and the need for careful organization make it far more challenging than one might expect at first.

Here’s the problem as stated in the *Year 3* text:



Two rats, one male and one female, scampered on board a ship that was anchored at a local dock. The ship set sail across the ocean. When it anchored at a deserted island in late December, the two rats abandoned the ship to make their home on the island.

Under these ideal conditions, it might be interesting to estimate the number of offspring produced from this pair in one year. You should make these four assumptions:

- The number of young produced in every litter is six, and three of those six are females.
- The original female gives birth to six young on January 1 and produces another litter of six 40 days later and every 40 days thereafter as long as she lives.
- Each female born on the island will produce her first litter 120 days after her birth and then produce a new litter every 40 days thereafter.
- The rats are on an island with no natural enemies and plenty of food so no rats will die in this first year.

What will be the total number of rats by the following January 1, including the original pair?

If you have never done this problem before, begin by finding the answer to the specific question posed in its last sentence. As indicated, this is not an easy task. (And you might want to do this even if you have done the problem before, especially if it has been a while.)

Once you have “the answer,” here are some options for generalization and variation to consider:

- Suppose the “ideal conditions” continued indefinitely. How many rats would there be after two years? After three years? After n years?
- What if each litter contained two females and two males (instead of three of each)? Or four of each? Or n of each?
- What if all rats died right when they reached the age of, say, 203 days? (For females born on the island, this would be just a few days after their third litter. It makes sense to assume that the two original rats die after the original female has her third litter.)

Here’s another aspect of the POW to consider: What is the simplest and clearest explanation you can find for your answer to the original problem? Can you write a single equation that describes what’s happening? (*Hint:* Think “recursion.”)

Special challenge: Set up this problem on a spreadsheet so that you can easily modify it to answer variations of the type shown in the first two bullets above.

Comment: It is possible to find a “closed formula” for the number of rats after n years based on the original “ideal conditions.” Finding this formula involves the same linear recursion method often used to get a general formula for the n th term of the Fibonacci sequence.* For the Rat POW, the formula involves the solutions to the cubic equation $x^3 - x^2 - 3 = 0$.

*If you are interested in learning about this method, one good source is the book *Discrete Mathematics and Its Applications*, by Kenneth Rosen (WCB McGraw-Hill, Fourth Edition, 1999), pp. 320-327. The formula for Fibonacci numbers is derived as Example 4 on pp. 322-323.



Regional IMPressions

CALIFORNIA

California IMP is off and running with our new NSF Teacher Retention and Renewal grant, COME-ON (California Outstanding Mathematics Educators Ongoing Network). This past summer, IMP 1, 2, 3, and 4 inservices were offered, as well as workshops for AP Calculus and AP Statistics. In addition, a new workshop was added, called Meaningful Algebra for All Students.

Since the state of California has been pushing for algebra for all 8th grade students, there has been a surge of interest in looking for alternative ways to help students understand algebraic concepts. In response to that interest, we designed a five-day workshop using materials from IMP, Connected Mathematics, Investigations, Shell Centre materials, and NCTM's *Navigating the Standards: Algebra*. The use of manipulatives and technology was incorporated throughout the workshop along with relevant brain research. Issues surrounding equity provided another overarching theme to the week. We see these workshops as a means to reach out to a larger audience, and to increase awareness of IMP and other standards-based curricula.

California IMP teachers continue to be honored by their peers. Jeri Philbrick from Oxnard High School, was chosen as Teacher of the Year for OHS by her teaching colleagues, and was announced as Teacher of the Year for Ventura County. Also from Oxnard High School, Lilia Zambrano was honored by the Ventura County Math Council as an Outstanding Math Teacher for 2002. Jim Short was honored by the same group as an Outstanding Supporter of Math Education for service outside of the classroom in support of math teachers.

HAWAII

In the photo at the right, teachers Rebecca Lowe, from Kapolei High School and Kathleen Frampton, from King Kekaulike High School team up to complete a *Shadows* assignment during an IMP 1 Workshop.



NEW ENGLAND

Cambridge, along with a number of other communities in the Boston area, began using IMP about eight years ago. Since then, Cambridge Rindge and Latin School (CRLS) has undergone considerable changes. Five people have held the title of principal during that time and the position is currently unfilled for next year. The school structure has changed from a comprehensive school serving the entire community into five small schools that are moving towards a self-contained team-based approach to teaching and learning. Paul Lyons, master recruiter and mentor for many who took the "IMP plunge," and whom many of you know

as a co-director of the New England Regional Center, retired from his position as chair of the math department in Cambridge during those years as well.

Amid all these changes, IMP prospers at CRLS through the dedication of the teachers, the conviction they have that IMP is an important alternative to the standard high school math curriculum, and the evidence that they see on a daily basis that it is profoundly effective. Each year IMP graduates from CRLS go to highly competitive schools and universities, including MIT this year.

Doug McGlathery, an MIT alum who has taught in Cambridge for over 20 years, recently completed his eighth year of teaching IMP. "It's hard to remember having a passion for teaching math before IMP. I had plenty of enthusiasm, and I do remember enjoying the roll of being 'the great explainer' and seeing the occasional light bulb go off for kids. But all too often I was only connecting with a small fraction of the students in my classroom. I came to think that for the most part I was asking kids to walk an imaginary line that for many of them didn't go anywhere. IMP was the first curriculum I used which was broad, integrated, and sensible as a four-year strategy for teaching kids math that fits together and has meaningful contexts."

Doug has received a number of visitors in his classroom recently. "Various administrators (including a principal or two), parents, observers from small school organizations, visiting teachers from Japan—it seems folks are very interested in seeing IMP classes. The feedback I get is that people are very impressed with the way the class is run. I tell them that the structure really comes from the curriculum. In the conversations we have in the small school settings, I find that I can be a resource to teachers in other disciplines about facilitating group work and managing heterogeneous classrooms. There is an important coalescence that is beginning to happen in these learning communities and IMP is a significant part of it."

There are challenges. "We need to work at giving IMP a higher profile in Cambridge. We need to reach out to parents, guidance counselors, and 8th grade teachers, and invite more administrators to learn about the program so that it can continue to grow and prosper."

No more imaginary line to nowhere.

NOVA SCOTIA

IMP Director, Lynne Alper [at right in photo], recently visited with several former IMP students in the town of Cheticamp, Nova Scotia. They had completed four years of IMP entirely in French and were anxious to share the list of Canadian colleges and universities where their classmates are enrolled. (See the IMP Web site at www.mathimp.org.)



PENNSYLVANIA

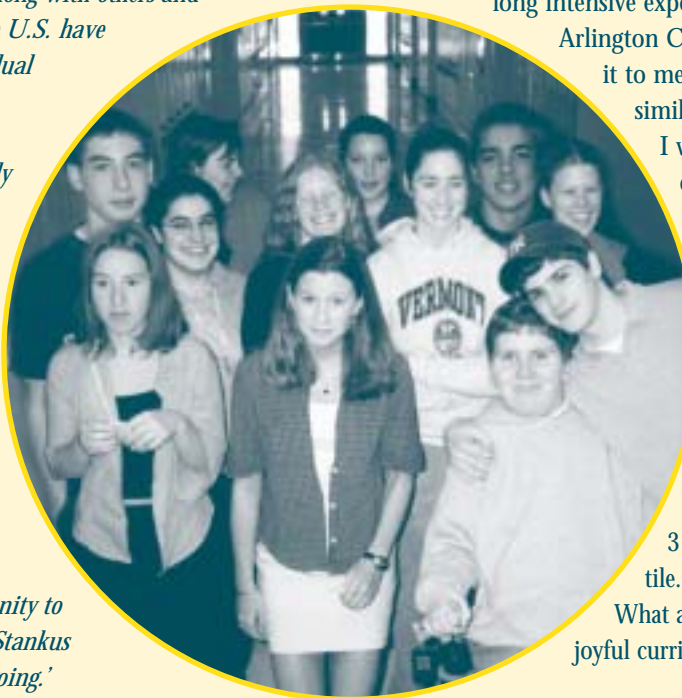
We want to share (with the author's permission) a letter sent from a Lucent Technologies scientist to the Curriculum Supervisor at Strath Haven High School in suburban Philadelphia.

"On January 6, I had an opportunity to visit Strath Haven High School and observe Interactive Mathematics Program classes taught by Mesdames Barbara Stankus and Teddie Psitos. What a way to teach mathematics! Perhaps, I should say to teach any class.

You may wonder how I got the opportunity. My daughter Terri is a math-major sophomore of Bryn Mawr College and wants to be a math teacher. She learned about IMP and contacted Mrs. Stankus. When she invited Terri to observe her class, Terri asked me to come along with her. I am a senior scientist of Lucent Technologies Bell Laboratories and taught at a few colleges, most recently at Columbia. I also taught mathematics at Princeton very briefly after I got my degree. I know mathematics and teaching.

These classes focused on problem-solving skills with real-life problems which students could relate to. I think that was just great. In addition, the way Mesdames Stankus and Psitos taught and how class activities were organized provided an opportunity to learn other skills: teamwork and presentation. Here is a summary of my observations: First, students work as a group. This promotes teamwork and they learn how to get along with others. We hear too often that many young people do not know how to get along with others and manage conflicts, since we in the U.S. have traditionally emphasized individual creativity and excellence. Second, students learn presentation skills. The presentation skill is extremely important no matter what profession a student may get into in the future. It is something we all need more of and one cannot succeed without. I was quite impressed when a high school sophomore explained a math problem with such competence. It was an eye-opening experience. And I hope more subjects be taught this way. I would like to take this opportunity to express my thanks to Mesdames Stankus and Psitos, and to say 'keep on going.'

Sincerely yours, B. Sung Kim, Ph.D."



ROCKY MOUNTAIN

Five ground-breaking mathematics teacher leaders from the Rocky Mountain Region have been recognized as Presidential Awardees for Excellence in Secondary Mathematics Teaching since 1998. Each of the five awardees was the first teacher in his/her school district to implement IMP. Each teacher continues to be involved in leadership roles throughout the region promoting mathematics opportunities for all students.



Richard Pieper (2001, Cokeville High School, Cokeville, Wyoming), Bill Schrandt (2001, Valley High School, Albuquerque, New Mexico), Cathy Martin (1999, South High School, Denver, Colorado), Dottie Kielian (1998, Skyline High School, Longmont, Colorado), and Alan Tennison (1999, Valley High School, Albuquerque, New Mexico).

VERMONT

Patty Heather-Lea finds her students relate their activities to IMP. "Two years ago some of my IMP 3 students were also members of a special class that visited Washington D.C. as part of their week-

long intensive experience. They took a photo of the Arlington Cemetery. When they returned, they gave it to me. They realized that what they saw was similar to the *Orchard Hideout* unit question.

I was pleased that my students were making connections wherever they traveled, even in the midst of much emotional reflection.

"Some of my students also traveled and worked with the Habitat for Humanity program. They came back with a twinkle in their hearts and minds, that they had used the Pythagorean Theorem and helped another community at the same time! In the photo you see [at left], each of my IMP 3 students is 'standing' on one square foot tile...an experience in *Small World, Isn't It?*

What a treasure it is to be involved with such joyful curriculum and emerging mathematicians."

Supporting Student Teachers and New Teachers *continued from page 1*

promote excellence in teaching and learning.

“I am ever mindful of using and modeling best teaching practices as I support my students in their journey as teachers. Throughout the year, I found my IMP education invaluable in my work as a supervisor of student teachers. In class meetings, students are regularly involved in journal writing, discussions, story telling, making presentations, role playing, creating visual products in pairs, small groups, and whole group activities much like IMP classes. After my weekly observation of their classes, I work with each of them as they reflect on their own teaching practice. I continually receive feedback from my students as I watch them in their own classes, listen to their discussions, and read their written work. I am then able to reflect and adapt to their needs as beginning teachers.

“I have learned that teaching students to teach is more like teaching students mathematics than I had initially thought. When students feel valued for what they already know and supported as they grow, they are empowered to accomplish their goals. As I continue my own journey in teaching and learning, I welcome the opportunity to accompany my students on their chosen paths. The challenge in supporting students as they build on their individual strengths is always a unique experience. I appreciate that our journey as teachers is boundless.”

New Teachers

Once hired in Santa Cruz, new teachers are entitled to two years of intensive, collaborative support from exemplary teachers working as advisors for the Santa Cruz New Teacher Project (SCNTP). As a first-year advisor for the SCNTP, Kevin Drinkard draws upon his 13 years of teaching mathematics at Santa Cruz High to help his new teachers improve classroom practice and knowledge of the California Standards for the Teaching Profession. “This year, I’m working with 13 new teachers at five different schools. We meet



New teachers John Simms and Diana Gomez share students’ work with Kevin Drinkard (left).

weekly, and talk about the successful and not-so-successful experiences they’ve had in their classrooms, and how we can learn from both.” Kevin encourages his teachers to take risks. “Teaching-skills don’t emerge from a vacuum. You can’t grow professionally if you’re not willing to try something new,” he says. Part of his job is to organize safety nets for teachers taking such risks and help them anticipate and respond to challenges. “My experience teaching IMP helps me so much in this job,” Kevin observes, “because the IMP curriculum is so innovative. The county-wide partnerships we formed to support each other in bringing an innovative curriculum to our students were crucial to our personal successes.” Kevin is now helping new math teachers in Santa Cruz County form similar partnerships with each other and the mathematical community. Besides meeting with teachers weekly, Kevin organizes monthly seminars for the new math teachers in the county. “As I assess their needs, I find that they want to learn more about exactly those skills that make IMP so powerful and exciting. They’re especially interested in how they can make their classrooms more student-centered.” So far, Kevin has organized seminars on using cooperative groups and exploring alternative forms of assessment, such as portfolios. “These skills can be difficult to establish and maintain. However, they are teachable and learnable, and I admire

the new teachers in Santa Cruz for pushing themselves in this direction.” Kathy’s and Kevin’s experiences in Santa Cruz are not unique. Indeed, nationwide, IMP veterans are pursuing a wide variety of leadership opportunities, from training and inducting the next generation of mathematical leaders, to publishing innovative curriculum, and winning state and national awards for teaching excellence. “These are exciting times to be involved in mathematics education,” says Kevin as he heads off to coach a math teacher at a school in Watsonville. “Let’s share the excitement!” ■

Informing Parents

ask their students to justify and communicate the mathematics when working with them at home. Teachers from the three schools encouraged parents to visit classes to see for themselves what students are learning. While parents were doing mathematics in the cafeteria, students

continued from page 2

in the National Honor Society and the High School Math Club led a night of math fun for younger students in the library.

RMMLC schools all face the challenge of how to support and sustain reform mathematics programs. By working together on a regularly scheduled basis

through school leadership teams, mathematics teachers, administrators, counselors, and parents are able to ensure that their school communities continue to be informed about all the good things happening in reform mathematics classrooms. ■

2002–2003 INSERVICES FOR THE INTERACTIVE MATHEMATICS PROGRAM

Key Curriculum Summer Institutes

IMP with The Geometer's Sketchpad®
Oakland, California July 20–27
For information, call 800-995-MATH or visit
www.keypress.com/pdc.

Arizona Regional Center

For information, please call 480-731-8062.

California Regional Center

IMP 1, 2, 3, 4, Statistics, and Meaningful Algebra,
Berkeley January 15–17
IMP 1, 2, AP Calculus, and Meaningful Algebra,
Oxnard January 29–31

Hawaii Regional Center

IMP 1, IMP 4 January 10–11, April 12

Illinois Regional Center

For information, please call 312-996-2448.

Midwest Regional Center

For information, please call 612-668-2000.

New England Regional Center

IMP 1	September 27, November 1, 22, January 10
IMP 2	October 4, November 8, February 7, March 7
IMP 3	October 3, 27, November 8
IMP 4	September 27, October 18, November 15

New York Regional Center

IMP 1, Bronx	October 5, 19, November 9, December 14, January 18, February 8, March 1
IMP 2, Bronx	October 5, November 2, December 7, January 11, February 1, March 1
IMP 3, Bronx	October 5, November 2, December 7, January 11, February 1, March 1, April 5, May 3

Northwest Regional Center

NW Winter Retreat, Portland	February 6–8
IMP 2, Tacoma	February 21–22
IMP 2, Tacoma	April 25–26
IMP 3, Tacoma	June 23–27

Pennsylvania Regional Center

For information, please see www.gphillymath.org.

Rocky Mountain Regional Center

IMP 1 Immersion	September 19–20
Leadership Workshop 2 (day 1)	September 21
Leadership Workshop 2 (day 2)	November 8
IMP 1–4 Gathering	November 9
Leadership Workshop 2 (day 3)	February 7
IMP 1–4 Gathering	February 8
Leadership Workshop 2 (day 4)	April 25
IMP 1–4 Gathering	April 26
IMP 1	June 16–27
Cognitive Coaching (days 5–7)	June 18–20
IMP 2, IMP 3, IMP 4	June 23–27

IMP National and Regional Centers Contact List

NATIONAL OFFICE/Sherry Fraser

Call: (415)332-3328 Fax: (415)332-3381
email: imp@math.sfsu.edu

OUTREACH COORDINATOR/Lisa Doak

Call toll free: (888)MATH IMP
email: Lisa_Doak@ceo.cudenver.edu

ARIZONA REGIONAL CENTER/Nora G. Ramirez

Call: (480)731-8062 Fax: (480)731-8060
email: nora.ramirez@domail.maricopa.edu

CALIFORNIA REGIONAL CENTER/Margaret DeArmond

Call: (661)827-4511 Fax: (661)827-4592
email: margaret_dearmond@khsd.k12.ca.us

HAWAII REGIONAL CENTER/Kathleen Nishimura

Call: (808)394-1341 Fax: (808)394-1304
email: kathleen_nishimura@notes.k12.hi.us
iris_mizuguchi/OIS/HIDOE@notes.k12.hi.us

ILLINOIS REGIONAL CENTER/Anne Horn

Call: (312)996-2448 Fax: (312)413-7411
email: annehorn@uic.edu

MIDDLE COLLEGE HIGH SCHOOL CONSORTIUM CENTER/ Cece Cunningham

Call: (718)349-4017 Fax: (718)349-4003
email: ceccullen@aol.com

MIDWEST REGIONAL CENTER/Ann Bartel

Call: (612)668-5365 Fax: (612)668-5305
email: ann.bartel@mpls.k12.mn.us

NEW ENGLAND REGIONAL CENTER/Carla Oblas

Call: (617)373-2328 Fax: (617)373-8562
email: oblas@neu.edu

NEW YORK REGIONAL CENTER/Suzanne Libfeld

Call: (718)960-8758 Fax (718)960-8054
email: suzli@aol.com

NORTHWEST REGIONAL CENTER/Brent McClain

Call: (503)431-5545 Fax: (503)916-2725
email: bmccain@ttsd.k12.or.us

PENNSYLVANIA REGIONAL CENTER/Joe Merlino

Call: (215)951-1203 Fax: (215)951-5089
email: merlino@lasalle.edu

ROCKY MOUNTAIN REGIONAL CENTER/Jean Klanica

Call: (303)756-9141 Fax: (303)756-9256
email: jean_klanica@ceo.cudenver.edu

VERMONT REGIONAL CENTER/JoAnn Vana

Call: (802)334-6116
email: gvana@barton.k12.vt.us

NEW BRUNSWICK, CANADA/Marcel Lavoie

Call: (506)453-2326 Fax: (506)453-3325
email: marcel.lavoie@gov.nb.ca

NOVA SCOTIA, CANADA/Antoine Jarvoura

CALL: (902)424-6500 FAX: (902)424-0820
email: jarjoua@ednet.ns.ca

Key Comments

National IMP 2003 Summer Institute

IMP™ with *The Geometer's Sketchpad*® July 20–27

Summer Institutes give you the tools to keep pace with the latest in pedagogy and technology. Taught by experienced IMP teachers who use technology, this institute (at Mills College in Oakland, California), will show you how to integrate *Sketchpad*™ into your IMP teaching. Build skills, confidence, and knowledge with an extraordinary technology experience!

For information about Summer Institutes, on-campus housing, and meal packages, or to receive a Summer Institute brochure, visit www.keypress.com/pdc or call 800-995-MATH.

PDC Summer Institute on IMP and *The Geometer's Sketchpad*

by Joan Lewis, Senior Development Editor, Key Curriculum Press

When you combine IMP teachers with *The Geometer's Sketchpad*, excitement and learning are inevitable. The Professional Development Center Summer Institute 2002 proved the truth of that assertion in a fun, activity-filled 6-day workshop.

After an introductory, creative activity and a few *Sketchpad* basics, Dan Bennett, an experienced *Sketchpad* educator, and Jim Barys, an IMP teacher who uses *Sketchpad* with his students, asked groups to explore the use of *Sketchpad* in the IMP curriculum. Some of us worked through the *Shadows* unit following materials Jim had revised for the Summer Institute. Other concentrated on units in years they will be teaching. By the end of the six days, groups had created:

- demonstrations for units such as *High Dive* and *Orchard Hideout*,
- environments in which first-year students who felt “too old to play with straws” could explore angle and side relationships in triangles, and
- comprehensive lists of when and how *Sketchpad* could improve learning in IMP year 1, including samples of possible student work.

Equally as valuable as the *Sketchpad* learning was the discussion around the projects. IMP teachers are not inclined to “show and tell,” so opinions were expressed about if and when demonstrations or pre-made sketches could be used. And there was lots of discussion about access to computers; stories and strategies were shared that encouraged teachers in school with less access.

The institute will be repeated in the summer of 2003 (July 20–27). If you would like time to learn a great software program and share with other IMP teachers, plan to join us at Mills College in Oakland, California. ■

New!

Interactive Mathematics Program® Classroom Manipulatives Kit

ISBN 1-55953-631-4 C3 | \$349.95 Grades 9–12

This kit, available from Key Curriculum Press, was created to provide teachers with the manipulatives and some of the supplies they will use throughout the four years of the curriculum. It's designed to serve classrooms through all years of IMP. It contains four sets of 250 pattern blocks, one set of 49 overhead pattern blocks, 400 multi-link 1-centimeter cubes, 20 dice, two overhead dice, ten tape measures (centimeter and inch scales), 50 washers (weights), 12 stopwatches, ten mirrors, 20 geoboards (with 500 rubber bands), one overhead geoboard, two colors of dot stickers, non-stretch string, and pipe cleaners.



Interactive Mathematics Program and *The Geometer's Sketchpad* are registered trademarks of Key Curriculum Press. IMP and *Sketchpad* are trademarks of Key Curriculum Press. ©Key Curriculum Press, 2003.

Key Curriculum Press
INNOVATORS IN MATHEMATICS EDUCATION

1150 65th Street • Emeryville • California 94608

Mail Room:
If addressee is unknown, please deliver to an IMP math teacher.

PRSRST STD
U.S. POSTAGE
PAID
PERMIT NO. 470
SANTA ROSA, CA