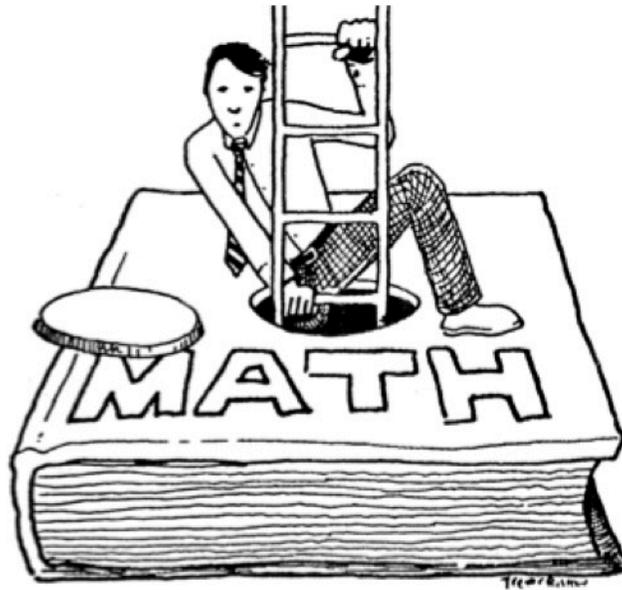


Escape from the Textbook!



A sharing and collaboration conference for middle and high school math teachers who want to escape from the textbook for a lesson, a unit, or an entire course

February 12, 2011
at the Urban School of San Francisco,
and streamed on the Web at www.EscapeTheTextbook.org

Schedule

- 8:45 Coffee and pastries, name tags
- 9:15 Welcome
- 9:30 Jo Boaler: The Many Colors of Algebra
- 10:45 Break
- 11:00 Paul Zeitz: Games and Problem Solving
- 12:15 Lunch and networking
- 1:15 Sharing and collaboration groups
- 2:30 Closing and future plans
- 3:00 Adjourn

Special thanks to the Escape! members who helped pull this together, and to the whole Urban School community.

Sharing and Collaboration Groups

1:15-2:30

The afternoon workshops will explore projects or lessons that members of Escape from the Textbook are trying in their own teaching. They will also allow us to network and share ideas in smaller groups. Since each of the workshops is limited to 20 participants, we ask that you look over these descriptions and select your top 3 choices. *At the start of lunch, you will pick up a ticket for one of the workshops.*

Middle School Mathematics

Geometry Activities and Applications for Pre-Algebra

Facilitators: Liz Caffrey, Live Oak School; Gretchen Griswold, Park Day School

Liz and Gretchen, both teachers of pre-algebra and algebra in small, independent k-8 schools, are eager to share curriculum with others who crave math colleagues. They offer two hands-on geometry-based projects that they use with their 7th grade students. In the first, students construct a series of paper "pools," identifying patterns of change in both surface area and volume. In the second, students apply scaling, area and volume, the Pythagorean theorem and more to build a scale model of their "dream house." Gretchen and Liz hope participants will share their own ideas, successes, and challenges.

Algebra

The Arc of a Quadratics Unit, from Launch Problem to Modeling

Facilitators: Dan Bennett, Nueva School; David Louis, San Francisco Friends School

We'll share the opening problem and culminating activity from our quadratics unit. The opening problem--the privacy problem--that requires no knowledge of quadratics to solve but that previews many concepts in a quadratics unit. The culminating activity engages students in finding quadratic functions and using computers to match graphs with photos or videos of real-world parabolas. After sharing these lessons, presenters and participants will share ideas and discuss what might go into a unit with those start and finishing points.

Algebra

Developing Exponential Models Through Recursion

Facilitators: Jean Menapace and Dave Wang, The Bay School

Recursion is a topic that is often omitted from elementary algebra courses. In this workshop, we will explore how to develop exponential growth and decay models recursively and how to connect these recursive representations to the traditional exponential function representations. We will end by looking at a variety of real-world models that illustrate the power and utility of recursive modeling techniques that arise naturally from exponential growth and decay scenarios.

High School Geometry

Geometry Lessons that encourage the development of problem solving strategies and proof beyond remembering how

Facilitators: Maja Catipovic, Alameda High School; Richard Lautze, The Urban School of San Francisco

We will explore geometric lessons that engage students in thinking about “how” rather than “remember how?” These lessons focus on the geometry of angles: exterior angles, angles in circles and angles between secant lines. The lessons we emphasize that it is “okay to try and ok to be wrong”...in fact good wrong answers can lead to solutions. We are interested in discussing how to encourage students to use what they have already learned along with their explorations. We look forward to your insight and to hearing about ways that you are trying to engage your students in similar problem exploration.

Algebra 2

Every Number is a Power of Ten! Building log values and properties with an exponential exploration

Facilitators: Jen Coté and Kevin Rees, Marin Academy

For many years, the transition from exponents to logarithms has been a bumpy one for our students. Funky notation aside, we have been challenged to set up a lesson in which the link between their mastery of exponents transfers smoothly to the exploration of logs.

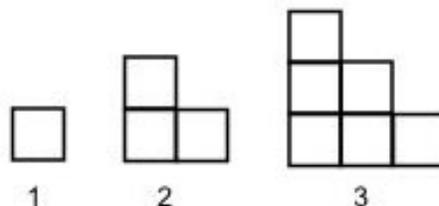
This is the story of a lesson that has seen many remodels and been enhanced by many thoughtful educators. Most recently, our colleague, Jamie Collie presented a version of this lesson at Asilomar. It was well received!! And we are about to launch it in a few weeks with the ultimate evaluators -- our students. Come explore with us, offer your feedback, add to the ongoing remodel, and as always, have fun thinking about teaching and learning!

Algebra 2 (although this project has been implemented in classes from 6th grade to Calculus)

Habits of Mind from Student-Posed Problems to Assessment

Facilitator: Avery Pickford, Castilleja School/Mills College

How many squares are in the 173rd shape?



We will complete a high-speed version of a project where students create, explore, and generalize visual counting patterns (pile patterns for example). Sprinkled in will be discussions of how mathematical habits of mind (problem solving and mathematical practice) can be developed and assessed. Then share your approaches and struggles with having students engage in similar work.

Sponsoring Organizations

Escape from the Textbook!

As secondary school math teachers, we find that almost every off-book activity we plan is well received by our students, leads to greater interest and motivation, and promotes deeper learning. Freeing ourselves from the constraints of set-in-stone curricula allows us to better respond to the realities of the individual classroom, to better tackle situations such as heterogeneous classes, and to better implement cooperative and hands-on learning models. However, the pressures of coverage, lack of time, external mandates, and isolation from like-minded teachers can undermine our efforts. Working together, we can help each other escape from the textbook, for a lesson, a unit, or an entire course.

Public Web site: www.EscapeTheTextbook.org

Online community: www.edWeb.net/escape

Center for Innovative Teaching

The Center for Innovative Teaching offers workshops for educators and the Integrated Technology Symposium for school leaders. CIT workshops are hands-on and designed to share classroom-tested activities and approaches that will enhance the academic program at any middle or high school. This summer's offerings include:

June 23-24: Become an Expert Interactive Whiteboard User: Practical Teaching Techniques
(Meghan Mahoney)

June 27-28: No Limits in Upper Level Math (Henri Picciotto)

June 29-30: Meaningful Group Work in the Math Classroom: Applying the Complex Instruction Framework (Laura Evans)

More info: www.CenterForInnovativeTeaching.org

Math for America Berkeley

Math for America Berkeley was launched in 2010 to provide the most promising mathematics and science teachers with professional development opportunities and a support community of like-minded individuals. MfA Berkeley offers the MfA Master Teacher Fellowship to give teachers the skills, commitment, and professional support they need to continue teaching in urban schools. Applications for 2011 MfA Fellowships are due Friday, April 8, 2011.

More info: www.mathforamerica.org/berkeley

Independent Curriculum Group

Founded in 2008, the Independent Curriculum Group promotes implementation and assessment of site-based, teacher-generated curriculum in secondary school. ICG sponsors conferences throughout the country devoted to the renewal of American education, including "Building an Innovative Curriculum" on June 20-22 at the Urban School.

More info: www.independentcurriculum.org