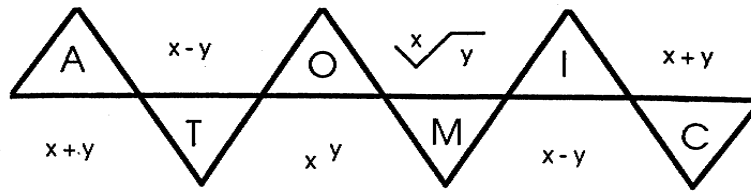


Fall 2009



ASSOCIATED TEACHERS OF MATHEMATICS IN CONNECTICUT

www.atomicmath.org

PRESIDENT'S ADDRESS

Greetings!

We are off to an exciting year and I hope you are too. I would like to welcome several new members to the ATOMIC Executive Board and express my gratitude to all the returning members. For the past 50 years, ATOMIC has sought to be a resource to the teachers of mathematics throughout the state. This year celebrates our 50th anniversary and we are proud to share it with you. The mission of ATOMIC is to promote quality teaching and learning of mathematics in Connecticut. This includes providing essential opportunities for professional collaboration among mathematics educators and advocates.

The ATOMIC conference committee and the executive board members are certainly busy preparing for our annual Fall conference. It will take place at the Mohegan Sun Conference Center on Monday, November 30th. We have lined up outstanding presenters who will offer professional development for all grades, PreK-16. I hope that you are planning to attend; we have worked hard to make it a successful conference to benefit mathematics educators in Connecticut.

The keynote speaker is Mr. Jim Rubillo who served as the Executive Director at NCTM from 2001-2009. His speech will focus on equipping students with reasoning and problem solving skills and the confidence to use mathematics as a tool to address many of society's challenges. He will look at how well we have done in the past and if we are "on track" to confront the current challenges. We hope to use our 50th anniversary as an opportunity to reflect and adjust for the future.

Future events that will be sponsored by ATOMIC include publishing our Journal, grant opportunities, and a series of spring lectures. These lectures will focus on the integration of mathematics into other disciplines such as science and technology, the arts, the humanities, and music. Stay tuned for more information as we target different areas of the state and different topics for discussion.

The Bylaws and Constitution of ATOMIC have been revised and approved by the Board. Please check our website to review the changes. The ATOMIC website provides links to related organizations and provides timely information to mathematics teachers.

As President, I welcome the suggestions, feedback and ideas of all members and encourage you contact me at hartk@madison.k12.ct.us I look forward to seeing many of you at our events throughout the year. In closing, "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has." Margaret Mead (1901-1978).

Thanks for your dedication to teaching Connecticut's children mathematics!

Kathryn Hart, ATOMIC President

NEW ORLEANS CONFERENCE

Kathryn Hart, ATOMIC President, attended the New Orleans Leaders Conference. The conference provided an opportunity to learn about leadership and membership development, current NCTM initiatives, the many services available to our Affiliate, and much more. Thank you Kathryn for representing the members of ATOMIC!



*Kathryn Hart, ATOMIC President
and Henry (Hank) Kepner, NCTM President
Photo taken at New Orleans Leaders Conference.*

A REMINDER TO ALL STUDENTS:

"IF IT IS TO BE, IT IS UP TO ME"

Need Math Help? Please visit us at YourTeacher.com for over 450 lessons from Pre-Algebra through Algebra 1, Geometry and Algebra 2. We provide a math teacher inside of every lesson.

- Your teacher is engaging for students: We have interactive instructor videos, animations, self-tests, printable extra problems and notes inside each lesson.
- Educators like our comprehensive offerings: Over 450 lessons that match the top textbooks and all U.S. state standards.
- Parents are saying YourTeacher is effective: "The depth and interactivity of the instruction is unparalleled... Compared to private tutoring... well, there is no comparison." [Source: parent in Houston, TX]

Visit us today to launch a sample lesson and see how YourTeacher delivers a teacher online to every learner at home, at school, or anywhere in the world.

WANTED: NEWSLETTER ARTICLES!

The ATOMIC newsletter is published three times a year. Winter, Spring and Fall. The ATOMIC executive board and the newsletter editor invite you to send in any activity, project, tip, quote, etc. that you found to be of help in your class room. If you would like to submit an article for publication deadlines are: 2nd week of January, April and September. Due credit will be given. Please help us to make this newsletter a meaningful one for all members. Please send your contributions to the editor:

Nancy.Iannuzzi@ct.gov

A special thanks to everyone who have submitted articles throughout the years! Thank you for helping to make the ATOMIC newsletter an interesting read. Your support is greatly appreciated. Nancy

Please note: Articles that appear in this publication of the ATOMIC newsletter are solely the opinions of those members who have submitted the articles and is not necessarily the opinion of ATOMIC.

CONNECTICUT STATE DEPARTMENT OF EDUCATION

To find out more information and follow progress on the implementation of the CT plan, log onto the CT State Dept of Education. www.sde.ct.gov

Also sign up for e-alerts while you're there!
Receive CSDE updates by e-mail!

50 WAYS TO SAY GOOD JOB!

Remember to include encouraging words when grading student work:

A-1!	Great!	Superior!
All Right!	Hooray!	Supreme!
Awesome!	Impressive!	Swell!
Bravo!	Magnificent!	Terrific!
Brilliant!	Marvelous!	That looks great!
Congratulations!	Nice!	That's it!
Cool!	Okay!	That's right!
Exactly!	Outstanding!	That's the best!
Excellent!	Perfect!	The best!
Exceptional!	Right on!	Tiptop!
Fabulous!	Sensational!	Tremendous!
Fantastic!	Skillfully Done!	Unbelievable!
Fine work!	Special!	Very good!
First class!	Spectacular!	Way to go!
First rate!	Splendid!	Well done!
Good work!	Super!	Wonderful!
Grand!	Superb!	

NCTM EXECUTIVE DIRECTOR NAMED

Kichoon Yang has been named Executive Director of the National Council of Teachers of Mathematics (NCTM), effective July 1, 2009.

VOLUME OF A CONE/SPHERE

Submitted by Lea Davis

Turn your ordinary lesson on volume into a fun lesson: Use these directions to create a simple Christmas tree ornament using a tennis or glass ball and an ice cream cone, shared by Kelley.



Materials Needed:

- Cake or Sugar ice cream cones
- Solid color Ball Ornaments big enough to sit on the cones
- White acrylic paint that you can drizzle
- Tiny glass beads
- Glue or hot glue
- Spray acrylic
- Ribbon for hanging

Instructions:

I've done these with 3 year olds. Older kids can do more of the process themselves. Holding the cone by the base, place glue all along the inside rim of the cone. Have the child place the ball ornament on the cone with the hanging part straight up. When that is dry (that's why hot glue works great), either you or the child can drizzle some white paint on the top of the ball. While it is still wet, have the child sprinkle glass beads on for 'sprinkles.' Let it dry thoroughly (overnight).

Lightly spray the cone part with acrylic (don't get too close with the acrylic can while you are spraying or it may melt the cone) to seal it. Tie a colorful ribbon through the loop and you're ready to give these as gifts or hang them on the tree!

Note: Use a sharpie to write the child's name and year on the base before you spray the acrylic. I saw these several years ago in a preschool classroom and have been making them since. Everyone who sees these RAVES over them. They are one of the few crafts that can be done by the younger set that are also saleable for Christmas fairs and fundraisers. Let's face it, we'll all put our kids' crafts on OUR trees, but would a stranger buy them? They will buy these!

MATHCOUNTS

*By Archana Mehta, Director of Marketing,
MATHCOUNTS Foundation*

Currently in its 27th year, MATHCOUNTS is a national math enrichment, coaching and competition program that promotes excellence in middle school mathematics. MATHCOUNTS programs involve students and teachers in year-long coaching and after-school programs that help middle school students at all learning levels improve their math and problem-solving skills.

MATHCOUNTS offers two fantastic programs to excite and challenge middle school students, the MATHCOUNTS Club Program and MATHCOUNTS Competition Program. The Club Program is a math enrichment initiative that provides teachers with the structure and activities needed to form a math club at their school, including problem sets, hands-on activities and games. These activities are designed to meet the National Council of Teachers of Mathematics standards for grades 6-8. The Club Program fosters a social atmosphere, and students can complete a series of math challenges to earn silver and gold level recognition and entry into prize drawings. The Club Program is FREE to any middle school that wishes to participate.

The MATHCOUNTS Competition Program provides students with the opportunity to participate in math competitions against students from other schools, motivating students to develop their mathematical abilities. MATHCOUNTS competitions feature several written rounds of math problems, including a team round in which students collaborate to solve a set of math problems, and are highlighted by the Countdown Round, a fast-paced oral competition for top students. There are four levels of competition— school, chapter, state and national— with the top students from each competition advancing to the next level.

Registration for the 2009-2010 MATHCOUNTS program year is now open!

Consider registering for the free MATHCOUNTS Club Program or the MATHCOUNTS Competition Program. You can register your school by going to www.mathcounts.org and clicking on the "Register Now" button. Please contact the MATHCOUNTS National Office with any questions regarding the Club or Competition Program at info@mathcounts.org or (703) 299-9006. Best wishes for a successful school year!



Note: If you find it difficult to follow the directions in black and white, please go to www.atomicmath.org to access this newsletter online. The graphics are in color.

ROTATING SHAPES

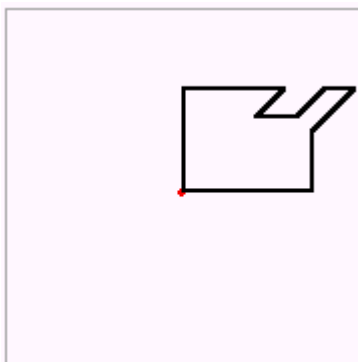
You can make an interesting design from one cut-out shape. Here's how:

1) Draw a shape. It can be made of straight lines, curves, or a combination.



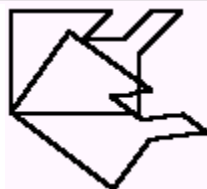
2) Cut out the shape.

3) On another sheet of paper, mark a small dot. All of your shapes will pivot around this point.

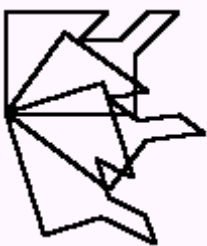


4) Place one point of the shape on the pivot point you have marked on the paper. Trace around the shape.

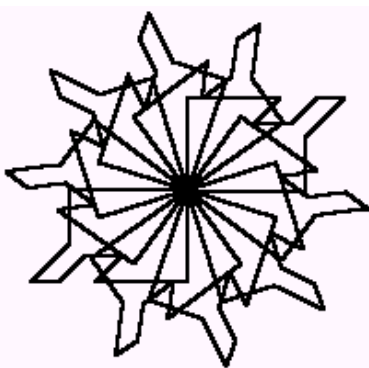
5) Rotate the shape to a new position, keeping the same point of the shape on the paper's pivot point. Trace around the shape again.



6) Continue rotating and tracing the shape until you have worked your way around the circle.



This design shows ten rotations of the shape next to #1 above. You may space the shapes evenly around the pivot point or cluster them tightly in some places and more loosely in others. You may use a protractor to measure evenly-spaced angles if you wish to place the shapes precisely about the pivot point, or you may "eyeball" it.



Extra Challenge: You may even rotate two different shapes around the pivot point.

7) Color your design. You may color it so that the design will look the same from many different angles, or you may choose another color scheme.



If the design looks the same when it is rotated, it has rotational symmetry.

This sample is not colored symmetrically.

These two designs were created by students of Brian Lewis at Feagin Mill Middle School in Warner Robins, Georgia. Were one or two shapes used to create each design? Can you tell what shapes were used? Are the designs colored symmetrically? (Do the designs have rotational symmetry?)



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HEXAGRAMS

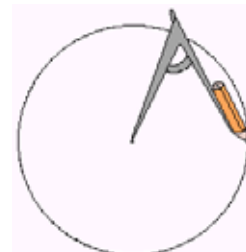


#1: basic hexagram

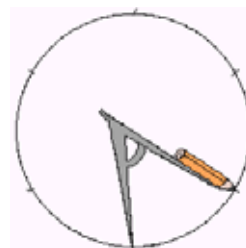
#2: interlocking triangles

#3: six triangles

With a compass, a straight edge, and a pencil, you can make these hexagram designs and many more. Here's how:



1) Use a compass to draw a circle. Keep the compass set at the same position for the next step.



2) Place the compass point on the edge of the circle and make a faint

mark on the edge. Then place your compass point on this mark and make a second mark. Continue around the circle until you have made six marks. They should fit perfectly.

3) Now you will use the straight edge to connect different points. Draw your lines as faintly as you can, because you will be erasing some of these lines later. First, connect opposite points to make three lines which all cross at the center of the circle. Each line cuts the circle exactly in half at its widest point and is called the diameter of the circle.

4) Next, connect every other mark to form a large triangle.

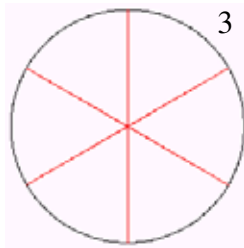
5) Connect the other three marks to form a second, upside-down triangle.

6) Mark the six points where the large triangles intersect (cross) the three diameter lines. Then connect every other mark to form a small triangle.

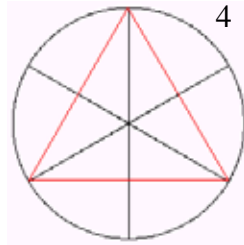
7) Connect the other three marks to form a small upside-down triangle.

Now you have drawn all of the lines needed for making all three hexagram designs at the top of this page. You just need to darken the lines needed for one of the three hexagram designs and erase the remaining pencil lines.

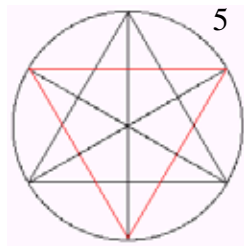
8) Use a straight edge and a dark pencil, colored pencil, or pen to trace over just the lines needed for this design (the red lines on each diagram). You may also like to look again at the shapes which form each design at the beginning of this article.



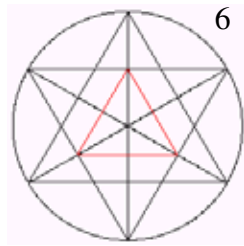
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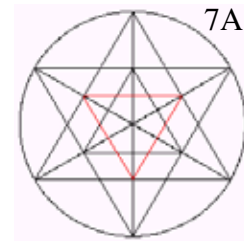
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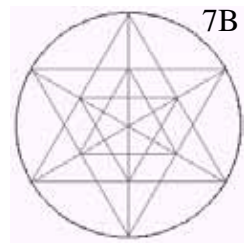
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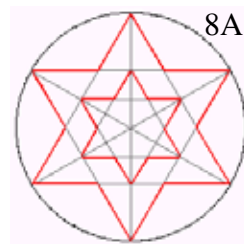
6



7A



7B



8A

A: basic hexagram

B: interlocking triangles

C: six triangles

This photo shows the outlines of the six triangles, darkened with straight red lines. Notice how faint the remaining lines are.

9) Erase the faint lines which are not a part of the design.

Hint: If you like working with a friend, you can take turns: one person holds the straight edge while the other person draws the lines. That way both of you can make sure the faint lines and the darkened lines are placed exactly right. (It's a little tricky when you are figuring out which lines to darken!)

10) Color your design and cut out the circle.

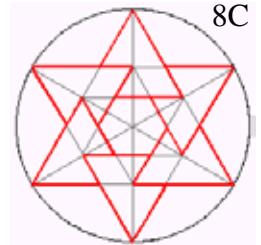
If you like, you can paste each hexagram design onto a backing of posterboard, cardboard, or foamboard and hang it from a loop of yarn or thread. You could paste a different design on the back and hang several to form a mobile.

Extra Challenge: Can you think of some other ways to outline and color to make a different kind of hexagram design? For instance, the three hexagrams pictured at the top of this page all have empty centers. Can you create a design which uses some or all of the tiny shapes in the center? Can you and your friends or classmates each create a unique design? How many lines of symmetry does your design have?

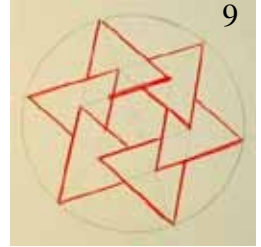
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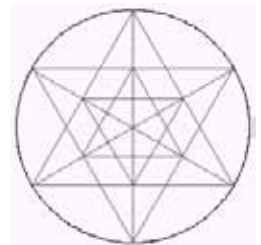
8B



8C



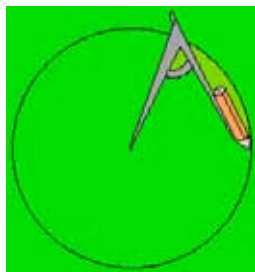
9



TREE OF HEXAGONS

You can make a tree out of hexagons which get smaller in size as you build the tree from bottom to top. Use stiff green paper. You can make your hexagons with a compass and straight edge:

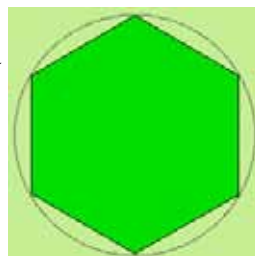
1) Open your compass so that the two points are about 1 1/2 inches apart (or 3 1/2 or 4 cm). Draw a circle. Press the point of your compass into the paper to make a small hole in the center of the circle.



2) Keep your compass set at the same position, and place the point on the edge of the circle. Make a faint mark on the edge. Then place your compass point on this mark and make a second mark. Continue around the circle until you have made six marks. They should fit perfectly.

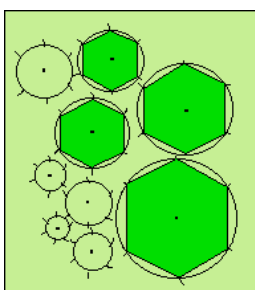


3) Using a straight edge, draw lines to connect these six marks to form a hexagon.



You will be cutting out the hexagon and discarding the paler green portion, but you might like to draw all of your shapes first and then cut them out at once.

Follow the same steps to make smaller and smaller hexagons. Set the compass about 1/4 inch or 1/2 cm smaller for each circle which you draw and mark. Be sure to mark the six points along the edge of each circle before you change the compass setting to draw a smaller circle. You decide how small to make your smallest circle and hexagon.



Use a pipe cleaner or a piece of yarn threaded on an embroidery needle to form the “trunk” of the tree and layer the hexagons from the largest at the base to the smallest at the top. You may use a loop of yarn or the extra length of pipe cleaner (at the top or bottom) to suspend the tree as an ornament or part of a mobile.



THOUGHTS FROM PAEMST STATE FINALIST ED DEPEAU

As a representative from Newington High School in a Wesleyan Leadership Academy, I was fortunate enough to meet many prominent mathematics educators. Kenneth Sherrick was one educator with whom I worked closely and who had a profound impact on my teaching philosophy. After visiting my classroom, and observing me teach a lesson, Ken nominated me for the Presidential Award for Excellence in Mathematics and Science Teaching, PAEMST. I was excited, inspired, and nervous all at the same time.

As it turned out, I had not been teaching long enough to be eligible for the PAEMST award that year, and the next year the award was scheduled to be given to an elementary teacher. So I spent those two years continuing to research and implement what I believed to be effective methods of mathematics instruction, and was lucky enough to have Ken nominate me again for the secondary PAEMST award this past year.

As part of the application process, I was required to teach a lesson, videotape it, and reflect upon it. I chose a lesson in which I took my students outside to fire air powered rockets vertically into the air. They were given tools to determine how high the rockets traveled. As an extension, students were then asked to formulate a method of measuring the height of a nearby building indirectly. These lessons gave students the opportunity to experience how geometry and algebra can be applied to the “real world” and I learned how valuable these lessons were in increasing their understanding of “real world” distances.

On a daily basis I am not able to take the time to reflect as thoroughly on lessons as was required by the application process for this award. I am grateful for having been given the opportunity to do so, however, as the experience reinforced my understanding of making mathematics relevant to students, meeting the needs of all learners, and analyzing data. While the PAEMST application process seemed daunting before I began, it quickly became enthralling as I reflected on my students’ work, and my own performance. I am grateful to Ken Sherrick for believing that I should be nominated for this award, and thank those who have selected me to be a finalist.

SAVE THE DATE FOR THE 5TH ANNUAL CELEBRATION FOR TEACHING AND LEARNING MARCH 5TH AND 6TH 2010

Join viewers across the country when science and song weave together in *THE MUSIC INSTINCT: SCIENCE & SONG* -- a two-hour PBS documentary which explores startling new connections being made between music and the human mind, body, and the natural world. It follows researchers from a variety of fields as they use groundbreaking techniques and technologies to unravel age-old mysteries about music's persistence, universality and power to both move and heal.

During the week of June 22nd, PBS stations around the country will be airing *THE MUSIC INSTINCT: SCIENCE AND SONG*, hosted by Bobby McFerrin and Daniel Levitin. Many of you heard Daniel Levitin at the Celebration of Teaching & Learning in March, and here's the scoop: acclaimed musician and singer Bobby McFerrin has agreed to be one of our keynote speakers at the 5th annual Celebration of Teaching & Learning on March 5-6, 2010!

In the New York metro area, THIRTEEN will be airing *THE MUSIC INSTINCT* on Wednesday, June 24th at 9:00pm. Check your local listings for the broadcast time in your area, and check out THIRTEEN's Ed Online site to learn more about *THE MUSIC INSTINCT*.

Your friends at THIRTEEN & WLIW21

ELI WHITNEY MUSEUM

The Eli Whitney Museum and Workshop is an experimental learning workshop for students, teachers, and families. We collect, interpret, and teach experiments that are the roots of design and invention.

Over the course of a year, students in Eli Whitney Museum programs build more than 70,000 projects. Choose a program from our extensive catalog to meet your curriculum needs and excite your students' talents. Visit our website at www.eliwhitney.org to view images and descriptions of projects current and archival.

Categories for School Programs include Basic Skills, Design and Invention, Force and Motion, Electricity, Sound and Light, Natural History, Sustainable Design and Social Studies (Connecticut and Multicultural

Projects). We have noted the CT Frameworks codes in individual project description where our programs meet required curriculum standards.

Walk-in projects are frequently culled from school programs and there are often holiday-related projects as well as special walk-in projects designed for children and families. The Museum's 30 foot long model train layout with 4 controllers for visitors and wooden toy trains for children to build will run from Thanksgiving through New Year.

We look forward to meeting you while you bring you families to the Eli Whitney Museum to experience math and science and technology in a hands-on environment.

FOR ATOMIC MEMBERS AND FAMILIES

\$2.00 OFF

ANY WALK-IN PROJECT

FROM SEPTEMBER 2009 – JUNE 2010

GUEST COLUMN: MATH AND THE CITY

By Steven Strogatz

As one of Olivia Judson's biggest fans, I feel honored and a bit giddy to be filling in for her. But maybe I should confess up front that, unlike Olivia and the previous guest writers, I'm not a biologist, evolutionary or otherwise. In fact, I'm (gasp!) a mathematician.

One of the pleasures of looking at the world through mathematical eyes is that you can see certain patterns that would otherwise be hidden. This week's column is about one such pattern. It's a beautiful law of collective organization that links urban studies to zoology. It reveals Manhattan and a mouse to be variations on a single structural theme.

The mathematics of cities was launched in 1949 when George Zipf, a linguist working at Harvard, reported a striking regularity in the size distribution of cities. He noticed that if you tabulate the biggest cities in a given country and rank them according to their populations, the largest city is always about twice as big as the second largest, and three times as big as the third largest, and so on. In other words, the population of a city is, to a good approximation, inversely proportional to its rank. Why this should be true, no one knows.

Even more amazingly, Zipf's law has apparently held for at least 100 years. Given the different social conditions from country to country, the different patterns of migration a century ago and many other variables that you'd think would make a difference, the generality of Zipf's law is astonishing.

Keep in mind that this pattern emerged on its own. No city planner imposed it, and no citizens conspired to make it happen. Something is enforcing this invisible law, but we're still in the dark about what that something might be.

Many inventive theorists working in disciplines ranging from economics to physics have taken a whack at explaining Zipf's law, but no one has completely solved it. Paul Krugman, who has tackled the problem himself, wryly noted that "the usual complaint about economic theory is that our models are oversimplified — that they offer excessively neat views of complex, messy reality. [In the case of Zipf's law] the reverse is true: we have complex, messy models, yet reality is startlingly neat and simple."

After being stuck for a long time, the mathematics of cities has suddenly begun to take off again. Around



2006, scientists started discovering new mathematical laws about cities that are nearly as stunning as Zipf's. But instead of focusing on the sizes of cities themselves, the new questions have to do with how city size affects other things we care about, like the amount of infrastructure needed to keep a city going.

For instance, if one city is 10 times as populous as another one, does it need 10 times as many gas stations? No. Bigger cities have more gas stations than smaller ones (of course), but not nearly in direct proportion to their size. The number of gas stations grows only in proportion to the 0.77 power of population. The crucial thing is that 0.77 is less than 1. This implies that the bigger a city is, the fewer gas stations it has per person. Put simply, bigger cities enjoy economies of scale. In this sense, bigger is greener.

The same pattern holds for other measures of infrastructure. Whether you measure miles of roadway or length of electrical cables, you find that all of these also decrease, per person, as city size increases. And all show an exponent between 0.7 and 0.9.

Now comes the spooky part. The same law is true for living things. That is, if you mentally replace cities by organisms and city size by body weight, the mathematical pattern remains the same.

For example, suppose you measure how many calories a mouse burns per day, compared to an elephant. Both are mammals, so at the cellular level you might expect they shouldn't be too different. And indeed, when the cells of 10 different mammalian species were grown outside their host organisms, in a laboratory tissue culture, they all displayed the same metabolic rate. It was as if they didn't know where they'd come from; they had no genetic memory of how big their donor was.

But now consider the elephant or the mouse as an intact animal, a functioning agglomeration of billions of cells. Then, on a pound for pound basis, the cells of an elephant consume far less energy than those of a mouse. The relevant law of metabolism, called Kleiber's law, states that the metabolic needs of a mammal grow in proportion to its body weight raised to the 0.74 power.

This 0.74 power is uncannily close to the 0.77 observed for the law governing gas stations in cities. Coincidence?

Maybe, but probably not. There are theoretical grounds to expect a power close to $3/4$. Geoffrey West of the Santa Fe Institute and his colleagues Jim Brown and Brian Enquist have argued that a $3/4$ -power law is exactly what you'd expect if natural selection has evolved a transport system for conveying energy and nutrients as efficiently and rapidly as possible to all points of a three-dimensional body, using a fractal network built from a series of branching tubes — precisely the architecture seen in the circulatory system and the airways of the lung, and not too different from the roads and cables and pipes that keep a city alive.

These numerical coincidences seem to be telling us something profound. It appears that Aristotle's metaphor of a city as a living thing is more than merely poetic. There may be deep laws of collective organization at work here, the same laws for aggregates of people and cells.

The numerology above would seem totally fortuitous if we hadn't viewed cities and organisms through the lens of mathematics. By abstracting away nearly all the details involved in powering a mouse or a city, math exposes their underlying unity. In that way (and with apologies to Picasso), math is the lie that makes us realize the truth.

Steven Strogatz is a professor of applied mathematics at Cornell University and the author of "The Calculus of Friendship: What a Teacher and a Student Learned about Life While Corresponding about Math," published in August.

For Zipf's law see:

Zipf, G. K. (1949) "Human Behavior and the Principle of Least Effort." Addison-Wesley, Cambridge, MA.

Gabaix, X. (1999) "Zipf's law for cities: An explanation." The Quarterly Journal of Economics 114, 739-767.

For Paul Krugman quote:

Krugman, P. (1996) "Confronting the mystery of urban hierarchy." Journal of the Japanese and International Economies 10, 399-418.

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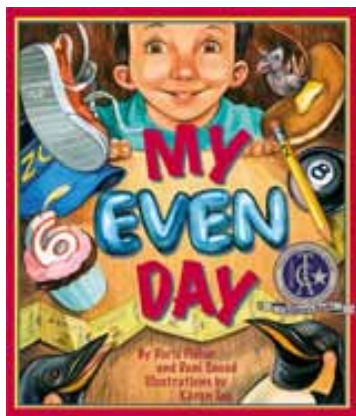
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In this delightful, rhythmic sequel to *One Odd Day*, the young boy awakens to find that it is another strange day—now everything is even, and his mother has two heads! This time, a school field trip to the zoo is dealt with in an odd, but even-handed manner. And, like its predecessor, children

will spend hours looking for all the hidden objects in the incredible art. Square it all off with more “number fun” in the “For Creative Minds” section.

*Written by Doris Fisher / Dani Sneed
Illustrated by Karen Lee*

“This book is an asset to math programs and is also delightful as just a fun read. The illustrations add to the humor. Children will want to look at them time and time again.” – *Children’s Literature Comprehensive Database*

“This is a great book. Together, *One Odd Day* and *My Even Day* introduce math for the early elementary set. They succeed in getting the kids excited about math. You can’t ask for more than that.” – *The Reading Tub*

“*My Even Day* will not only have readers in hysterics, but it will teach the important concept of even numbers.” - *Wee One’s Children’s Magazine*

Author/Artist Bio:



Doris Fisher is a former kindergarten teacher and private preschool teacher. Her children’s writing includes fiction, nonfiction, poetry, word puzzles and mazes. Her credits are *Babybug*, *Boys’ Quest*, *Fun for Kidz*, *Highlights for Children*, *Hopscotch*, *Story Friends*,

Guideposts for Kids on the Web, and *Wee Ones Magazine Online*. Jackson’s *Snowy Secret*, an original picture book manuscript by Doris, won honorable mention from *ByLine Magazine* in the contest category, *Juvenile Short Story*, as noted in the September 2004 issue. Doris and her husband live in the Houston, TX area. Their children are grown and live on their own.



Dani Sneed currently works as a full-time writer although she has worked as an engineer and a substitute teacher. When teaching Dani enjoys explaining math in silly but memorable ways. She was inspired to co-author this book based on a conversation she had with an elementary school librarian. She has written several articles for “*Highlights for Children*” and three merit badge books for Boy Scouts of America: *Chemistry*, *Environmental Science*, and *Geology* and is working on more. She has two co-authored bilingual books published by *Bebop Books*, a division of *Lee & Low*: *Confetti Eggs and Cascarones* (fall 2002), and *Punched Paper and Papel Picado* (fall 2004). Dani lives in Humble, Texas with her husband and their three children, plus a dog, a parakeet, and two gerbils.



Karen Lee majored in illustration at the Columbus College of Art and Design in Columbus, Ohio. It was here that she met her husband, fellow illustrator Tim Lee. She began her career as a storyboard artist and editorial illustrator but it wasn’t until she had children of her own that she discovered her true artistic passion. As she brought home stacks of books from the library to read to her children she began to discover the magic in children’s illustration. Karen tries to bring her sense of delight into every painting she does. Each illustration begins with a thoughtful design and drawing. The paintings are finished with watercolor on illustration board. Karen is the recipient of the 2004 Society of Children’s Book Writers and Illustrators Magazine Merit Award for her work in *Highlights For Children*. Karen and her husband are currently raising their family outside of Raleigh, North Carolina.



ATOMIC TEACHING GRANT 2009-2010

Background

The Associated Teachers of Mathematics in Connecticut supports the goals outlined by the National Council of Teachers of Mathematics (NCTM) in its publication Principles and Standards for School Mathematics. In order to encourage widespread involvement in effecting positive change in our mathematics classrooms, a grant for up to \$500 will be awarded to a maximum of six Connecticut educators per calendar year who are associated with ATOMIC through either individual or school memberships. These grants are designed to provide funds directly to teachers for projects that promote excellence in mathematics education.

Purpose

Grants will be awarded for proposals that focus on designing new curricula, exploring assessment possibilities, enhancing the learning environment, or in any way promoting the acquisition of mathematical power by our students.

Criteria

A selection committee will evaluate the proposals on the basis of how effectively they support the NCTM Standards in the aforementioned publication. Additional consideration will be given to innovation and to the feasibility of executing the plan. This grant offers the opportunity to enrich or approach curriculum in an innovative way and to stimulate creative teaching techniques in the classroom. The selection committee will use the following general criteria when screening applications.

- The project supports the NCTM Standards
- The project directly involves students
- The project is not solely for the purchase of supplies
- The project is submitted in correct format, including a statement of purpose, project description, materials used, an evaluation plan, a description of how it supports NCTM Standards, and budget
- The proposal is signed by the school principal

Follow-Up

It will be the responsibility of each awardee to make a written report to ATOMIC at the completion of the school year for which the award was given. This report should describe and evaluate the project as it was actually implemented. The article will be published in the ATOMIC Journal or Newsletter to inform members of projects undertaken with ATOMIC Teaching Grants.

Deadline

The proposal, personal application, and statement of institutional commitment may be submitted at anytime. The evaluation committee will endeavor to reach a decision within 30 days of receipt of the application.

Contact

Christina Lepi, Grant Coordinator
c/o Farmington High School
10 Monteith Drive, Farmington, CT 06032

CAMPY

The Connecticut Association for Mathematically Precocious Youth (CAMPY) will be holding their spring conference in May 2010 simultaneously at several locations across the state and will host programs for middle school and high school students. Each campus will have a unique program offered. You can visit the programs for the campuses and register on-line by going to www.campy.org



*Patti Hahn is presented the Robert A. Rosenbaum Award
by Kathryn Hart
(photo taken at the ATOMIC Conference 2008)*

THOUGHTS FROM PAEMST STATE FINALIST WENDY MILSON

After 20 years in the computer technology field, I decided that my goal was to make a difference in someone's life. Now that I am teaching mathematics to middle school students in Bridgeport, CT, my dream has come true. My personal aspiration is to make mathematics enjoyable and real for all my students. Students are more engaged and eager to learn when I am able to integrate lessons such as Fantasy Football or Basketball in Mathematics, Stock Market Game, Frog Olympics, as well as plenty of technology. Classroom games such as Math Bingo, Who Wants to Be a Math Millionaire, and Math Jeopardy continue to keep learning fun and alive within my classroom. In the computer lab, students eagerly go to the "Milson's Math Games" website with over 250 links to math games, each categorized by the highlighted math strand.

Teachers who use a variety of instructional strategies add option and individuality to learning. The decision to use various teaching techniques depends on the content and complexity of the concept. The teacher must consider student ability levels, prior exposure to the concept, and the difficulty of the concept itself. The teaching technique will differ for each lesson and complexity of the concept. For example, a new concept may require interactive teaching with a short streaming video introduction; whereas an extension of a concept may require co-operative heterogeneous learning groups. The review of a challenging concept may become a competitive Jeopardy classroom game. The assessment of student learning may be individual worksheets using the Renaissance Responders to practice concept applications. Each lesson is tailored with the goal of obtaining the highest level of student learning and achievement.

Lessons/Activities/Technology which have been successful:

- Online math games - Over the past 8 years, I have compiled math game websites that help students who are challenged in different strands. My website is comprised of over 250 math games/activities organized generally by content strand.
http://bridgeport.ct.schoolwebpages.com/education/components/links/links.php?sectiondetailid=1477&sc_id=1187370075

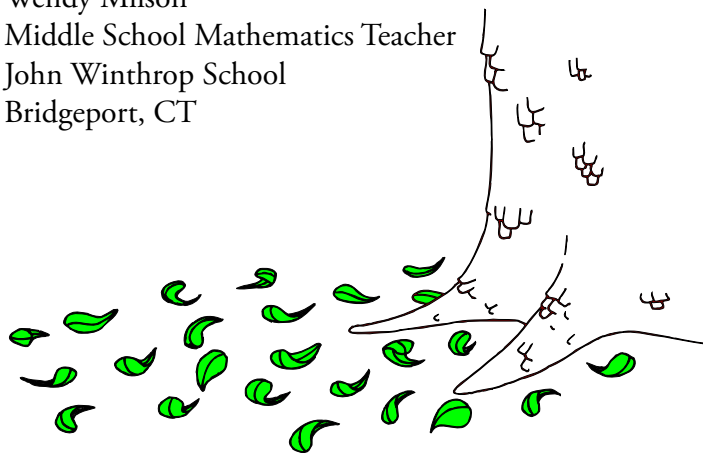
- Shrek or Twilight Bingo – PowerPoint Slideshows containing background images from the movies. On each slide is a geometry problem to be solved. The first slide of the PowerPoint contains the rules of the game and answers to all the problems. Students write these answers on a bingo sheet randomly. As students solve the problems, they mark off the correct answer on their game sheet. This activity was taken from Angie Gallacher's website.
- Fantasy Football and Mathematics, Dan Flockart <http://www.fantasysportsmath.com/>
This is an innovative program that incorporates internet, professional sports, play theory, fun and math. The program helps eliminate discipline problems, reduce absenteeism, helps teachers to be more effective, and changes student's attitudes toward math. Watch my Athena all girl math class talk about Fantasy Football and Mathematics in this documentary: <http://www.youtube.com/watch?v=mdepRVWxcL8>
- Math Jeopardy – templates can be downloaded from <http://www.jmu.edu/madison/teacher/jeopardy/jeopardy.htm>
- Who wants to be a Math Millionaire – taken from Math Playground website <http://www.mathplayground.com>
- Forensic Math – an animated PowerPoint lesson solving algebraic equations as a medical examiner. Students visit Dr. G's Medical Examiner website where they investigate a morgue, take a forensic test, and more. To finish, students take a field trip to see the play Mad Science presents CSI:LIVE. Lesson was based on the Connected Math Program Analyzing Bones lesson.
- United Streaming Videos – Great resource for viewing math concepts on video.
<http://streaming.discoveryeducation.com/>
- Renaissance Responders – interactive assessment device that gives teachers instant assessment of their students learning. It's so simple. You ask your students questions... they enter answers using Renaissance Responders... and the results are transmitted wirelessly to your computer as quiz grades or as a bar graph response.

Algebra with Pizzazz – Book containing Pre-Algebra or Algebra worksheets with hidden riddles and cartoons. ISBN: 0-88488-791-X

- Cartesian Cartoons – graphing cartoons. Practice using ordered pairs to plot points in an amusing way. ISBN: 0-9649973-1-2
- Assured Algebra Experiences – crafted by the Bridgeport Math Department <http://www.bridgeportmath.org/algebra/assured.html>
- Elmo – document readers, are digital cameras situated so that documents can be placed under them. The documents are then displayed on the classroom's projector. It is comparable to the old transparency overhead viewers with the added advantage of being able to show non-transparent items as well as pages of a book, student work, small prints, etc.

Making math fun for middle school students is the driving force behind my teaching while still making it a priority to reflect and revise each lesson with the end goal of obtaining the highest level of student learning and achievement. If I'm not having fun, neither are my students!

Wendy Milson
Middle School Mathematics Teacher
John Winthrop School
Bridgeport, CT



DEL REY RELEASES GRAPHING SOFTWARE FOR TEACHERS

HandyGraph 2.1 Expands Capabilities for Creating Attractive Graphs

Corvallis, Oregon -- August 26, 2009 -Thousands of mathematics and science teachers use HandyGraph software to create attractive and accurate graphs.

Del Rey has just released HandyGraph 2.1, incorporating improvements recommended by teachers and reinforcing the company's commitment to educators.

HandyGraph 2.1 creates customized graphs for worksheets, web pages, presentations, and tests. The innovative interface empowers users to modify the numerous details of each graph without appearing complicated. Praised by teachers for its convenience, HandyGraph graphs equations and inequalities, plots points, and creates Cartesian grids. Each resulting graph image can be saved in various file formats, for use in virtually any application.

Product History

For nine years, HandyGraph has been helping math teachers to create educational material. HandyGraph 1 worked within Microsoft Word to create blank graphs and number lines for tests and worksheets. HandyGraph 2 debuted as a stand-alone software application, expanding graphing features while maintaining a familiar user experience. HandyGraph 2 introduced point plotting and function graphing in addition to creating Cartesian grids.

Pricing and Availability

HandyGraph 2.1 is now available for download and purchase at www.handygraph.com. Anyone can try the graphing software free for 30 days, and single user licenses are priced at \$59. Site licenses, semester licenses, and upgrade discounts are also available.

Regards,
Amy Jensen, Del Rey Inc • (541) 752-1545
ajensen@handygraph.com

HOW TO MEASURE THE HEIGHT OF A TREE



On September 7, 2006 the San Francisco Chronicle reported that researchers had just discovered a 378 foot (113 meters) tall tree that is probably the world's tallest living tree. If you think you can find a tree that can break that record, or just want to measure that tree in your backyard, try these techniques. These methods can also give you a good approximation of the heights not only of trees, but also of telephone poles, buildings, magic beanstalks—pretty much anything tall.

Shadow Method:

1. Know your exact height in the shoes you will be wearing to perform this method.
2. Stand next to the tree or the object to be measured. For best results, do this method on a bright, sunny day. If the sky is overcast, it may be difficult to tell exactly where the shadow's tip is
3. Measure the length of your shadow. Use a tape measure or yardstick (meter ruler) to measure your shadow from your feet to the tip of your shadow. If you don't have someone to assist you, you can mark the end of the shadow by tossing a rock onto it while you're standing. Or better yet, place the

rock anywhere on the ground, and then position yourself so the tip of your shadow is at the rock; then measure from where you're standing to the rock.

4. Measure the length of the tree's shadow. Use your measuring tape to determine the length of the tree's shadow from the base of the tree to the tip of the shadow. This works best if the ground all along the shadow is fairly level; if the tree is on a slope, for example, your measurement won't be very accurate. You want to do this as quickly as possible after measuring your shadow, since the sun's position in the sky (and hence the shadow length) is slowly but constantly changing. If you have an assistant, you can hold one end of the measuring tape while he or she measures the tree's shadow, and then you can immediately measure your shadow.
5. Calculate the tree's height by using the proportion of your shadow's length to your height. Since you know the length of the tree's shadow, and you also know that a certain height (your height) produces a certain shadow length (the length of your shadow), you can determine the tree's height with a little math. Multiply the length of the tree's shadow by your height, and then divide the resulting number by the length of your shadow. For example, if you are 5 feet (1.5 meters) tall, your shadow is 8 feet (2.4 meters) long, and the tree's shadow is 100 feet (30.48 meters) long, the height of the tree is $(100 \times 5) / 8 = 62.5$ feet (30.48 x 1.5 meters) / 2.4 meters. Note that the order of your multiplication does not matter.

Pencil Method: Requires an Assistant

1. Stand far enough from the tree so you can view the whole tree—top to bottom—without moving your head. For the most accurate measurement, you should stand so that you are on a piece of ground that is about level with the ground at the tree's base. Your view of the tree should be as unobstructed as possible.
2. Have a friend stand near the tree.
3. Hold a pencil or a small, straight stick (such as a paint stick or ruler) in one hand and stretch your arm out so that the pencil is at arm's length in front of you (between you and the tree).
4. Close one eye and adjust the pencil up or down so that you can sight the very top of the tree at the top of the pencil. This is easiest if you turn the pencil so

that the sharpened point is pointing straight up. The tip of the pencil should thus just cover the top of the tree in your line of sight as you look at the tree “through” the pencil.

5. Move your thumb up or down the pencil so that the tip of your thumbnail is aligned with the tree’s base. While holding the pencil in position so that the tip is aligned with the tree’s top (as in step 3), move your thumb to the point on the pencil that covers the point (again, as you look “through” the pencil with one eye) where the tree meets the ground.
6. Rotate your arm so that the pencil is horizontal (parallel to the ground). Keep your arm held straight out, and make sure your thumbnail is still aligned with the tree’s base.
7. Have your friend move so that you can sight his or her feet “through” the point of your pencil. That is, your friend’s feet should be aligned with the pencil’s tip. He or she may need to move backward, sideways, or diagonally. Since, depending on the height of the tree, you may need to be some distance away from your friend, consider using hand signals (with the hand that is not holding the pencil) to tell him or her to go farther, come closer, or move to the left or right.
8. Measure the distance between your friend and the tree. Have your friend remain in the place or mark the spot with a stick or rock. Then use a measuring tape to measure the straight-line distance between that spot and the base of the tree. If you don’t have a measuring tape you can pace out the distance, although this will not be as accurate. The distance between your friend and the tree is the height of the tree.

Angle of Elevation Method

1. Measure the distance to a sighting position. Stand with your back to the tree and walk out to a point that is approximately level with the ground at the tree’s base and from which you can clearly see the tree’s top. Walk in a straight line, and use a measuring tape to measure your distance from the tree. You need not stand any set distance from the tree, but this method generally works best if your distance from the tree is about 1-1.5 times the height of the tree.

2. Measure the angle of elevation to the tree’s top. Sight the top of the tree and use a clinometer or transit to measure the “angle of elevation” between the tree and the ground. The angle of elevation is the angle formed between two lines—the flat plane of the ground and your sightline, to some elevated point (in this case, the tree’s top) — with you as the vertex of the angle.
3. Find the tangent of the angle of elevation. You can find the tangent of an angle using a calculator or table of trigonometric functions. The method for finding the tangent may differ depending on your calculator, but usually you just push the “TAN” button, enter the angle, and then press the “equal” button (=). Thus if the angle of elevation is 60 degrees, you simply push “TAN” and then enter “60” and then press the equal sign.
4. Multiply your distance from the tree (measured in step 1), by the tangent of the angle of elevation. The resulting number is the height of the tree minus your height.
5. Add your height to the height you calculated in the previous step. Now you have the height of the tree. You need to add your height because you measured the angle of elevation from eye level, not from the ground.

Fixed Angle of Elevation Method

1. Fold a square piece of paper in half so that it forms a triangle. The triangle will have one right (90 degree) angle and two 45 degree angles.
2. Hold the triangle near one eye so that the right angle faces away from you and one side is horizontal (parallel to the ground, assuming the ground is level).
3. Move back from the tree until you can sight the top of the tree at the top tip of the triangle. Close one eye to sight the tree’s top. You want to find the point where your line of sight follows the hypotenuse of the triangle to the very top of the tree.
4. Mark this spot and measure the distance from it to the base of the tree. This distance, plus your height (because you used the angle of elevation from eye level, not from the ground) is also the height of the tree. This works because the angle of elevation using your triangle is 45 degrees, and the tangent of 45 degrees = 1.

continued on page 16

Tips

- Realize that many times using DBH (diameter at breast height) is a more useful and much easier way of assessing a tree's size and age.
- For increased accuracy using the shadow method you can measure the shadow cast by a yardstick or similar straight stick of known height instead of a person's height. Depending on how you are standing, your height may vary (i.e., if you are slouching or tilting your head slightly).
- You can improve the accuracy of the pencil method and the angle of elevation methods by taking several measurements from different points around the tree.
- Be consistent with your units of measurement (multiply and divide feet by feet or inches by inches, for example.)
- Clinometers and transits are tools which allow you to measure the angle between a horizontal plane and the object you are looking at (the transit, in particular, also is used to measure angles between vertical planes). You want to measure the angle between the ground and the tree's top, but the clinometer or transit will measure the angle between the horizontal plane at your eye level (since you look through the instrument), and this is why you need to add your height to the calculation. Some clinometers and transits, however, allow you to adjust for your eye height. If you have already adjusted for your height do not add your height at the end of the calculation.
- Many trees are not perfectly vertical—they don't grow straight up. Using the angle of elevation methods you can adjust for an angled tree by measuring the distance between you and the point on the ground that lies directly below the tree's top, rather than measuring the distance between you and the base of the tree.
- You can make a simple clinometer very easily using a protractor. Check out the related wikiHow for instructions.
- This can be a fun activity for 4th to 7th grade kids.

Things to Consider

*These methods do not work well if the tree is on sloping ground.

*While the angle of elevation methods, if used correctly, can calculate the correct height within 2-3 feet, there is abundant opportunity for human error, especially if the tree is angled or on a slope. If precision is absolutely necessary, consult your local extension service or other such agency for assistance.

Things You'll Need: A friend (optional for three of the methods, but a little help makes the process easier and more fun), a pencil or ruler, tape measure or yardstick/meter ruler, a clinometer or square piece of paper

Sources and Citations

- San Francisco Chronicle article on discovery of world's tallest tree
- The Institute for Environmental Modeling—University of Tennessee Discussion of the use of right-triangle trigonometry in measuring trees
- National Trust of Australia Instructions on how to take measurements of trees, including girth, spread, and height.
- The Australian National University In-depth discussion of measuring trees, including use of specialized instruments and correcting for errors due to tree angle
- Love2Learn (Blogspot.com) Reproduction of old children's encyclopedia article on the shadow method
- U.S. Forest Service Advanced article on how to use a percent clinometer
- [1] CSGNetwork Tree Height Calculator

ELEMENTARY MATHEMATICS

PRESIDENTIAL AWARDEE

Congratulations Stacie Broden!

Stacie has been selected to receive the Presidential Award for Excellence in Mathematics and Science Teaching. She was nominated by her peers and ultimately selected by President Obama because of her outstanding teaching performance, her creativity in the classroom, and her commitment to awakening within students a deep appreciation of the beauty and importance of mathematics and science.

MOODY'S MATH CHALLENGE

Honorable Mention Winners

Staples High School Team # 143

New Canaan High School Team # 322

Valley Regional High School Team #6

Philadelphia, PA- Thirty students from four states were awarded team scholarship prizes ranging from \$2,500 to \$20,000 and were announced as the 2009 Moody's Mega Math Challenge winners this week after presenting their papers that evaluated the stimulus package's effect on employment to a panel of Ph.D.-level applied mathematicians during the final round of judging at the Moody's Corporation headquarters in Manhattan. The top six teams come from schools in Connecticut, New Jersey, Pennsylvania, and Rhode Island. In total, 389 teams from high schools in 12 states, from Maine to Washington, D.C., participated in the 2009 Challenge.

The teams overwhelmingly concluded that the stimulus package would work, given enough time. Impressively, the Champion team from High Technology High School in Lincroft, New Jersey, concluded that over the next three years, the stimulus act would create about 3.2 million jobs. Their model determined that tax breaks would produce the greatest increases in employment, approximately one million jobs, with education and infrastructure spending producing about 600,000 and 500,000 jobs respectively. The students also predicted that unemployment would fall to 6.22% by 2012. However, if this estimate were to fall short, a second stimulus package would be needed, focusing on

About the Challenge

Moody's Mega Math Challenge spotlights applied mathematics as a powerful problem-solving tool, as a viable and exciting profession, and as a vital contributor to advances in an increasingly technical society. Scholarship prizes total \$80,000 in 2009. The annual Challenge is entirely Internet-based and there are no entrance or participation fees. High schools from Maine to Washington, D.C. may enter up to two teams of three to five students each. Students choose which day they wish to work on Challenge weekend and have 14 hours to solve an open-ended, realistic, applied math-modeling problem focused on real-world issues. Teams can work from any location they choose and can use any free and publicly available resources, but they may not discuss any aspect of the problem with, or seek help from, their coach or anyone other than their teammates. Complete details, sample problems, and archives of previous winners and Challenge events are available at <http://m3challenge.siam.org/>.

unemployment benefits, food stamps, and aid to state governments.

"This was real data. We were doing the same sort of analysis that economists all over the country were doing using these huge, public data sets, finding out real, relevant, up-to-the-minute conclusions," said Matthew Warshauer, the lone junior from the High Technology High School team. His teammate, Steve Castellano, added, "Working on an applied math problem like this, where you see how everything relates to each other, was much more enjoyable and interesting than your typical science homework."

After giving their 15-minute PowerPoint presentations in which they explained their solutions and justified their conclusions to this year's Challenge problem, "\$787 Billion: Will the Stimulus Act Stimulate the Economy?" the top six teams, comprising 30 students dressed neatly in professional attire, answered tough questions from the judging panel before gathering with their teammates and coaches to anxiously await the final results. Many reflected on the 14 hours they spent working on the problem back in early March, while some discussed the ups and downs of their presentations with other teams.

Charlie O'Leary, a member of the second place team from Elk County Catholic High School in Saint Marys, Pennsylvania, noted that although the Challenge was labeled as a math competition it actually incorporated a lot more than that. "It involved social sciences and English and mathematics, and seeing how that applies to real life was interesting."

James Crowley, Executive Director of the Society for Industrial and Applied Mathematics, which organizes and administers the competition, was on the panel of judges for the presentations. Judges review papers and select the best ones to go to the final round, but he said it is always amazing to see the presentations from the top six teams. "The presentations are always impressive, and this year's top six teams were especially strong in both their presentations and their ability to field questions from the judges. They were able to grapple with a difficult problem, construct mathematical models, and do thoughtful analysis based on those models. As several of participants noted, they learned a lot about a subject area (the economics of the stimulus package) in a very short amount of time, and were able to work as a team to produce some useful results. Each of these teams is a winner."

Prizes for the 2009 M³ Challenge were awarded as follows:

M³ Challenge Champions, Summa Cum Laude Team prize of \$20,000

High Technology High School, Team #58, Lincroft, New Jersey

Coach: Ellen LeBlanc

Students: Steve Castellano, Ethan Dale, Jay Feldman, Dan Mane, Matthew Warshauer

M³ Challenge First Runner Up, Magna Cum Laude Team Prize of \$15,000

Elk County Catholic High School, Team #290, Saint Marys, Pennsylvania

Coach: Theodore Hanes

Students: Joshua Catalano, Eric Higgins, Donald Meier, Charles O'Leary, William Yost

M³ Challenge Third Place , Cum Laude Team Prize of \$10,000

The Wheeler School, Team #128, Providence, Rhode Island

Coach: George Lewis

Students: Matt Halpern, Brett Musco, Chris Shaw, Karan Takhar, Alex Wheelock

M³ Challenge Fourth Place , Meritorious Team Prize of \$7,500

Bergen County Academies, Team #119, Hackensack, New Jersey

Coach: Elizabeth Casarico

Students: Joshua Eiseman, Peter Humanik, Elan Kugelmass, Taesup Lee, Jordan Moldow

M³ Challenge Fifth Place , Exemplary Team Prize of \$5,000

West Windsor-Plainsboro High School North, Team #57, Plainsboro, New Jersey

Coach: John Cornell

Students: Shir Aharon, Chris Bergman, Moya Chin, Tracie Kong, YunHui Lin

M³ Challenge Sixth Place , First Honorable Mention Team Prize of \$2,500

Staples High School, Team #143, Westport, Connecticut

Coach: Gertrude Denton

Students: Kyle Beatty, Jonathan Choi, Jason Gandelman, Naveen Murali, Justin Sherman

Students representing 17 additional schools received Honorable Mention Team Awards of \$1,000 per team:

Academy for the Advancement of Science and Technology, Team #11, Hackensack, New Jersey

East Greenwich High School, Team #204, East Greenwich, Rhode Island

High Technology High School, Team # 126, Lincroft, New Jersey

Hunterdon Central Regional High School, Team #211, Flemington, New Jersey

J.R. Masterman Demonstration School, Team #92, Philadelphia, Pennsylvania

Kinnelon High School, Team #173, Kinnelon, New Jersey

McQuaid Jesuit, Team #469, Rochester, New York

Montgomery Blair High School, Team #251, Silver Spring, Maryland

Needham High School, Team #410, Needham, Massachusetts

New Canaan High School, Team #322, New Canaan, Connecticut

Shrewsbury High School, Team #228, Shrewsbury, Massachusetts

St. Joseph High School, Team #163, Metuchen, New Jersey

Stuyvesant High School, Team #293, New York, New York

Summit High School, Team #222, Summit, New Jersey

The Family Foundation School, Team #239, Hancock, New York

The Lawrenceville School, Team #253, Lawrenceville, New Jersey

Valley Regional High School, Team #6, Deep River, Connecticut



MARI MURI'S THANK YOU

(In regard to the newly established Mari Muri Award)

Dear members of the ATOMIC Executive Committee,

If it was your intention to totally surprise and shock one of your former members, you succeeded! I had no idea of your plans or intentions.

You have honored me so much in the past – with the Robert A. Rosenbaum Award and the wonderful retirement party in 2003, along with lifetime membership in ATOMIC. I am eternally grateful for these gifts, and therefore had no expectation of an additional honor.

You have humbled me! You have made me incredibly proud to have served the math community in CT and that you have chosen to honor future math leaders in my name.

Thank you for this generous recognition. I am honored to continue to be an active member of ATOMIC. I wish this vital organization continued success in serving the needs of the CT Math Community.

With sincerest thanks,

Mari Muri

Math Consultant, PIMMS

6 Shadow Lane, Cromwell, CT 06416



*Mari Muri and Maria Diamantis holding the newly established Mari Muri Award
(Photo taken at ATOMIC Conference 2008)*

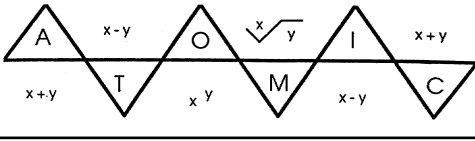
The 2009 Challenge, held on March 7-8, required student teams to evaluate whether the American Recovery and Reinvestment Act of 2009 will in fact stimulate the economy. The problem called for teams to mathematically assess the elements of the stimulus package that will most likely produce the greatest improvements in employment. They quantified their findings using mathematical modeling and quantitative analysis techniques, developed and defended their models, and justified their conclusions. Teams also had to gauge how quickly elements of the stimulus package are expected to generate results, ascertain how they will know if the package is working, and indicate a confidence level in their predictions. Additionally, they were asked to discuss whether a second stimulus package would be needed, and if so, how large it should be and how it should be structured. Finally, they were challenged to propose other, better ways to stimulate the economy and increase U.S. employment.

The top six winning solutions, photo galleries, and webcasts of the presentations and awards ceremony will be posted to the M3 Challenge website in the next week. To view these, and to find more information on the Challenge, visit <http://m3challenge.siam.org>.

NOMINATIONS PLEASE!

Please nominate your colleagues for the Robert A. Rosenbaum Award and the Mari Muri award! ATOMIC presents the RAR Award to a CT educator who has demonstrated ongoing excellence in mathematics education and an extensive impact on educators and youth in CT. ATOMIC presents the Mari Muri award to outstanding classroom teachers who have excelled in the profession.

*“Reach for the moon and you might
just fall amongst the stars”*



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