CHI ALPHA MU NEWSLETTER

Fall 2013

News From The President

Welcome back to school!

I hope you had a fun but restful summer break and are ready for another exciting year as a Chi Alpha Mu sponsor.

Middle school is a critical time to show students that mathematics is useful, powerful, and fun. These students should learn now that strong math skills will open up many career pathways.

A 2012 survey conducted by Raytheon found that out of 1000 middle school students, 48% enjoy learning about math outside of school and 85% of the students preferred learning math through activities. The survey also found that 58% of the students thought math would be important in their future, but many of them did not associate math with certain careers that require precise calculations!

This is where your **Chi Alpha Mu** club comes in. Take this opportunity to expose your students to applied mathematical activities and experiences. You can invite local professionals to speak to your club or take short field trips to allow your students to see first-hand how math is used on a day-to-day basis. Chapter grants for up to $250 are available to help make your ideas a reality.

Check our website (www.chialphamu.org) to see how previous grant recipients have used their money.

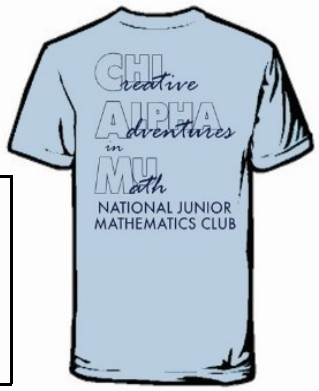
I hope this new school year brings you new ideas on how to reach out to your students. If we can be of any service to you, please do not hesitate to contact us

Todd Taylor

Todd Taylor, President
Chi Alpha Mu

Check out the website for merchandise: t-shirts, buttons, certificates, banners and more…

www.chialphamu.org



National Office News from Kay Weiss

I hope everyone had a great summer and all Chi Alpha Mu chapters will find many interesting activities to make math fun for their members during the new school year. I want to personally welcome Judith Deeley as our first Chi Alpha Mu Coordinator and thank her for her help. We look forward to hearing her ideas for chapters and her news about mathematical opportunities for your students. Please feel free to contact her or myself with pictures and stories about all the neat things you are doing with your members.

I hope you will read through this newsletter carefully. We have much to offer, including Chapter and Summer Grants now available, as well as some free stuff to send.

Thank you for the time you devote to your students. Please check our Mu Alpha Theta website, at www.mualphatheta.org. Click on the "Find a Chapter" link to the left, to find the Mu Alpha Theta high school chapters nearest your middle school. It is our hope that the students in our high school Math Honor Society will work with your students. Many of our Mu Alpha Theta chapters will send members to the middle school to mentor students, help them prep for a MATHCOUNTS exam, provide interesting math activities, or run a math competition for middle school students. This interaction is great for both sets of students. No high school chapter nearby? Just find a teacher at the high school willing to start a math club. It is a simple and inexpensive process to form a Mu Alpha Theta chapter.

Are there other middle schools in town? Spread the word about Chi Alpha Mu. Our reorganization of Chi Alpha Mu is still young, but we hope to grow. Showing students that math is both fun and useful in solving real-world problems is important, especially for middle school students who tend to think it isn't cool to be smart in math.

Have some fun hands-on activities to relate math to the real world? Share them with us. Have a favorite graphing calculator problem or an iPad math application to share? We would love to let others know.

It is critical to remember to get permission from the National Office before using Chi Alpha Mu's name on your Facebook page or on other social networking sites. A teacher or other approved adult must have administrative oversight of any site using our name.

Chi Alpha Mu Coordinator - Judith Deeley

Guardian Angels Catholic Middle School, Clearwater, Florida

I am pleased to have been selected to join the Chi Alpha Mu team in the position of coordinator. I teach mathematics grades 6-8 up to Geometry. My hopes are to pull from the many experiences I have in an effort to collaborate with many of you to keep this incredible opportunity for middle grades students alive and relevant. In addition to Chi Alpha Mu, I have been involved with the MATHCOUNTS National Math club and Competition program by facilitating club meetings and bringing teams to competitions locally and to the state level. I have been a recipient of Raytheon's MathMovesU Math Hero grant and have coached over 25 students to earn the MathMovesU Middle school scholarships. My math students have benefitted from technology and funding upwards from $30,000 over the last 8 years.

I will have completed a Master's degree from the University of South Florida in STEM (science, technology, engineering and mathematics) education for the Middle Grades in December of this year. Honeywell sponsored me to attend the Space Educator Program in conjunction with University of Alabama's continuing master's education program in STEM during the summer of 2013. I look forward to implementing exciting new approaches into my lessons this year as well as sharing those ideas with you. My goal is to teach mathematics through the lens of science, technology, engineering and the arts (STEAM).

Being so blessed, I would like to give back through service of my time by compiling and publishing the newsletter for both fall and spring in an effort to assist Chi Alpha Mu to disseminate information to help you in your classroom. If you have any questions or have suggestions for the spring newsletter, please email me at jdeeley@gacsfl.com

Give Aways and Grants

Free Key Curriculum TinkerPlots Program and Workbooks!

Key Curriculum Press has donated a copy of their TinkerPlots Program, copies of "Digging into Data with TinkerPlots" workbook and copies of their "Survey Toolkit" workbook. One chapter of Chi Alpha Mu will receive a single user copy of the program and copies of each of the two workbooks.

Want to win? Email us with information about what your chapter has been doing during your meetings. Have a fun idea or activity to share with other chapters? We want to hear from you!! Send a picture or two that we may use in our next newsletter. The value of each prize package is about $450.

Email Kay Weiss at matheta@ou.edu with your chapter activity!

Chapter Grants

Chapter Grants are available for up to $250 per chapter and may be used to support your activities. No chapter will receive more than $250 over time, and we may not be able to support all grant requests or provide the full amount you request, but let us know how we can help.

Summer Student Study Grants

Chi Alpha Mu will award up to four $500 Summer Grants of to support middle school students, in a Chi Alpha Mu chapter, who wish to attend a **summer math program**. These grants will be given on a first come/first serve basis to outstanding math students who apply. Not all applications may be approved. Funds will be sent directly to the program, when possible, and may be used to pay for tuition, transportation, or living expenses. The application form can be found online at our website, along with suggested summer programs.

Please email the office at matheta@ou.edu prior to sending in the application to see if grant money is still available. Students may receive a grant only once during their middle school years.

Raytheon's Math Moves U

http://www.mathmovesu.com/

Raytheon's MathMovesU is an innovative program designed to engage middle school students with math. To include algebra, geometry, decimals, fractions and word problems. MathMovesU.com can be used to supplement your classroom curriculum.

Visit MathMovesU.com for a variety of resources to include: classroom ideas, partnerships, games and scholarships.

Math Moves U Scholarships

Do you have a 6th, 7th or 8th grade student interested in competing for a $1,000 scholarship to either save for college or to use for a summer institute or camp? Watch for the posting of the MathMovesU scholarship. Entries will be due sometime in January of 2014. A matching grant is awarded to the math program of the school in which the student was awarded the scholarship. This past year, the prompt was connected to NASA's Curiosity mission: How does MATH drive your curiosity?

Math Moves U Scholarships

Nominate a Math Hero. Math teachers and volunteers who work with students are eligible to receive a $2,500 Math Hero Award which is accompanied by a matching $2,500 grant to their school or approved math-related nonprofit organization of their choice. This is awarded to individuals once per career.

Free TI-84 Plus Calculators!

The National Office has five free TI-84 Plus calculators to give away. The first five chapters to email and request one will receive one calculator each.

Chapters who have received a calculator in the past two years are not eligible.

Email

Matheta@ou.edu

For either the calculators or the AMC CD

We still have a few free copies of an AMC (American Mathematics Competition) CD left to give away. These include the American Junior High Mathematics Exams from 1985 – 1999 and the AMC8 Exams from 2000 – 2007. This is a $25 value that we will send you free, on request. Just email for your copy, while they last.

Check out that website for details about the competition

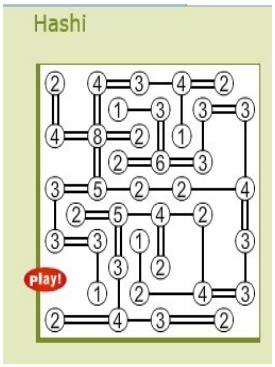
www.maa.org/math-competitions

Puzzles and Problems

Creative problem solving and logical reasoning can be developed in a fun way by implementing the use of puzzles either in the classroom or in your math club. While Suduko has been popular for years, there are two others that also foster the problem solving skills. KenKen is a number and operation puzzle. Haishi is a reasoning puzzle. NCTM and MATHCOUNTS have adopted KenKen and Haishi is on the horizon.

Find Haishi at
www.conceptispuzzles.com/

Also, search for free versions for computers and Apps for Ipads and tablets.



KenKen—www.KenKen.com or

www.illuminations.nctm.org

Find additional problems similar to those found below as well as the solutions at the Franklin Institute Resources for Science Learning.

http://www.fi.edu/school/math2/sept.html

Try these:

1. List 10 possible combinations you could get with 4 darts. The numbers on the targets are 7-5-3-1

2. Regina has received a pet rabbit from her neighbor Rodney who is about to move to an apartment that does not allow pets. Her father is going to help her build a run for the rabbit in their back yard, but he wants Regina to design it. Regina sits down to think about the possibilities. Her father says that the run must be rectangular with whole number dimensions. If they want to enclose 48 square feet, how many options do they have?

   If you fold a square paper vertically, the new rectangle has a perimeter of 39 inches.

   What is the area of the original square?
   What is the perimeter of the original square?
   What is the area of the resulting rectangle?

Chapter News

Guardian Angels Catholic school is in its inaugural year as a charter member of Chi Alpha Mu. 10% of the middle grades students participated in the weekly math club meetings. During these meetings students utilized MATHCOUNTS club materials and activities, Chi Alpha Mu recommended links and teacher generated material. Students also conducted experiments in order to compare varying data and to mathematically describe relationships such as the experiment outlined on this page.

All students in the school created a project to respond to the scholarship competition sponsored by Raytheon's MathMovesU program. 50 projects were submitted to the nationwide competition and 12 students won a $1,000 scholarship each plus our math program received a matching grant for each recipient. Our goal this year is to continue with the math club and add a monthly STEAM activity as well as a STEAM camp next summer.

Join Chi Alpha Mu today as charter member, only $15.00 for a lifetime membership. Connect with other schools and share information.

Activities

Students were provided with balloons, baking soda, vinegar, empty water bottles and duct tape. They also had access to measuring cups and measuring spoons. Additional tools needed were measuring tapes and goggles (borrowed from science teacher).

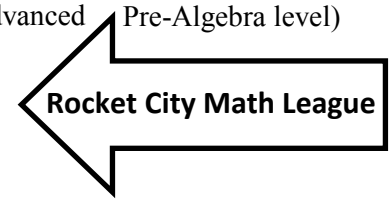
Baking Soda	Vinegar	Circumference (mm)
1/4 cup	1/3 cup	385 mm
1/2 cup	1/2 cup	490 mm
3/8 cup	3/4 cup	577 mm
1/3 cup	1/2 cup	500 mm
1/2 cup	1/4 cup	400 mm
1/3 cup	1/3 cup	421 mm
2/5 cups	3/5 cups	n/a
		580 mm

Baking soda was funneled into the balloon, while vinegar was poured into the empty water bottles. The lip of the balloon was then joined to the opening of the bottle with duct tape. The balloon was lifted and held while the reactants began to release gas into the balloon. Once the balloon reached its peak based on the completion of the reaction, students then measured the circumference of the widest part of the balloon in millimeters. A table was created to compare the varying measures of reactants to the circumference of the balloon. Much conversation took place making conclusions about which combinations resulted in either the least or greatest circumference. We also used this information in class to reflect upon ratios, fractions, conversions, and more.

The Rocket City Math League is a free, international math contest that is open to all middle school students. Students from around the world participate in the competition. Students enroll in a division that tests them at the level of their background. Divisions for middle school students include:

- Explorer Division - Pre-Algebra students (or any student who has not yet entered Algebra I

  Test content, however, will be at an advanced Pre-Algebra level)
- Mercury Division - Algebra I students
- Gemini Division - Geometry students
- Apollo Division - Algebra II students



To test in a division, students must be currently enrolled in or have completed the mathematics course at that level and cannot be enrolled in or have completed a higher level mathematics course. In order to be eligible for awards, students may compete in only one level.

There are three 45-minute tests for each division, each consisting of 10 questions.

In October, the year starts off with an "Interschool" Test, where teams of students work on a 15 question test for 30 minutes using a single answer sheet. Middle School teams compete in Division B in this contest.

Tests may be administered on any one day during the testing period, as determined by the Chi Alpha Mu sponsor. Team scores are calculated by adding the top five scores of all students in the same division and enrolled in the same school. The top 25 students in each level will win a trophy and the top 10 schools in each level will win a plaque. Mu Alpha Theta will provide other prizes, also. Sign up at **www.rocketcitymath.org.**

All materials related to the Rocket City Math League, including test, solutions, and RCML guidelines, are emailed to each school or made available online, where the team sponsor can make copies and administer the tests during the periods designated below:

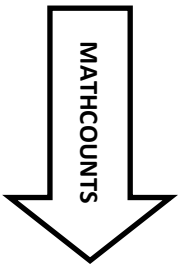
Testing dates for the 2013-2014 competition will be:

-Interschool Test: Oct 21 – Nov 1, 2013

-Round One: Jan 13–24, 2014

-Round Two: Feb 10–21, 2014

-Round Three: March 10–21, 2014



MATHCOUNTS offers great opportunities for students and free, high-quality materials for educators. Go to **www.mathcounts.org** for more information.

MATHCOUNTS Competition Series: The MATHCOUNTS Competition Series is the only competition of its kind, with live, in-person contests taking place in over 500 local chapters nationwide. With four levels of competition - school, chapter, state and national - the Competition Series gives students the opportunity to compete against and alongside other bright, motivated students in head-to-head "bee-style" contests. Learn more at **www.mathcounts.org/competition**.

The National Math Club: The National Math Club gives Club Leaders the structure, resources and incentives to create and run their own math club. With creative, fun, interactive activities and great awards for active clubs, The National Math Club makes math engaging and interesting for students of all ability and interest levels. Learn more at **www.mathcounts.org/club.**

Math Video Challenge: The Math Video Challenge gives students the opportunity to combine math, creativity and technology in a fun, unique way. Students work in teams of four to create a video that answers a MATHCOUNTS problem and demonstrates the real-world application of the math problem. Learn more at **videochallenge.mathcounts.org**.

Solve-A-Thon: Created with teachers and students in mind, the Solve-A-Thon is a unique fundraising tool that gives students the opportunity to use their math skills and determination to earn money for their math club and local community! Unlike typical fundraisers, 100% of the money raised through Solve-A-Thon directly goes towards supporting math programs in your club and local community, with 60% going to the school. Learn more at **solveathon.mathcounts.org**.

Resources

The following is a brief sample of the websites posted at the Chi Alpha Mu website. They contain many helpful resources for your math classroom and club.

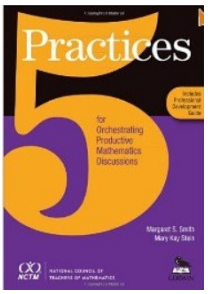
http://illuminations.nctm.org/ - **National Council of Teachers of Mathematics**

http://www.jamestanton.com/ **Thinking Mathematics**

http://www.maa.org/ **Try: MAA Found Math, MAA MinuteMath, or MAA Number of the Day**

https://www.mheonline.com/piday/index.php **Pi Day Activities**

Highly recommended is the book **5 Practices for Orchestrating Productive Mathematics Discussions** by Margaret S. Smith & Mary Kay Stein . This book contains ideas for encouraging engaging dialog amongst students as it relates to problem solving. Smith & Stein share practices for developing lessons that promote making mathematical connections.



COMMON CORE STATE STANDARDS INITIATIVE
PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREER

http://www.corestandards.org/

Eight Math Practices

Make sense of problems and persevere in solving them.

Reason abstractly and quantitatively.

Construct viable arguments and critique the reasoning of others.

Model with mathematics.

Use appropriate tools strategically.

Attend to precision.

Please share how you and your students demonstrate any of the eight math practices in your classroom or club. Send in photos with media release forms and a write up describing the activity or lesson.

Email jdeeley@gacsfl.com or

mail to Guardian Angels School, 2270 Evans Road, Clearwater, FL 33763