



Mathesis

Volume 48, Issue 1

August 2015

Upcoming Deadlines:

- Early Bird Registration for ATMNE 2015- September 15th
- Early Bird Registration for NCTM's Regional Conferences
 - September 18th- Nashville
 - October 11th- Minneapolis
 - October 16th- Nashville
- Information for November Mathesis- November 1st
- Dine & Discuss (Holiday Inn Concord) - November 9th
- Prevost and Evans Award Nominations- December 15th
- Balomenos Award Nominations- January 1st

President's Message: Goals for the New School Year

By Cecile Carlton

It's back-to-school time. The time to prepare for the new group of students, back to school parents' nights, and identifying goals for you and your students in the upcoming school year. The New Hampshire Teachers of Mathematics Executive Board held its annual summer retreat to identify key activities for teachers as well. NHTM is here to continue to provide resources and professional development with a focus on developing community. NHTM has been a great mathematical community for me, but we still have room to grow. For this year we want to build upon the strengths of the organization, identify the things we can improve upon, and tap into the knowledge and enthusiasm of the younger generation.



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President's Message: **Goals for the New School Year**

(CONTINUED FROM PAGE 1)

Let's review the resources you can consider as you plan for the new school year. In those plans don't forget to make explicit plans for engaging parents and families. Parents can be invaluable supports for their children's mathematics learning. It is important to send parents basic information about their children's mathematics class, such as course outlines, assignments, and descriptions of teacher expectations, they typically need much more than that to support their children's mathematics learning. Perhaps you had a chance to read Diane Briars, NCTM President's Message: **Back to School: The Time to Engage Parents and Families**. You can check out her suggestions and resources at http://www.nctm.org/News-and-Calendar/Messages-from-the-President/Back-to-School_-The-Time-to-Engage-Parents-and-Families/.

NHTM is an affiliate of NCTM, National Council of Teachers of Mathematics, and there are numerous resources you can access at their site. One of my favorite areas is at <http://illuminations.nctm.org/>. You can find lesson ideas by grade level and interest areas. Each lesson provides an instructional plan, identifies objectives and standards, list of materials, assessments and extensions to consider, questions for focus and reflection, and related resources. I recently tried the Tetrahedral Kites with my granddaughters as an activity to get through some of the rainy days of summer (fortunately we did not have too many – but we did have

those late afternoon thunder squalls).

We are also an affiliate of NCSM – The National Council of Supervisors of Mathematics. Targeted for mathematics educators in leadership roles, <http://www.mathedleadership.org/about/mission.html>, NCSM provides networking and up-to-date happenings in mathematics learning for leaders, teachers, and students.

We are looking to organize a book study and use our regional structure for area discussions and coming together at our Spring Conference with all groups across the state. More details will be available on our web site as we get the structures in place.

NHTM is an organization for teachers – our board members are elected and appointed. The members of the board volunteer their time to make this organization work for you. We are in need of your most valuable commodity – time. Give some of your time to help us plan and endeavor to offer worthwhile professional development activities. At our summer retreat we set in motion plans for our Fall Dine and Discuss, our Spring 2016 Mathematics Conference and our FALL 2016 ATMNE Conference. We need volunteers to help us on committees. We could use assistance with registration, technology, exhibits, and signs. If you can help – send me an email at nhtmpresident@nhmathteachers.org and I can forward more specific details.

In addition, for those of you who want to take a more active role in NHTM we have a call for nominations for the NHTM Executive Board. Upcoming positions include the Secretary and Post-Secondary

President's Message:
Goals for the New School Year

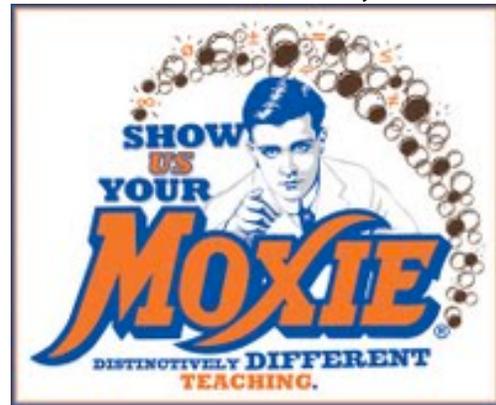
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Representative. To learn more about these roles check out our web page <http://www.nhmathteachers.org/page-1715832> and click on the position to learn more about the duties of that role. If you are ready to provide leadership for teachers across the state, do consider running in our upcoming elections. We are also looking for members to serve as coordinators in the 'West Central', 'South West', and 'South Central' regions. If you are interested in serving in that capacity e-mail me at nhtmpresident@nhmathteachers.org and let me know your thoughts on what you can offer in ways of making contact with members in your region and continuing to build upon creating a Community of Learners.

I am always interested in hearing from our members, ideas on how we can

encourage new membership, letting me or other board members know your immediate professional needs that we as an organization can help to address and bring worthwhile resources to work together as a community. Don't forget the

ATMNE Fall Conference
 ~ Portland Maine ~
October 29 - 30, 2015



P.S. Remember up to date information about our NHTM activities can be found on our web site <http://www.nhmathteachers.org/>. Let's get ready for an exciting year!

Post Secondary Representative
Advice for K-12+ Mathematics Educators – Earning Respect

By Rich Andrusiak

This academic year, let's all make a conscience effort at earning professional respect. Most of us, if not all, at some point in our academic careers have complained about how teachers are not treated with professional respect. I've witnessed a lack of professional respect for teachers stemming from family members, administrators, "friends" in other disciplines, the general public, and from other mathematics educators (e.g., a high school teacher not respecting the knowledge of an elementary teacher; a college professor not respecting the knowledge of a high school teacher). The time has come to earn respect. The solution is fairly simple. Stop complaining and be specific about what you do on a daily basis when asked by friends, colleagues, administrators, parents, and the public.

Post Secondary Representative **Advice for K-12+ Mathematics Educators – Earning Respect**

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When your administrator questions how your day is going, make certain to explain how Mika was able to create story problems that illustrate both partitive and quotative division scenarios. When a friend comments about how you must have enjoyed your summer off, tell him you had a lot of fun creating a new lesson plan to help students discover which linear relationships are directly proportional relationships and which are not from symbols, graphs, tables, and verbal descriptions. When your friend asks how your day was, make certain to tell her how great it was and show her the Russian Peasant Algorithm that Nataleigh used to solve her multiplication problem. Don't forget to make certain your friend can determine whether or not Nataleigh is correct and why the algorithm works. When a parent questions his daughter's learning in your class, clearly explain how you assessed that his daughter doesn't need an accommodation plan requiring the use of a calculator on assignments, but rather doesn't understand how algebra is generalized arithmetic and would benefit from geometric models for multiplying binomials, work with the partial product algorithm, and the use of algebra tiles. When a family member comments about all the free time you have after school, tell her that you were working with Shane since he discovered the formula for the mean average deviation and was wondering why deviations are squared in the least squares regression formula.

Hopefully these examples illustrate my point. Don't forget to add your pedagogical knowledge to the conversations and highlight the current news and events in mathematics education. It's time to demonstrate your expertise and all the hard work you do for mathematics students across the state. Be proud of what you do and the work that you accomplish. Make those accomplishments known and earn the professional respect that you deserve this academic year!

Please contact me with any comments or questions at randrusiak@ccsnh.edu.

Middle Level Representative **Appreciating Math**

By Katrina Hall

The days of summer brought about ample opportunities to appreciate math. As soon as the last day of school came and went, the days were wide open. Instead of correcting papers, and preparing for daily lessons, each day became an opportunity

to breathe and appreciate the beautiful days of summer. Before long, came the realization that math really is everywhere.

The question of "when are we ever going to use this?" is not new to those in math education. Students are often questioning the value of what is being taught. Educators often do an over-the-top of designing their lessons and assessments to support students in their wonder. The question is answered. However, are

Middle Level Representative **Appreciating Math**

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educators teaching students to appreciate mathematics?

There are standards, too many to list, that educators are responsible for during the year. Lessons are taught, assessments are created and standards are achieved. This process continues on a regular basis until the school year is done. Students are taught the application and skills of mathematics but how are educators doing with teaching appreciation of math?

Math truly is everywhere. Driving down the road there are route mile markers to mark location and direction on the highways. The Golden ratio is utilized in credit cards, televisions and naturally recognition of beauty. Pick up a handful of sand and wonder about the weight, number of grains or even the size of one granule. Stop for a few seconds. Look around. What math do you see within those few seconds?

Of course, math standards need to be taught but math appreciation should not be pushed to the side. Traveling to a NH craft

fair, the math in arts is apparent. Analyze the symmetry and perspectives used by artists. Ask the artist, and he/she may deny the use of a math skill to create or even argue the he/she is “not a math person.” One could then argue that math is an innate skill.

Consider viewing the world without mathematics. Is there anything in this world that is not in some way connected to mathematics? Is everything deeply rooted in number and geometry? Whether innate, natural or taught mathematics is everywhere.

As educators, we want to teach standards but consider adding appreciation into the classroom. Use a story, a photograph, a song, or any piece of art you can find. Ask students to silently look at the work and reflect upon the mathematics they “see.” Could it exist without mathematics?

Dan Meyers has created a site called 180 questions (www.101qs.com). Take a peak at the world through a mathematical lens. Develop an appreciation for the math around us and as the school year begins focus on developing this appreciation for mathematics in students. Appreciation is contagious....exponentially I believe! ☺

New Hampshire Students Earn Scholarships

NHTM is pleased to announce the winners of this year’s NHTM scholarships. This year, there were no college recipients. Due to the quality of the high school applicants, the NHTM Executive Board voted to award two high school scholarships. Our recipients are Jack Dewsnap, a 2015 graduate of Portsmouth High School, and Alyssa Blodgett, a 2015 graduate of Groveton High School. Jack plans to attend Dartmouth College and major in mathematics. Alyssa plans to attend the University of New Hampshire and major in applied mathematics. Congratulations!

Art's Attic: **William Playfair**

By Art Johnson

Who invented the bar graph? Who invented the line graph? Who invented the pie chart? They were all invented by Scottish mathematician William Playfair. William Playfair (1759-1823) was the younger brother of the most prominent mathematician in nineteenth century Scotland. Older brother John Playfair (1748-1819) was an engineer, philosopher, mathematician, and Edinburgh professor. John Playfair is best known in mathematics circles for his work with Euclid's Fifth Postulate. He tweaked the problematic postulate so he could claim, "Euclid vindicated from every flaw". Of course, his re-write did no such thing, but it was only after Playfair died that non-Euclidean geometers proved the Fifth Postulate was not a postulate after all.

Given the fame of his older brother, what would William Playfair do? Should he try to compete with his brother in mathematics or follow a completely different career path? As it turns out he did a little of both. His father died when William was thirteen and brother John took over the family responsibilities. After an apprenticeship with Andrew Meikle, the inventor of the threshing machine, William became the personal assistant of James Watt. (Yes, that James Watt, the inventor of the steam engine).

These two apprenticeships set him on a life's path of practical, applied science and mathematics. After working with Watt, Playfair was in turn a millwright, engineer, draftsman, accountant, inventor, statistician, pamphleteer, translator, publicist, land speculator, banker, editor, and journalist. He also found time to be the only Scotsman to storm the Bastille with French revolutionaries in 1789.

Although he was not the same caliber of mathematician as his older brother, William Playfair made lasting contributions to mathematics. He invented the line graph (1786), bar graph (1786), and pie chart (1801). These new ways to represent mathematical relationships were in keeping with his practical bent. None of these compares in a pure mathematics sense to brother John's writing about Euclidean geometry, but their influence is felt in everyday mathematics some 250 years later.

Everyone is familiar with bar graphs, line graphs, and pie charts, but how many people know anything about John Playfair's work with the Fifth Postulate? It looks like little brother finished ahead of his big brother.

Fall 2015 Dine & Discuss
The Difference in Teaching & Learning - The Mathematical Practices
Monday, November 9th from 4:30 P.M. until 7:45 P.M. at the
Holiday Inn, 172 N. Main Street, in Concord, NH

Art's Attic: William Playfair

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Below are some examples of the graphical representations that Playfair invented.

1. Bar Graph

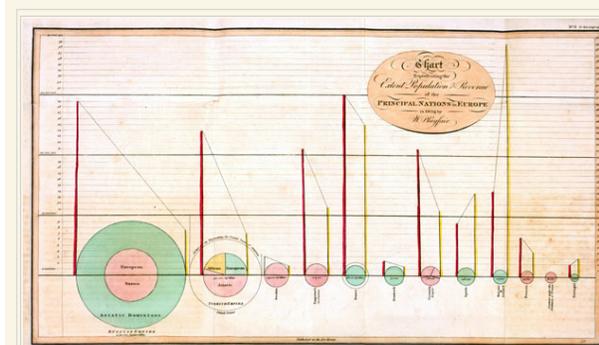


Figure 4: William Playfair, *Inquiry into the Permanent Causes of the Decline and Fall of Wealthy and Powerful Nations*, (1805), figure 1.

2. Line Graph

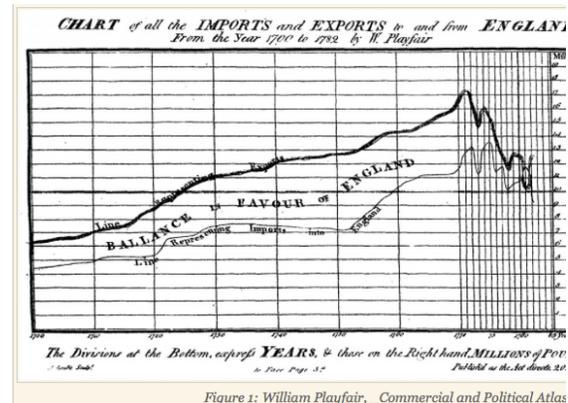
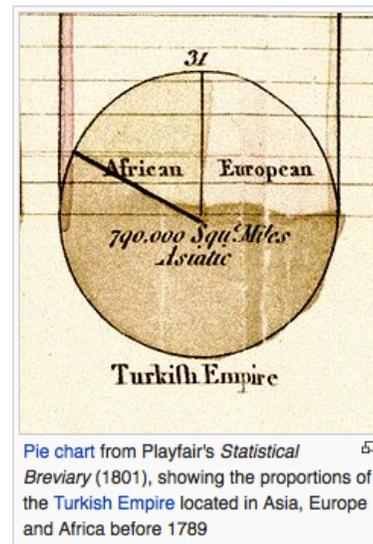


Figure 1: William Playfair, *Commercial and Political Atlas*

3. Pie Chart



Pie chart from Playfair's *Statistical Breviary* (1801), showing the proportions of the **Turkish Empire** located in Asia, Europe and Africa before 1789

Secondary Representative Students Need to Open Doors, Not Close Them

By Michelle Fox

With the cooler weather we have been having the last few days, I am getting ever so excited for fall and with that, of course, comes the beginning of yet another school year! As I get my classroom ready and prepare my materials and myself for the first day of school, it saddens me when I get my class lists and realize that students that are capable of taking more mathematics classes have not enrolled in advanced mathematics classes. Despite multiple emails home from the guidance office and from me personally, some students are not willing to take the “additional” courses, instead settling for the minimum amount required for graduation.

Secondary Representative **Students Need to Open Doors, Not Close Them**

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I read this quote recently: "I advise my students to listen carefully the moment they decide to take no more Mathematics courses. They might be able to hear the sound of closing doors." - James Caballero, from "Everybody a mathematician?", CAIP Quarterly, Fall 1989. Very few young people are willing to admit or have the foresight to see that the decisions and missed opportunities in high school can haunt them for the rest of their adult lives. What if the college that they apply to requires four years of math, and they only chose to take three? Or if the major that they want to pursue requires Algebra II experience, and they stopped at Geometry? These things have happened to dozens of students throughout my 16-year teaching career. Those students then cannot attend the college that they had at the top of the list or have to take remedial courses in college to get "caught up" with the students who did take the correct high school courses to put them on the career path of their choosing.

I understand that when you are a teenager, you think you know everything. I also understand that the "real life" future our students will face some day is so far from tomorrow that they are sometimes unable to comprehend the ramifications of today's decisions. Hindsight is as they say, 20-20!! I just wish that this generation of students would all take advantage of every opportunity awarded to them so that they do have open doors at all crossroads in life. They would then never have to be told "no" that they cannot pursue a particular career because they were not aptly prepared, or be unable to meet a college admissions requirement. These "21st century learners" have a tough road ahead of them, competing with people from all over the world for jobs and dealing with the technological advances that haven't even been invented yet.

I truly cherish the students who push themselves to do their personal best, take all of the courses that they possibly can in high school so that they can truly "be all that they can be" and will have the ability to pursue anything that they want to in their post-secondary pursuits. I personally hope the day never comes that this minority of students who are closing future doors become the majority. I will never think that doing the minimum possible is acceptable, and I will continue to nag and push and prod my students to be the best that they can be and avoid hearing those proverbial future doors closing on them.

Stay Informed!



- NHTM New Hampshire
Teachers of Mathematics



- @NHTM1964

Elementary Representative **Standards for Mathematical Practice and Meaningful Tasks**

By Amy Gregoire

It doesn't seem to matter how many years I have been teaching, August 1st brings with it a mix of emotions. I start to feel that nervous excitement of a new school year and start to concretely think about my plans for the upcoming school year. How will I engage students in tasks that are aligned with the Common Core and incorporate the Standards for Mathematical Practice as well?

I recently had the opportunity to hear Diane Briars, NCTM president, speak and she really got me thinking. How do we prepare students for a world we can't envision? When I was growing up we had rotary phones, no cell phones, we typed on a typewriter, no computers. Now we have iPads, Google docs, Skype, schools implementing one to one initiatives with their students. Since we have no idea what the future holds for our students, we need to teach our students to think and reason. We need to shoot for deeper learning; knowledge, which is transferable. The foundation of transferable knowledge is understanding. Understanding facilitates initial learning and retention, and understanding supports appropriate application and transfer.

The purpose of the math practice standards is to help students think and reason. They can be grouped together to support math practice 1, problem solving

- 1 Problem Solving**
- 2 and 3 Reasoning and Explaining**
- 4 and 5 Modeling and using tools**
- 7 and 8 Seeing structure and generalizing**

These are the goals for our mathematics instruction; all instruction should be taking place through the mathematical practices. Throughout the process students will also be expected to be attend to precision, math practice 6.

Knowing all this, the question becomes how do we plan our lessons so we are purposefully incorporating the math practice standards within the tasks we are doing? Diane Briars explains that what you decide for mathematical tasks is one of the most important decisions a teacher makes. The learning doesn't come from doing the task; the learning comes from the discussion afterwards.

I recently came across a planning sheet created by the Education Development Center Inc., which I found to be a helpful resource.

Elementary Representative **Standards for Mathematical Practice and Meaningful Tasks**

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Task Planning Protocol

1. Which mathematical tasks are you discussing? Briefly describe where it fits into the mathematical unit you teach (e.g. What are the prerequisite skills needed? What is taught before and after this task?)
2. Complete this table to indicate the mathematical thinking you want students engaged in when working on the task. Your thinking about how you will use this task (question# 3-6) may influence your goals for this task.

	What do you hope <i>students will know, understand, or be thinking about</i> by working on the task?	What will students say, <i>write, show, or do</i> to communicate that understanding or thinking?
<i>Mathematical Content</i> students will work on:		
<i>Standards for Mathematical Practice (SMP)</i> students will engage with:		

3. In what ways, if any, might you modify or adapt the text of the task to better promote student engagement in the mathematical content and Standards for Mathematical Practice? If altering the goals of the task, revisit question 2.

4. Use the table below to anticipate what students will do and, based on what you anticipate, what might you do to support students in engaging in the Standards for Mathematical Practice while working on the task.

What do you anticipate students will do/say/write? (<i>What challenges will they face? Where will they get stuck? What ideas will they pursue? What will be typical responses?</i>)	How will you support students' engagement in the SMP? (<i>What questions will you ask? How will you group students? What other strategies will you use?</i>)

5. How will you *launch* the task to support student engagement in the mathematical content and Standards for Mathematical Practice goals?

6. How will you have students share and discuss their work on the task to further support student engagement in the mathematical content and Standards for Mathematical Practice? What are the key ideas that you would hope to emerge in the discussion?

Elementary Representative **Standards for Mathematical Practice and Meaningful Tasks**

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There are many sites out there that have mathematical tasks; one of my favorites is Illustrative Mathematics, <https://www.illustrativemathematics.org>. Another resource that I have found incredibly helpful is a wiki that has been created by Howard County Public Schools, <http://hcpssfamilymath.weebly.com/elementary-math.html>. I hope you find these resources helpful and I wish you a wonderful start to your school year!

Classroom Activity Submitted by Amy Gregoire, Elementary Representative

Eliminate It

This is an activity that could be done as a warm up. It is used to promote discussion, helping kids to listen and build on one another's ideas.

Start with a table with four numbers, shapes, or vocabulary.

25	26
31	27

Ask students which number doesn't belong and why.

Once students have thought on their own, ask them to share one that someone shared with them within their group. This provides a safe way for students to share in case they had difficulty with the task. Record their ideas on chart paper along with a justification.

One is Unique	Reason/Justification
25	Perfect square
27	Perfect cube
31	Is prime
31	Not consecutive 25, 26, 27
26	Only even number
31	Not in twenties

Classroom Activity Submitted by Amy Gregoire, Elementary Representative

Eliminate It

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As a teacher you may stop and pause and say, "Talk with your partner. What does that mean, it is prime?" Then you may say, "Can you come up with another number that is prime?"

Research shows that if children understand the context of the problem they are willing to take risks.

The next time have students share one they came up with. This activity can be adapted both up and down. Your focus will determine what kinds of conversations you pursue, whether you want to focus on benchmark fractions, odd numbers, the attributes of a circle, or if you are just recording that day.

$\frac{1}{3}$	$\frac{4}{3}$
$\frac{4}{6}$	$\frac{4}{5}$

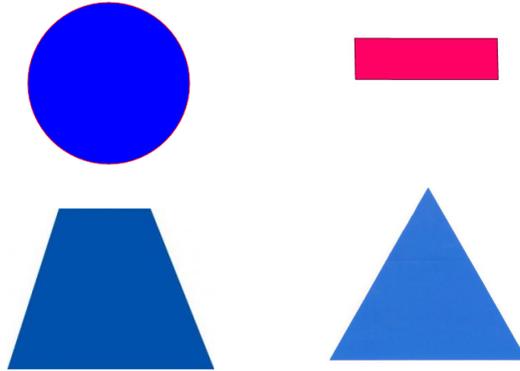
This time, share one you came up with.

One does not belong	Why? Explain it?
$\frac{4}{6}$	Can be simplified to $\frac{2}{3}$
$\frac{4}{3}$	Is an improper fraction
$\frac{1}{3}$	Is the only one that can't be estimated to one whole
$\frac{4}{5}$	Isn't easily broken into thirds
$\frac{1}{3}$	Only fraction without a 4 in the numerator
$\frac{4}{3}$	Is more than one
$\frac{1}{3}$	Farthest from one

Classroom Activity Submitted by Amy Gregoire, Elementary Representative

Eliminate It

(CONTINUED FROM PAGE 12)



One does not belong	Why? Explain it.
circle	It is the only one that does not have straight sides
rectangle	Not blue
circle	Not a polygon
rectangle	Smaller than the others
triangle	Only one with three sides

There is also a website that provides ideas for your boxes; it is called *Which One Does not Belong*. <http://wodb.ca>

NCTM Representative **What Are the Benefits of Membership?**

By Terri Magnus

Are you a member of the National Council of Teachers of Mathematics? Although the New Hampshire Teachers of

Mathematics (NHTM) is an affiliate of NCTM, membership in one organization does not immediately imply membership in the other. I encourage you to consider belonging to both organizations.

As a member of your local affiliate, NHTM, you gain access to conferences, workshops, and other activities for

NCTM Representative **What Are the Benefits of Membership?**

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mathematics educators in New Hampshire and New England. You are also automatically enrolled in the Association for Teachers of Mathematics in New England giving you a discount to the fall ATMNE conference. You will learn how state and regional mathematics educators and administrators are working together to share effective mathematics lessons and to implement the Common Core State Standards in Mathematics. You can nominate your colleagues (or yourself) for statewide recognition. Whether you are a new teacher or a veteran, you can get involved in planning the activities of NHTM, sharing your successes, and acting as a school liaison.

Being a member of the national organization, NCTM, also has its benefits. You choose the grade-level NCTM journals that will benefit you most directly; all are outstanding. Members-only sections of the NCTM website give you access to numerous lessons, classroom-ready activities, and interactive applets. You can watch e-Seminars on current issues and hot topics. In addition, you can access NCTM's rigorous, college- and career-readiness standards, tools that will help you effectively advocate for mathematics education, and research-based reports. Members receive discounts on NCTM publications as well as national and regional conference registrations. This year regional conferences are scheduled for Atlantic City (October 21-23), Minneapolis (November 11-13), and Nashville (November 18-20), and the

national conference will be held in San Francisco, April 13-16. Recent advocacy work of NCTM includes insuring that the CCSSM standards reflected the NCTM standards and research. This May NCTM and its affiliate, the National Council of Supervisors of Mathematics (NCSM), advocated for changes to the **EdReports** reviews of mathematics curriculum materials to make them more accurate and informative. **EdReports** has since adopted some of these recommendations. More information can be found at <http://www.nctm.org/News-and-Calendar/News/NCTM-News-Releases/NCTM-Calls-for-Changes-to-EdReports--Reviews-of-Common-Core-Instructional-Materials/> .

Our affiliate directly benefits from the national organization through training, leadership, mentorship, and advocacy. In addition, your membership in NCTM can help NHTM financially. When registering or renewing your NCTM membership, be sure to select NHTM as your affiliate. A rebate of \$3 for a renewal or \$5 for a new membership will be sent to NHTM or your designated affiliate. NCTM also recognizes affiliates with high participation in the national organization through its Affiliate Leadership Circle (ALC) program. Affiliates with a certain percentage of members also belonging to NCTM are recognized at the Silver (35%), Gold (50%), or Platinum (65%) level. Affiliates meeting ALC status receive recognition by NCTM and complimentary registration(s) to the NCTM Affiliate Leadership Conference.

Please consider becoming a member of NCTM. The benefits to your career, your students, your affiliate, and the greater mathematical community are significant.

The Presidential Awards for Excellence in Mathematics and Science Teaching

Do you know a mathematics teacher who needs to be recognized for their contribution to teaching and learning and their ability to help students make progress in mathematics? Is this educator a model in both their classroom and in their community? Do you feel they should receive national recognition as an exceptional teacher? Then it is time for you to think about nominating that teacher for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) award!

The Presidential Awards for Excellence in Mathematics and Science Teaching is the nation's highest honor for teachers of mathematics and science. The award recognizes those teachers who develop and implement a high-quality instructional program that is informed by content knowledge and enhances student learning. The winners are selected by a panel of distinguished scientists, mathematicians, and educators following an initial selection process done at the state level. Each year the award alternates between teachers teaching kindergarten through 6th grade and those teaching 7th through 12th grades.

Each awardee receives a certificate signed by the President of the United States and a \$10,000 award from National Science Foundation (NSF). Awardees and their guests are honored during events that take place in Washington, DC. These events include an award ceremony, celebratory receptions, professional development programs, and discussions with policy-makers on how to improve mathematics and science (including computer science) education.

Teachers must have at least five years of teaching experience in mathematics and/or science prior to application, and be a full-time employee of his or her school district (public or private). Teachers who have been nominated before and have not previously won this award may be nominated again. Nominations for teachers of grades K-6 will be opened in the fall.

If you would like more information regarding PAEMST, please contact the State Coordinator of Mathematics Donna Dubey at Donna.Dubey@doe.nh.gov.

Nominate a NH Math Educator for a NHTM Award

NHTM encourages its members to nominate mathematics teachers for the Fernand J. Prevost Teaching Award, the Richard C. Evans Distinguished Educator Award, and the Richard H. Balomenos Memorial Award. Nomination forms and applications for each of these awards can be found on the NHTM website www.nhmathteachers.org. The descriptions and instructions for each of these awards are described on the following page.

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Fernand J. Prevost Mathematics Teaching Award

Nominees are being sought for the annual FERNAND J. PREVOST MATHEMATICS TEACHING AWARD. NHTM is presenting the award in recognition of the contribution that Ferd has made to the mathematics educators of New Hampshire during his thirty years as the state mathematics consultant. The award is being given to a beginning teacher in her/his first, second, third, or fourth year who meets the following criteria which exemplify the characteristics which Ferd has brought to his teaching:

- commitment to good mathematics
- confidence that children can learn
- a spirit of self reflection and professional curiosity
- caring and concern for colleagues
- a willingness to explore, to learn, and to grow as a teacher of mathematics
- a willingness to share mathematical and pedagogical activities with others

The recipient will receive a plaque of achievement, a \$250 prize, and a one year membership to NHTM. The presentation of the award will be made at the NHTM Spring Conference.

Nomination forms and applications can be found on the NHTM web site at www.nhmathteachers.org or can be obtained by sending a request to the e-mail address below.

Nominations are due by December 15, 2015 and should be sent to (electronic nomination preferred):

Rich Andrusiak
River Valley Community College
1 College Place
Claremont, NH 03743
randrusiak@ccsnh.edu

603.542.7744 x5437

The 2015 Richard C. Evans Distinguished Mathematics Educator Award

In December 2006, Dr. Richard Evans retired from Plymouth State University after serving for more than 40 years as a mathematics educator. The extent of his work in the State of New Hampshire is enormous. It is difficult to find a mathematics teacher in the State who has not been affected by his work. Dick has an unsurpassed passion for mathematics education and has dedicated his life to improving mathematics education for all in the State of New Hampshire.

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The intent of this award is to highlight that passion, creativity and innovation in the teaching of mathematics to all students. The recipient of this award will represent

Dr. Evans philosophy, passion and knowledge of mathematics education. Those with 5 or more years of experience teaching mathematics at any level from Pre-K to 16 may be nominated.

The award recipient will receive \$500, a plaque, a one year membership to NHTM, become an honorary board member for one year, be invited to present at the spring conference, be invited to contribute articles for the quarterly newsletter, Mathesis, and will be encouraged to offer professional development opportunities for mathematics educators with the support of NHTM.

The presentation of the award will be made at the NHTM Spring Conference. Please consider nominating a Pre-K to 16 mathematics educator for the 2014 Richard C. Evans Distinguished Mathematics Educator Award given by the New Hampshire Teachers of Mathematics.

Nomination forms and applications are due by December 15th can be found at www.nhmathteachers.org. Nominations and questions should be sent to:

Amy Gregoire
35 Tonga Drive
Bow, NH 03304

agregoire@bownet.org

Richard H. Balomenos Memorial Service Award

The Richard H. Balomenos Memorial Service Award was established by the Executive Board of NHTM in 1987, to remember and honor a former colleague, educator and friend. Richard Balomenos and his wife, Georgia, died tragically in an automobile accident in December 1986. As both teacher and administrator at the University of New Hampshire for almost 25 years, Richard had a profound influence on mathematics education in the state of New Hampshire. The award is presented annually to a New Hampshire mathematics educator who has shown outstanding or meritorious service or leadership to the mathematics education community on a statewide basis. Past recipients include:

1988 Dr. Fernand J. Prevost	1989 Kay Reardon	1990 Dr. Carol Findell	1991 Laurie Boswell
1992 Dr. Richard Evans	1993 Dr. Joan Ferrini-Mun	1994 Dr. Enid Burrows	1995 Betty M. Erickson
1996 Dr. Arthur V. Johnson II	1997 Dr. Lewis Knight	1998 Dr. Beverly J. Ferrucci	1999 Dr. Karen J. Graham
2000 David G. Kent	2001 Barbara D. Hill	2002 Cecile A. Carlton	2003 Roberta Kieronski
2004 Timothy D. Kurtz	2005 Dr. Judy Curran Buck	2006 Darien Lauten	2007 Dr. William J. Roberts
2008 Brian P. Beaudrie	2009 Albert B. Bennett	2010 Barbara Boschmans	2011 <i>No Award Given</i>
2012 <i>No Award Given</i>	2013 Christine Downing	2014 Rich Andrusiak	2015 Greg Superchi

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If you would like to nominate someone for this award, please send her/his name and a 1-2 page letter describing contributions to the State in the field of mathematics education to:

Cecile Carlton, President, NHTM
3 Wentworth Street
Nashua, NH 03060

All nominations must be received by 1 January 2016.

From the desk of the Membership Chair:

FREE NHTM Membership Offer for 2015-2016 School Year

NHTM continues to offer free one-year NHTM memberships to undergraduate students, preservice teachers, first year teachers, PreK-6 teachers who have not held a NHTM (or NHJEM) membership previously, and experienced teachers in their first year of teaching within New Hampshire. The free one-year membership will also make the member eligible to receive the "reduced rate" at the NHTM Dine & Discuss and Spring Conference (which typically is set just high enough to cover meals) for that membership year. Proof of eligibility for the membership will need to be forwarded to the membership chair, via email or USPS, by the applicant, before exercising any membership benefits. Please send proof of eligibility to Gretchen Scruton at Gretchen.Scruton@gmail.com or mail to: **Gretchen Scruton, NHTM Membership Chair, 195 Ten Rod Road, Rochester, NH 03867.**

Please RENEW & Invite Colleagues to Join NHTM

Now is the time to renew! Our membership is currently at 269 members

with 182 memberships ready to be renewed. Reminders have been emailed to all members as a reminder when it is time to renew your membership. Please renew your membership online or use the application form in this issue. Let NHTM be your state level professional conduit that extends your networking with mathematics colleagues. Enhance your effectiveness, mathematical expertise, and teaching skills. This is the perfect time of year to invite a colleague to join NHTM, especially if you know someone who would qualify for a free one-year membership to NHTM. Contact Gretchen Scruton, Membership Chair if you have any further questions:

Gretchen.Scruton@gmail.com.

NH-JEM Memberships

If you teach at the elementary grade level, the New Hampshire Joint Elementary Membership (NH-JEM), may be for you! A \$50 annual membership fee provides you with most of the membership benefits of four organizations (NHTM, New Hampshire Council of Teachers of English, New Hampshire Council for the Social Studies, and New Hampshire Science Teachers Association). See the website www.nhmathteachers.org for more details. Note that the NH-JEM membership does not include ATMNE benefits.

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School Memberships

NHTM offers all of the many benefits of an individual membership to elementary schools containing grades six and below. An elementary school may join NHTM through a school membership which will allow staff members to attend NHTM sponsored events at the membership rate. All publications will be received by a named contact person.

Individual Membership in NHTM provides you with:

- Mathesis (newsletter) – includes current happenings in math education, Common Core resources, interesting articles and math activities
- Reduced rates at NHTM sponsored events
- Membership in ATMNE (the Association of Teachers of Mathematics in New England) including its two publications, the ATMNE Newsletter and the New England Mathematics Journal, and reduced rates at ATMNE conferences. Note that the ATMNE Newsletter has gone GREEN – be sure your email is up to date in our database.
- In-Service Education Forums on current Math Ed initiatives – Regional PD offerings, networking

What Your Membership Supports:

- Scholarship programs for graduating high school seniors who will pursue mathematics related college studies and for college students enrolled in mathematics education programs

- State Mathematics Contest for high school students and MATHCOUNTS for middle school students in New Hampshire
- Student Recognition program – for students who have demonstrated creativity, interest, or talent in the study of mathematics
- Mathematics Educator Recognition Programs:

- **Richard H. Balomenos Memorial Service Award**

- **Presidential Awardees**

(**PAESMT**) at the elementary and secondary levels

- **Fernand J. Prevost Mathematics Teaching Award** – for outstanding teacher of mathematics in their first, second, or third year of teaching-

Richard C. Evans Distinguished Mathematics Educator Award – for distinguished mathematics teacher/educator who works actively with students and/or teachers for five or more years at any level (PreK-16)

- Recognition of math educators with 25 or more years of service

- Lifetime Honorary Memberships

Please continue to explore our website at www.nhmathteachers.org throughout the school year for updated membership information, mathematical resources, and professional development opportunities.

*Gretchen Scruton
NHTM Membership Chair*

Professional Development Resources

Are you looking for good professional development resources?

Consider the *New England Mathematics Journal!*



**Moving Principles into Actions: Understanding the Challenges
and Promise of Principles to Action – May 2015**

**Classroom Assessment to Achieve the Common Core Standards for
Mathematical Practice – May 2014**

Mathematics Coaching – Implications for Change- May 2013

**Envisioning Effective Implementation of the
Common Core Standards for Mathematics - May 2012**

Exploring the Richness of Geometry via Technology – May 2011

And Many More Issues at: <http://www.atmne.net/>

**For more information or to purchase issues contact:
atmne@keene.edu**

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Please visit www.nhmathteachers.com for more detailed Board information.

Professional Development & Conferences

National

41 st AMATYC Annual Conference	New Orleans, LA	November 19-22, 2015
Joint Mathematics Meetings	Seattle, WA	January 6-9, 2016
T3 Annual Conference	Ft. Lauderdale, FL	February 10-12, 2016
ICTCM 28th Annual Conference	Atlanta, GA	March 10-13, 2016
2016 NCSM Annual Conference	Oakland-San Francisco Bay Area, CA	April 11-13, 2016
2016 NCTM Annual Meeting & Exposition	San Francisco, CA	April 13-16, 2016
MAA MathFest	Columbus, OH	August 3-6, 2016

Regional

NCTM Regional	Atlantic City, NJ	October 21-23, 2015
ATMNE Fall Conference	Portland, ME	October 29-30, 2015
NCTM Regional	Minneapolis, MN	November 11-13, 2015
NCTM Regional	Nashville, TN	November 18-20, 2015
ATMNE Fall Conference	Manchester, NH	October 20-21, 2016

State

Dine & Discuss	Concord, NH	November 9, 2015
NHTM Spring Conference	TBA	March 2016
42 nd Annual State Mathematics Contest	Plymouth, NH	March 2016

Mathesis is the newsletter of the New Hampshire Teachers of Mathematics. It is published four times a year: August, November, February, and May. The mission of the New Hampshire Teachers of Mathematics shall be to provide vision and leadership in improving the teaching and learning of mathematics so that each student is ensured quality mathematics education and each teacher of mathematics is ensured the opportunity to grow professionally.