THE NUMBER LINE

August 2017

www.lamath.org



Table of Contents

President's Message	2
Vice-Presidents' Circle	3-7
2017 LATM Conference	7-11
LATM Nominations and Constitutional Revisions	12
Presidential Award for Excellence	13
LATM Outstanding Teacher Award	14
Opportunities for Teachers	14-20
Opportunities for Students	20
LDE Update	21
Affiliate News	22
NCTM Update	22-25
Executive Council Member Contact List	26
Membership Renewal & Facebook Link	26

Use hyperlinks in the Table of Contents to access specific articles quickly.



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The Number Line ∞ August 2017

PRESIDENT'S MESSAGE

Greetings, Louisiana Mathematics Educators.

With the 2017-18 school year underway, it is my hope that each of you is finding success in motivating your students to learn mathematics. What an exciting job you have!

In this issue of *The Number Line*, you will find information regarding our annual conference. We are getting very excited planning an event that will meet your needs. We hope you are making plans to meet us at the Crowne Plaza Executive Center in Baton Rouge for our 2017 LATM Conference on Nov. 6-8. In anticipation for the usual lunch dilemma, we highly recommend that you take advantage of the Grab and Go Lunch option. These lunches are sold on a pre-paid basis by October 13, so keep this in mind when you register for the conference. Extended sessions, which are 3-hour or 6-hour workshops, will be held on November 6. These sessions require an additional registration fee and must be reserved by the Early-Bird date. We have a great lineup for you, and I want to encourage you to consider participating in one or two of them.

Our Outstanding Math Teacher Award winners will be honored at the LATM Awards Ceremony and General Membership Meeting on November 7 at 4:15 PM. Please plan to join us as we honor these great mathematics teachers.

We are always in need of volunteers at the conference. One of the easiest ways to volunteer is by serving as a session presider. There is a need for Presiders for each regular session of the conference; these people help to protect the integrity of the CLU program. This is a great opportunity to support your organization. Since sessions fill up quickly, presiders have the advantage of being guaranteed a seat at the session in which that person is presiding. If you are willing to serve as a presider, please indicate this on the presider line on the registration form. Presiders will be contacted in October for assignments.

Monday, September 11 is also the deadline for submission to Quality Science & Mathematics Grant Program (QSM). This \$750 grant application is simple to complete and the funds can greatly enhance any mathematics classroom. More information can be found in the Teacher Opportunities section of this newsletter.

Take care, and I look forward to seeing you all at the conference in November.

Sincerely,



Iricia Miller

Tricia Miller President, Louisiana Association of Teachers of Mathematics

The Number Line ∞ August 2017

VICE-PRESIDENTS' CIRCLE

The Importance of Assessment in the Classroom

Submitted by: Serena White, Vice-President for Elementary Schools Written by: Lissa Dumas, Vice-Principal at Sallie Humble Elementary

One of the greatest predictors of student achievement is the use of assessments in the classroom. The teacher could have the best lesson plans that cover the standards beautifully, but if the assessment piece is missing, the learning may be lost. Our state has transitioned to more meaningful assessments that measure a student's deeper understanding of content. An example of this is in the LEAP 2025 math assessment, which includes different types of items:

- Type I items include multiple choice, multiple select, fill in the blank, and technology enhanced items. These items are designed to assess conceptual understanding, fluency and application of the major, additional and supporting content of the grade. Type I items can also involve any, and all, of the math practices.
- Type II items include tasks that require students to explain or justify their work and are multi-step. These items are designed to assess student reasoning ability of selected major content of the current grade as well as related knowledge and skills from previous grade(s) in applied contexts.
- Type III items are tasks that involve real-world modeling/application and are also multistep.

The new state assessment measures whether a student truly grasps the concept(s) at a deep level of understanding. The current assessment measures critical thinking and problem solving in a multi-step format. The assessment type items involve mathematical practices such as reasoning, perseverance, precision, and strategy. Teachers are required to transition with the changing testing formats to ensure their students are successful. The goal is to help all students become college and career ready.

As an administrator, I can predict, to a certain degree, a student's academic success based on the classroom assessments or teacher-made assessments. If teachers include Type 2 assessment items that require students to explain or justify their work, students will be more prepared for the LEAP 2025 and will be more successful in college and career readiness. For the same reason, students should also have exposure to Type 3 items that involve multi-step, real-world modeling and application. In our district, Monroe City Schools, we utilize a tool called "Analyzing Math Assessments." This tool is used along with the Louisiana Department of Education's "Rigor Document." The tool is a checklist when analyzing the effectiveness of a teacher-made assessment. If the assessments have all the required areas, then the teacher-made test is acceptable in regard to being aligned to the LEAP 2025 test. Teachers should keep in mind the deep level of understanding that is required for all students to become college and career ready.

Changes to the Louisiana Student Standards for Mathematics in Geometry

Lori Fanning Vice-President for High Schools

Probability Standards are now part of the High School Geometry course. These standards were previously a part of the Algebra 2 course.

There are several formative assessment lessons that are Probability Lessons in the *Mathematics Assessment Project*: **Representing Conditional Probabilities 1 and Representing Conditional Probabilities 2, and Medical Testing.** These tasks not only include the content standards needed for these standards, but also do a great job of incorporating all of the Mathematical Practice Standards. Additionally, some of the tasks are great for Career and Readiness Standards.

The following standards are new to Geometry:

Understand independence and conditional probability and use them to interpret data.

1. Describe events as subsets of a sample space using categories of the outcomes as unions ("or"), intersections ("and"), or complements (1- P(event)) of other events.



Students determine the **sample space** for a chance experiment.

Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. 3. Understand the conditional probability of A given B as P (A and B)/P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as probability B.

Additionally, tasks that lend themselves to addressing Standard #4 can be located at *Illustrative Mathematics* <u>https://www.illustrativemathematics.org/</u>. Tasks on this site give teacher commentary and feedback to improve teacher knowledge of these standards and their applications.

- 4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.
- 5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

- 6. Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.
- 7. Apply the Addition Rule, P (A or B) = P(A) + P(B) P (A and B), and interpret the answer in terms of the model.

Students will need to develop the appropriate vocabulary to operationalize the skills needed to solve these problems. Questions to ponder:

How do we get students to engage with new vocabulary? How can we assess students' knowledge of mathematical vocabulary?

- Math Word Wall (even in high school)
- Puzzles (vocabulary)
- Games
- Graphic Organizers (Probability Formula Log)

Geometric Probability = $\frac{\text{Desired Area}}{\text{Total Area}}$

Teaching the Algorithm Part 3: Fraction Division

David Thomas Vice-President for Colleges

This is the final article in a three part series on teaching fraction division. Fraction division has a very easy short-cut algorithm, namely invert and multiply. Unfortunately, this short cut has nothing to do with the conceptual idea of what it means to divide fractions. I discussed this failing in part one of this series. So each of the examples discussed in this article includes both a visual model of how the division can be performed without using invert and multiply as well as a story problem associated with the given division expression.

The division of fractions by fractions is introduced in the sixth grade and is treated the same way as it was in the fifth grade when division problems only dealt with whole numbers and unit fractions. The fraction standard falls under the Cluster Heading, "Apply and extend previous understandings of multiplication and division to divide fractions by fractions." The standard itself reads like the fifth grade one quoted in the past article, "Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem." We will consider three example

problems. The first is $\frac{2}{3} \div \frac{1}{6}$. The quotient for this problem tells us exactly how many one-sixths there are in twothirds. A story context for the problem might go as follows: Adilynn is making brownies for her friends. Each batch of brownies requires one-sixth of a cup of sugar. If she has two-thirds of a cup of sugar how many batches of brownies can she make? One could use the subtractive form of division to find out how many things fraction pieces of size one-sixth there are in the fraction two-thirds. A visual model of the solution is pictured in figure 1. As you can

see from the visual model, there are four fraction strips of size one-sixth in the fraction two thirds. So if Adilynn has two-thirds of a cup of sugar she can make 4 batches of brownies.

The final two examples show the results of fraction division when the value of the quotient is not an integer. We first look at the example $\frac{1}{6} \div \frac{1}{2}$. Since one-half is bigger than one-sixth there are no pieces of size one-half in something of size one-sixth making the quotient zero. A story context for the expression could be: Poppa is making pancakes for his grandkids. The recipe calls for onehalf a cup of pancake mix. Unfortunately, there is only one-sixth of a cup of mix left in the box. What fraction of a recipe can Poppa make? So our fractional part has a numerator of $\frac{1}{6}$ and a

denominator of $\frac{1}{2}$. This time our question is: one sixth is what fractional part of one-half. A visual model is pictured in figure

2. Since there are three fraction pieces of size one-sixth in a fraction piece of size one-half, the pink piece in figure 2,



Figure 2



Figure 1

we see that $\frac{1}{6} \div \frac{1}{2} = \frac{1}{3}$, i.e. one-sixth is one-third of one-half. So Poppa can make one-third of the pancake recipe.

The final problem is $\frac{3}{4} \div \frac{1}{3}$. Again, the problem asks the question how many pieces of size one-third are there in something of the size three-fourths. A corresponding word problem might be: Nathan has three-fourths of a



Figure 3

whole pizza. Because he is a growing boy who really likes pizza, he normally cuts his pizza into slices of size one-third. How many slices of size one-third, of the original whole pizza, are there in the three fourths of the pizza that is left? A visual model is pictured below in figure 3. Notice



Figure 4

two with a remainder of $\frac{1}{12}$. Using the

method illustrated in the previous paragraph this remainder reduces to one-fourth. Onetwelfth is one-fourth of one-third. See figure

amount remaining is one-twelfth. Thus, our quotient is

that the quotient is two with a small amount left over. The visual model labeled figure 4 shows that the small



Figure 5

5 below. So when Nathan divides his left over pizza into slices of size one-third (of the original pizza), he has two slices and one-fourth of another slice.



Conference Registration is Now Open! SAVE \$50 - Take Advantage of Registration Discounts

Be an Early Bird! Postmark your <u>registration (http://lamath.org/conference2017</u>) no later than September 29, 2017, and save \$50 off the full registration rate. With the conference registration PayPal option, it is now easier to get your Early Bird payment submitted! September 29 is also the deadline for registering if you want to attend an <u>Extended Session</u>.

October 13, 2017 is the last postmark date for the Pre-Registration discount of **\$25 off the full registration rate** and for the <u>Grab and Go lunches</u>.

Remember, anything postmarked on or after October 14, 2017, will be charged the Full Registration rate. Any payment made after October 27 must be made on site.

2017 Conference Registration Rates		
(Registration is not complete until payment is received) The information below provides registration costs based on the date that the form is postmarked. A payments made after October 27, 2017 must be made on site.		
Full Conference Early-Bird Registration (Save \$50 when compared to Full Conference Registration. Must be postmarked no later than September 29, 2017.)	\$75.00	
Full Conference Pre-Registration (Save \$25 when compared to Full Conference Registration. Must have postmark from September 30 to October 13, 2017.)	\$100.00	
Full Conference Registration (Postmarked from October 14, 2017. Any payment made after October 27, 2017 must be made on site or online by credit card.)	\$125.00	
Full-time Non-teaching Undergraduate Student Full Conference Pre-Registration (Must have postmark no later than October 13, 2017.)	\$25.00	
Full-time Non-teaching Undergraduate Student Full Conference Registration (Postmarked from October 14, 2017. Any payment made after October 27, 2017 must be made on site or online by credit card.)	\$30.00	
Wednesday Only Pre-Registration (Must have postmark no later than October 13, 2017.)	\$30.00	
Wednesday Only Registration (Postmarked from October 14, 2017. Any payment made after October 27, 2017 must be made on site or online by credit card.)	\$50.00	
Extended Session – AM Session* (Full Conference Early-Bird Registration no later than September 29, 2017 required.)	\$15.00	
Extended Session – PM Session* (Full Conference Early-Bird Registration no later than September 29, 2017 required.)	\$15.00	
Extended Session – Full Day* (Full Conference Early-Bird Registration no later than September 29, 2017 required.)	\$30.00	
Lunch Option – Options shown on online registration form and must be paid no later than October 13 to guarantee availability.	\$13.00	

*Registrations for Extended Sessions must be completed as part of the online registration process for the conference so that the invoice and payment by check (or the invoice for payment made with a credit card) are postmarked no later thanFriday, September 29, 2017. Extended Session participants must register for the Full Conference.

Special assistance requests must be made by October 16, 2017 to

Trisha Fos tfos1@lsu.edu

Grab and Go Lunch Options

Teachers' time is valuable. With that in mind, we have arranged a **Grab and Go Box Lunch** for you to order when you <u>register!</u> Sessions are continuous and this service allows you to pick up



your lunch and take it with you to your room. What a great way to avoid Baton Rouge traffic and not have to worry about finding a parking spot when you return. Plus, you will get a full day of professional development!

Options include:

- 1. Turkey and Swiss Cheese on Kaiser Roll
- 2. Chicken Caesar Wrap
- 3. Grilled Veggie Wrap
- 4. Chef Salad

Options 1, 2, and 3 are served with chips, brownie, and iced tea. Option 4 is served with brownie and iced tea. The cost is \$13.00.

To ensure availability, payment must be made by October 13, 2017.

Conference Hotel Reservations



Standard Rooms-Single and Double are both \$94.00

Rates quoted are per night, netted non-commissionable, and are subject to a 14% tax. Group is surcharge exempt.

Individual Reservations may also be made through the Crowne Plaza Baton Rouge's web site at <u>www.crowneplaza.com/execcenterbtr</u> or by calling the hotel directly at 1-800-678-4065 and use promotion code: **ATM**

Reservations must be made prior to October 13 to guarantee rates.

Extended Sessions

Extended sessions require pre-registration, and it is critical to planning that you complete the registration form <u>lamath.org/conference2017/registration/</u>. A confirmation email will be sent two weeks prior to conference. Please check your email often. Also, check spam mail as some systems do not recognize the address of the sender as a valid email address or the system administrators may have placed a block on many senders. If you have not received confirmation email by October 27, 2017, contact Maribeth Holzer at <u>holzer@opsb.net</u>.

There is a \$15 charge for each session; a \$30 charge for the all-day session. Extended Session participants must also register for the 2017 LATM Conference by the Early Bird deadline of September 29, 2017. All sessions will be held at the Baton Rouge Crowne Plaza. For more information and a complete listing of the extended sessions, check the Pre-Conference Newsletter at http://lamath.org/conference2017/2017preconferencemailout.pdf.

LATM Travel Grants

The Louisiana Association of Teachers of Mathematics is awarding up to \$3000 in travel grants with each grant awarded worth up to \$300 to offset the expense of attending its 2017 LATM Conference in Baton Rouge, November 6-8, 2017. The money can be used to cover conference registration, extended session registration, lodging, meals, parking, and/or travel. Grant applicants will be notified of their status at least one month prior to the conference. The money will be awarded at the conclusion of the conference. **This year, two types of grants are offered: attendees and presenters.** The LATM Travel Grant Coordinator will select a committee of math leaders from throughout the state to score the applications. Order of receipt or geographic location will not be considered in the awarding of the travel grants. Applicants must be LATM members on or before August 1, 2017. Entry packets that do not meet the requirements or provide false information will be disqualified.

For grant application: <u>http://www.lamath.org/LATM_Travel_Grants2017.htm</u>

Applications must be postmarked no later than September 8, 2017. Send the application packet to: Tricia Miller, P.O. Box 2645, Sulphur, LA 70664.

Questions may be emailed to Tricia at tricia.miller@cpsb.org.

Louisiana Council of Supervisors of Mathematics (LCSM)

Are you responsible for math instruction and teachers? Are you a mathematics specialist, coordinator, or coach? Are you a Teacher Leader Advisor for mathematics? If so please join us for the fall meeting of the Louisiana Council of Supervisors of Mathematics (LCSM). LCSM is the state affiliate of the National Council of Supervisors of Mathematics.

We will meet Monday, November 6th from 1 - 3:30 pm. A program of mathematics leadership and election of new officers with light refreshments is planned. Information will be sent to those listed in the most recent LCSM database. Anyone who wishes to be added to the list is asked to send an email to Sabrina Smith <u>sabrina.smith@jppss.k12.la.us</u>.

Conference Exhibitors to Date

LATM would like to thank the following exhibitors and conference sponsors for their participation and sponsorship of the 2017 LATM Conference in November 2017.

AEOP (NSTA)
CPM Educational Program
Everfi
Great Minds LLC - Eureka Math
Houghton Mifflin Harcourt
Magee Enterprises, Inc
PEARSON
Smith Curriculum and Consulting

The Outstanding Mastery Guides

Several more conference exhibitors will join us in Baton Rouge We look forward to seeing them and you in November.

For information on exhibiting contact Torri Palms-Moore at tpalms4212@aol.com

LATM Nominations and Constitutional Revisions

Proposed Slate of Officers

Proposed Slate of Officers The Nominations Committee presents to the membership the following slate of officers, approved unanimously by the LATM Executive Board: **President-elect: Trisha Fos; Secretary: Amanda Perry;** and **Vice President of Secondary Schools: Christen Timmins.** If you have additional nominations to the Executive Board, please email them to Tricia Miller tricia.miller@cpsb.org no later than **Sunday, October 8, 2017**, so that the ballot can be prepared for the annual business meeting that will be held on Tuesday, November 7 at 4:15 at the 2017 Math Conference in Baton Rouge. All nominees should have agreed to serve, attend all Executive Council meetings, and be a current member of LATM.

In June 2017, the LATM Executive Council re-appointed **Beth Smith** as **Membership Chairman** and **Lon Smith** as **Website Page Editor**. Thank you Beth and Lon for your continued service.

Proposed Constitutional Ammendments

Proposed Amendments to the LATM Constitution and By-Laws The following proposed amendments and changes to the LATM Constitution and By-Laws have been made by the LATM Board.

Constitution, Article IV: Executive Council Officers, Section 6

Constitution, Article VI: Additional Executive Council Positions, Section 2

Bylaws, Article 1: Duties of the Executive Council Members and Positions, Section 15

Bylaws, Article 1: Duties of the Executive Council Members and Positions, Section 8

And section number changes for the current: **Bylaws, Article 1: Duties of the Executive Council Members and Positions, Sections 12, 13, 14, and 15**.

Please find and read the proposed changes at <u>http://lamath.org/constitutionalchanges.htm</u>. If you have questions about any of these proposed changes, please contact Tricia Miller. Any suggested changes/revisions with detailed justification **must be submitted in writing** (email) to Tricia at <u>tricia.miller@cpsb.org</u> no later than **Sunday, October 8, 2017**. The membership will consider these proposed changes at the annual LATM membership meeting at the 2017 LATM Conference in Baton Rouge.

Presidential Award for Excellence



While we continue to wait for a White House proclamation for the 2016 Presidential Awardees for Excellence in Mathematics and Science Teaching (PAEMST) our 2017 state efforts were outstanding.

Through the support of local superintendents, building principals, district staff, and teaching colleagues Louisiana had an outstanding cohort of nominees and one of the highest submission rates in the country. As a result, our state selection panel had a difficult task of determining the 2017 State Finalists.

Congratulations to the 2017 Louisiana State Finalists for the Presidential Award for Excellence in Mathematics Teaching:

Mandy Boudwin, Lutcher High School, St James Parish Schools Jessica Hunter, Sterlington High School, Ouachita Parish Schools Elizabeth Smith, Neville High School, Monroe City Schools

The State Finalists, their principals and superintendents will be recognized during a luncheon at the Governor's Mansion on September 27, 2017. Additionally, they will be honored during the LATM Conference in November at the annual awards ceremony.

The 2017-18 academic year will be an elementary cycle for the Presidential Award program. Teachers of math, science, computer and engineering courses in grades K-6 are eligible in 2018. The nomination process will open after the beginning of the school year. Watch for announcements on the LATM website and FB page.

For additional information on the Louisiana PAEMST program contact Jean May-Brett at <u>jam05@bellsouth.net</u> or visit <u>https://www.paemst.org/home/view</u>

LATM Outstanding Teacher Awards

The Executive Council of the Louisiana Association of Mathematics Teachers are proud to announce the following Outstanding Teacher Awards. This year awards were made in three categories: Elementary, Secondary, and New Teacher. As is often the case, the selection was made difficult by the strong set of candidates in each category. Congratulations to the following winners.

The winner for the Elementary Teacher category is **Rebecca Kliebert**. Rebecca teaches fourth grade at Fairfield Elementary Magnet in Caddo Parish. She has been teaching for ten years.

The winner for the Secondary Teacher category is **Ashley Holliday**. Ashley teaches eighth grade Algebra at Benton Middle School in Bossier Parish. She has been teaching for four years.

The winner for the New Teacher category is **Shelia Walsh**. Shelia teaches tenth and eleventh grade at Academy of Our Lady in Jefferson Parish. She has been teaching for three years.

Return to Table of Contents

Opportunities for Teachers

Quality Science & Mathematics Grant



Looking for a way to purchase classroom math materials? Are you in need of funding to support equipment for your great ideas? Wish you could implement some ideas seen during last year's conferences or professional development training? The answer might be waiting for you through the Quality Science and Math Grant Program.

The Quality Science & Mathematics Grant Program (QSM) was established by R.S. 17:371-1 of the Louisiana Legislature in the summer of 1992 for the purpose of providing materials and equipment to MATHEMATICS and SCIENCE PUBLIC SCHOOL TEACHERS. The QSM program administered by the Gordon A. Cain Center for STEM Literacy at LSU (<u>http://www.lsu.edu/caincenter/</u>) will award state-funded grants to eligible classroom teachers for the 2017-18 school year. Grants for approved materials and equipment will be awarded on a competitive basis to individual classroom teachers to use in providing standards-based instruction to help meet state accountability goals. Applicants must show that their proposals will enhance the quality of instruction for regular education students who are enrolled in mathematics or science classes.

Proposal must be submitted no later than Monday, September 11, 2017. NOTE: Only full-time classroom teachers assigned to teach mathematics or science in the K-12 regular education program in public schools are eligible to submit proposals.

Dr. Shannon Lafont recently provided a webinar on preparing QSM grant proposals. The webinar is available on YouTube. <u>https://www.youtube.com/watch?v=Rpq-o7TflUs</u>

Note there is a spot with some echo noise a few minutes in that ends after a few minutes. There is also the sound of some typing periodically in the background. We apologize.

If you have questions, you may contact <u>qualityscienceandmath@gmail.com</u>.

Click **<u>here</u>** to submit a QSM proposal submission online.

The Essential Mathematical Skill of Problem Solving

Dave Thomas, LATM Vice President of Colleges

Many regard George Polya, a Hungarian mathematician, as the father of modern problem solving. Some people think that the ability to do mathematics, especially problem solving, is an ability with which you are born. They think you can't really learn problem solving. Either you have the "math gene" or you don't. Polya saw problem solving as a skill you could teach. He developed a four-step process for solving problems:



- 2. Devise a plan
- 3. Carry out the plan
- 4. Look back

He developed a list of 21 strategies to use in problem solving and a set of clues to help students know when to use which strategy. Although that will not be the focus of this article, you can find a list of the 21 strategies and their clues in "Mathematics for Elementary Teachers, A Contemporary Approach" by Gary Musser, Blake Peterson and William Burger.

Following are Polya's "Ten Commandments for Teachers":

- 1. Be interested in your subject.
- 2. Know your subject.
- 3. Try to read the faces of your students; try to see their expectations and difficulties; put yourself in their place.
- 4. Realize that the best way to learn anything is to discover it by yourself.
- 5. Give your students not only information, but also know-how, mental attitudes, the habit of methodical work.

The Number Line ∞ August 2017

lity to do ch you are r you have a skill you olems:

- 6. Let them learn guessing.
- 7. Let them learn proving.
- 8. Look out for such features of the problem at hand as may be useful in solving the problems to come- try to disclose the general pattern that lies behind the present concrete situation.
- 9. Do not give away your whole secret at once let the students guess before you tell it let them find out by themselves as much as feasible.
- 10.Suggest; do not force information down their throats.

Problem Solving Contest



In honor of the middle P in the P³ theme of this fall's LATM meeting November 6-8 at the Crowne Plaza Executive Center in Baton Rouge the Executive Council of the LATM has authorized a problem solving competition. I hope you find each of these problems solvable, but I also hope you find that they require thought and sometimes perseverance.

Each correct solution with a suitable amount of justification will serve as an entry for a drawing, which will award up to 15 LATM t-shirts. No teacher may win more than one t-shirt. The subject for these problems is fractions.

Remember you must show your work. The deadline for entries is **September 29**.

You may mail solutions to **David Thomas, Problem Solving Contest, 10013 Beaver Creek, Shreveport, LA 71106 or email them to** <u>davidthomas1636@gmail.com</u>.

Include your name, t-shirt size, school and the grade that you teach as well as your email address as part of your entry.

- A number of employees of a company enrolled in a fitness program on January 2. By March 2, ⁴/₅ of them were still participating, of those ⁵/₆ of them were still participating by May 2 and of those, ⁹/₁₀ were still participating on July 2. Determine the number of employees who originally enrolled in the program if 36 of the original participants were still active on July 2.
- 2. Each morning Tammy walks to school. At one-third of the way, she passes a grocery store, and halfway to school she passes a bicycle shop. At the grocery store, her watch says 7:50 and at the bicycle shop, it says 7:55. When does Tammy reach her school?
- 3. A softball team had three pitchers, Gale, Sandy, and Ruth. Gale started $\frac{3}{8}$ of the games played in one season. Sandy started one more game than Gale, and Ruth started in half as many games as Sandy. In how many of the season's games did each pitcher start?
- 4. One of your students asks if you can illustrate what $8 \div \frac{3}{4}$ means. What would you draw? Notice the question asks what you would draw. I am not interested in the value, but the visual evidence of the process. You may find my article in this issue on fraction division helpful.

Louisiana's Math Science Partnerships

The Louisiana Department of Education continues to wait for a response from the US Department of Education on guidance for awarding the final MSP dollars. Nonetheless, there was plenty of mathematics training throughout the summer. For some teachers around the state there were final days to bring three-year projects to an end. While for teachers in some other districts, their summer MSP experience was the beginning of their last year. For these math educators the summer institute will be paired with 2017-18 academic year follow-up sessions.

Bridget Soumeillan shared an update from Lafayette Parish on the summer sessions for mathematics teachers in the district. They were able to use remaining MSP funds to host a five-day summer "refresher" institute. Teachers from Lafayette and Iberia Parishes public and private

schools participated. The institute focused on Expression and Equations and Ratios and Proportions. This year's efforts included grade level presentations of Illustrative tasks with careful Mathematics attention to the Coherence Map http://achievethecore.org/coherencemap/ on Achieve the Core website. Teachers were encouraged to showcase the variety of approaches or solution methods to any problem/task. In addition, the



Lafayette school board awarded Math Specialist, Jamie Hebert, funds to support a Lafayette Parish only Middle School Math Summer Institute. The 5-day summer institute was structured after the past MSP projects with emphasis on Algebra I topics. The district hopes to increase the number of students taking Algebra I in middle school, by exposing mathematics teachers to more experience



with the LSSM Algebra I standards.

The math instructors from LSU's Cain Center were quite the road show as they traveled the state working with teachers in several districts participating in five different MSP projects. The collective foci were fostering the mathematical practices, teaching for conceptual understanding and developing a growth mindset as teachers and





learners. Robyn Carlin worked with teachers in the Washington Parish Grades 3-5 project along with Johnette Roberts. Johnette and Charles James provided training to Jefferson Parish's MSP for grades 3 and 4 and also

facilitated several days for the teachers in the Avoyelles/Rapides 3-5 grade math MSP. Robyn and Charles continued their work with the Zachary Community Schools 6-8 grade project, which included teachers from several different school systems. For EBR's Grade 5 project, instruction was provided by Natasha Briscoe, Louisa Hodges, Rose Kendrick, Cherie Neal, LaTonya Snell, and



Ursula Square. For more about the EBR MSPs check out their Facebook Pages. The Number Line ∞ August 2017

As the school year begins, we hope the LDOE will be able to share information on how the remaining MSP funds will be awarded. The monies are good until September 2018 and the department has asked about an extension.

LSU-S Math Circle Meeting

Math Circle, hosted monthly by Dr. Judith Covington of LSUS, is a cost free evening with dinner and professional development for educators of different grade levels and teaching experience.

The meetings in Bronson Hall begin at 5:00 PM with a catered meal followed by the mathematics portion of the meeting. Sessions each month focus on a different topic. The meetings are designed to be hands-on and allow the participants an experience of the joy of doing math. The first 2017-18 meeting is tentatively scheduled for September 12th. If you have any questions, please contact Judith Covington at judith.covington@lsus.edu

Math Design Collaborative Update

Our MDC report comes from Ouachita Parish and Donna Patten. The summer was a busy and very productive time for Donna and several of the teachers. They presented four sessions during the 2017 SREB High Schools That Work Conference.

Presenters: Lauren Howe, OPSB Mathematics Teacher, Calhoun Middle School and Kayla Barrientos, OPSB Mathematics Teacher, West Ouachita High School Session Title: Mathematics Design Collaborative: Not Just for the Gifted



Presenter: Jessica Hunter, OSPB Mathematics Teacher, Sterlington High School

Session Title: Integrating Technology in MDC Formative Assessment Lessons and Tasks

Presenters: Donna Patten, OSPB Instructional Coordinator, Middle/High Mathematics with SREB Mathematics Consultant Gail Snider and OPSB Instructional Coordinator, ELA, Dr. Tammy Whitlock Session Title: Corralling Knowledge with the Colleague Collaboration Circle





The Number Line ∞ August 2017



Presenters: Angela Mathews, OPSB Mathematics Teacher, Richwood Middle School and Erica Faust, OPSB Mathematics Teacher, Riser Middle School Session Title: Done with the FAL: Now What?

As academic year 2017-18 opens, the District already has their SREB MDC consultant Gail Snider scheduled for Cohort Training and work with teachers in September and November. Donna shared "SREB's training is superb and I

always enjoy an opportunity to promote their mathematics PD.

Please share your MDC update by contacting Jean May-Brett jam05@bellsouth.net.

Research Council on Mathematics Learning (RCML)



RCML is a national organization founded over 40 years ago to "disseminate research efforts designed to understand and/or influence factors that affect mathematics learning." RCML prides itself on being 'graduate-student friendly' and accepts proposals related to planned, ongoing, and completed research projects.

Authors of accepted proposals can apply to have their paper included in RCML's official journal, Investigations in Mathematics Learning, a peer-reviewed journal published four times a year by Taylor and Francis.

February 22-24, 2018, Louisiana State University will host the Research Council on Mathematics Learning (RCML)'s annual conference.

Having a national conference within driving distance is an excellent opportunity for us and our graduate students to meet in a collegial atmosphere with researchers from across the country while sustaining only moderate travel costs. That RCML accepts proposals related to planned, as well as ongoing/completed, research provides a unique opportunity for novice and seasoned researchers alike to get that all-important formative feedback on one's evolving research agenda.

RCML is currently accepting proposals, with the deadline for submitting proposals set for September 9. Visit their website (<u>http://www.rcml-math.org/upcoming-conference</u>) or email David Kirshner, Conference Chair, at <u>dkirsh@lsu.edu</u> for more information.

Like us on Facebook

https://www.facebook.com/Lamathteachers/

Social media has become a preferred means of communication in this tech-savvy digital age. If you have not liked LATM's Facebook page, you should do so now! Teacher opportunities, upcoming LATM events, mathematical articles, educational research, and much more are posted daily on the LATM Facebook page. LATM has much to offer and share with not only math teachers, but with parents,



students, and the general public. When you like an LATM post, go a step further and share the post. By sharing a post, the post is distributed to a new group of people who can also share the post. You can even invite your friends to like the LATM Facebook page and become followers. Help us reach more people, so we can help more people!

Return to Table of Contents

OPPORTUNITIES FOR STUDENTS

Carol Meyer Memorial Scholarship

The Louisiana Association of Teachers of Mathematics is pleased to honor the memory of Carol Meyer, a dynamic elementary school math teacher who died unexpectedly at an early age. LATM awards two \$500 scholarships each year to college upperclassmen who have demonstrated a commitment to completing their education in Mathematics, Mathematics Education, or Elementary Education. In addition to the scholarship, awardees will also receive complimentary LATM student memberships.

Congratulations to the recipients of the 2017 Carol Meyer Scholarship:

George Cazenavette of Louisiana Tech University **Allison Free** of Louisiana Tech University

Applications for the 2018 Carol Meyer Scholarships will be available in early 2018 at http://lamath.org/Awards.htm.

Louisiana Department of Education (LDE) UPDATE

Kyle Falting LDE Representative

Hello from the LDE math team! We wanted to thank all those who were able to attend this year's Teacher Leader Summit and to all who presented. The sessions this year were some of the best we have had to date, providing teachers with focused training on the new LEAP 360, Eureka Remediation Tools, various curricula, and more. Teachers left the Summit feeling not only inspired, but well equipped to tackle the first weeks of the new school year. If you were unable to attend and/or just want to view the resources from the sessions, you can access all materials here. We hope to see even more of you at next year's Summit.

In addition, we'd like to let you know about some new resources that have recently launched on the K-12 Math Planning Page. <u>https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning</u>

- As mentioned above, we have released a set of *Eureka Remediation Tools* that are built at the topic-level and provide teachers with a diagnostic assessment on the standards foundational to the grade-level topic, as well as, detailed guidance on what to look for in student work and what materials to use to respond to student misconceptions/gaps. These new tools will be the focus of several trainings and webinars during the first few months of the new school year.
- We have updated all of the *Louisiana Guides to Implementing Eureka* to now include a sample yearlong calendar as well as some reorganizing within the document. Please be sure you have the latest version.
- After receiving feedback from national experts, we have refined the Louisiana Guide to Rigor to better illustrate the intent of each standard from Kindergarten through Algebra II. Again, please be sure you are using the latest version when studying the standards and building/analyzing assessments.
- We are in the process of editing and enhancing all of the Companion Documents, again to
 ensure better alignment to the intent of the standards and to funnel more information into
 a single place. The new Companion Documents will come out on a rolling basis over the
 next few months and will now include the component(s) of rigor for each standard in
 addition to the focus of each standard. We hope you find all of these resources helpful in
 your classroom, and, as always, please send us any feedback you have.

AFFILIATE NEWS

Baton Rouge Area Council of Teachers of Mathematics (BRACTM)

Anyone interested in being a part of the Executive Board aiding in professional development for the school year please contact Trisha Fos at <u>bractm@gmail.com</u> We are hoping to include some fresh, energetic faces to our team!

North East Louisiana Association of Teachers of Mathematics (NELATM)

No report submitted. Contact <u>holzer@opsb.net</u> for information.

Northwest Louisiana Mathematics Association (NLMA)

No report submitted. Contact <u>tlpalms-moore@caddoschools.org</u> for information.

SouthEast Area Teachers of Mathematics (SEATM)

We are re-organizing. If you would like to volunteer to help, contact Maryanne Smith (<u>smith70471@yahoo.com</u>) or Stacey Magee (<u>stacey.magee@stpsb.org</u>).

South West Louisiana Teachers of Mathematics (SWLTM)

No report submitted. Contact <u>katherine.gertz@cpsb.org</u> for information.

Return to Table of Contents

NCTM UPDATE

Maryanne Smith Past-President/ NCTM Representative

The Louisiana Association of Teachers of Mathematics (LATM) is proud to be a Partner Affiliate of the National Council of Teachers of Mathematics (NCTM). We also collaborate with five Associate Affiliates across the state to ensure that we work together to build effective relationships within our respective communities. LATM believes, as does NCTM, that strong, open relationships with teachers, leaders from schools, parents, legislators, businesses, media, and others are vital to the process of improving mathematics education in our state.

The Number Line ∞ August 2017

As an individual how do you work to improve mathematics instruction in Louisiana? Are you looking for support in your efforts? Look no further than NCTM. The National Council of Teachers of Mathematics overs rich resources to assist teachers. Our current President, Matt Larsen has contributed numerous resources to the NCTM website. Every two months, he offers webinars for members. On a monthly basis, he send letters to NCTM members to offer fabulous educational/instructional information. In July 2017, his letter was entitled "*What Constitutes an Effective Collaborative Team?*" He spoke from both personal experiences and informative research-based sources. The most important thing I gained from the article was the importance of teachers and schools not working in isolation. (That's why I should see each of you in November at the LATM Conference in Baton Rouge.) Mr. Larsen's article discusses steps to improve instruction *before, during,* and *after* each unit of instruction. Many items on the websites are free to all. A paid membership however opens a whole new level of resources.

As a mathematics educator or researcher, your passion is ensuring that all students receive the highest quality math education possible. Membership in NCTM means access to the resources you need to turn your passion into measurable student learning outcomes. Check nctm.org for information on full individual membership, e-memberships, and Emeritus membership

The National Council of Teachers of Mathematics (NCTM) announced three new Mathematics Education Trust (MET) grants for mathematics teachers and teacher leaders. Each grant addresses MET's mission to improve mathematics teaching and learning.

The MET was established in 1976 to channel the generosity of contributors through the creation and funding of grants, awards, honors, and other projects that support the improvement of mathematics teaching and learning. MET provides funds to support in-service and pre-service teachers to improve their classroom practices and increase their mathematical knowledge. Additionally, each year the MET is responsible for selecting the Lifetime Achievement Award recipients, leaders in mathematics education.

The new grants include:

Designing Innovative Lessons and Activities for Mathematics Teaching (K-8)

This grant is for a team of elementary teachers and/or mathematics coaches representing two or more schools, in collaboration with college/two-year college or university mathematical education faculty. The team will organize and mentor the development of a series of activities that can be used on a regular basis (weekly or monthly) to guide K-8 students to explore, create, and connect powerful mathematics thinking to their world. Two grants of \$5,000 will be awarded, each are supported by the Mary P. Dolciani Halloran Foundation and NCTM. **Deadline: November 3, 2017**

Teacher-Leader Professional Learning Grant (Pre-K-12)

This grant provides professional learning assistance for mathematics teachers and mathematics teacher-leaders. It must focus on one of the National Council of Supervisors of Mathematics' (NCSM) signature initiatives: formative assessment, digital learning, or access-The Number Line ∞ August 2017 23

equity-empowerment. The grant of up to \$4,000 is supported by NCSM and NCTM and awarded to a school. **Deadline: November 6, 2017.**

Fostering Support of Mathematics Learning in Multilingual Classrooms (Pre-K-12)

This grant provides financial assistance to Pre-K-12 schools for in-service training to increase understanding and expertise in fostering support of multi-language development when teaching mathematics. The grant of up to \$4,000 is supported by TODOS - Mathematics for All and NCTM and is awarded to a school. **Deadline: November 30, 2017.**

For more information about the MET and other opportunities visit, <u>www.nctm.org/met/</u>.

Regional Conferences	Annual Meetings
2017	2018
Orlando · Oct. 18–20	Washington, D.C. · April 25–28
Chicago · Nov. 29–Dec. 1	
	2019
2018	San Diego · April 3–6
Kansas City Nov. 25-28	
Seattle Nov. 28-30	2020
	St. Louis · April 21 –24
Innov8 Conferences	
Las Vegas · Nov. 15-17, 2017	2021
Hartford, CT · Oct. 4 –6	Atlanta · Sept. 22–25

Support NCTM with Amazonsmile

When you shop at smile.amazon.com, Amazon automatically donates 0.5% of the price of your eligible AmazonSmile purchases to NCTM's <u>Mathematics Education Trust</u> grant, scholarship, and award programs every time you shop—no cost to you. You can get involved and help <u>support</u> <u>NCTM</u>. Only purchases made starting at <u>smileamazon</u> are eligible (not at amazon.com or the mobile app). Choose the National Council of Teachers of Mathematics Incorporated and look for the AmazonSmile badge in <u>Your Orders</u> to see which of your orders had a donation applied. Be sure to keep this opportunity in mind as you make purchases in the future!

Bootstrap: Equity. Scale. Rigor.

In a Bootstrap Workshop you will see curriculum in action, explore research, investigate cognitive challenges for students struggling with Algebra, and be a student for a day! You will work with your peers to discuss content, pedagogy, and spend the day in your students' shoes. You will have the opportunity to try activities and debrief with other teachers, talk pedagogy with the trainers, and try out the materials and software firsthand. Finally, you will go home with a videogame that *you* created. Learn more and see if a <u>Bootstrap Workshop</u> will be offered near you.

Free Preview Articles from NCTM Journals

NCTM serves as an amazing resource for mathematics educators. The website, <u>www.nctm.org</u>, houses a wide range of information from classroom resources and professional development

The Number Line ∞ August 2017

opportunities to an extensive database of research relevant to teaching and learning mathematics. Take some time to read the selected articles below from the March issues of the NCTM journals.

<u>Teaching Children Mathematics (TCM)</u> (Pre K – 6) Free Preview: <u>Are Your Students Problem Performers or Problem Solvers?</u>

<u>Mathematics Teaching in the Middle School (MTMS)</u> (5 – 9) Free Preview: <u>Making Homework Matter to Students</u>

<u>Mathematics Teacher (MT)</u> (8 – 14) Free Preview: Quickfire Challenges to Inspire Problem Solving

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LATM Attends the NCTM Affiliate Leaders Conference

Maryanne Smith, LATM Past President/NCTM Representative, and Tricia Miller, LATM President, attended NCTM's Affiliate Leaders Conference held recently in Baltimore, MD. Time was spent working with other affiliate leaders from different regions across the United States and Canada. Leaders shared successes and challenges, collaborated about leadership and membership strategies, and discussed current NCTM initiatives. Participants heard from Dr. Matt Larson, NCTM President, and Marilyn Strutchens, Auburn University, in addition to the members of the Affiliate Leaders Conference Committee. The theme for this year's conference was, *Intent to Impact: Addressing Access, Equity, and Advocacy in your Affiliate.* Maryanne and Tricia are excited to advocate for math teachers in Louisiana and support educators in providing access to quality mathematics instruction.



Pictured here are Maryanne and Tricia with NCTM Board Members. From left to right are Gina Kilday, Maryanne Smith, Tricia Miller, and Marilyn Strutchens.

LATM EXECUTIVE COUNCIL

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Renew your Membership

Are you still an LATM member? Have you renewed your membership lately? To check your status and renew your membership visit <u>http://lamath.org/Membership.htm</u>. Submit the renewal information online, print the renewal receipt after submitting, and pay with PayPal or mail the renewal receipt with your \$15 payment to the address specified on the receipt. If you have any difficulties with the online form, please contact Beth Smith at <u>bethsmith1124@gmail.com</u>.



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