A message from the Executive Director, Tom Young

Hello! And welcome to year 42 of the Math League! It's going to be another great year!

At the Directors Fall Board Meeting, it was decided to conduct this season in a similar fashion as last year's. That is, to hold it online and require integer answers. However, they voted to adopt three modifications.

>**One,** students meet at their own school to take the tests
>**Two**, the students are provided with a paper copy of the questions
>**Three,** the coach will start all students for their second test at the same time.

Schools are not prevented from gathering as a division, but not encouraged, except for Meet 5 where we hope divisions will have an end of season award ceremony. Divisions that want to meet should contact me for help.

Send feedback to us regarding the level of difficulty and insights as to what makes good problems. Our new Head Problem writer, Colin Gardner – Springer, welcomes them. ALL coaches are able and encouraged to use the scoring website to provide this feedback.

Another innovation this year is that Rena Erickson, coach at Erickson Academy, will be spearheading efforts to elevate our social media profile. She might be contacting you for a story line. If you feel comfortable helping out, do so. See article later in newsletter.

I applaud your hard work and as always, **GO MATH TEAM!**

Some Pictures from the Summer Math Institute grades 7 through 9. Topic: KNOTS
Many thanks to instructors Annie Perkins and Liz Lehtola

Colin Gardner – Springer, Head of Problem Writing Team

Congratulations to last year's students and coaches - despite the pandemic, average scores increased by over 30%! This is an outstanding accomplishment.

A few notes as we kick off the 2021-22 season:

1. **All answers are integers again this year.** Certain problems may include instructions to convert an expression to an integer. For example, for the problem

   > $2 - \frac{1}{3}$ can be written in the form $\frac{m}{n}$ where m and n are relatively prime positive integers. Determine $m + n$.

   the correct answer would be 8 (not $\frac{5}{3}$ or $1\frac{2}{3}$).

   Students should keep this restriction in mind, and carefully read the problem for instructions or review their work for errors if a non-integer answer is reached.

2. Once again, **no calculators are permitted on individual events** this season. Calculators are permitted during team events only.

3. Looking ahead, problems included in Meet 5 Event D will be variations of AMC 12 problems from the events taking place **this November** (not those which occurred this past February).

While I am new in this role, rest assured that our highly experienced problem writing team remains in place. Our goal remains to provide interesting problems which challenge and motivate all participants. Those who have prepared for a meet's topics will find accessible problems, and on the flip side even the strongest participants will be challenged. Take pride in the problems you're able to solve, and spend some time reviewing those you missed - that's where the real learning happens!

How to run a meet in 2021 – 2022

Before the Day of the Meet

1. Access scoringmnmathleague.org
2. Enter student names for your team
3. Set up Team Meet by assigning events to each student and picking your team of 8 students
4. Sign up for a time slot
5. Assign students accounts
6. Run copies of tests

The day of the Meet

a. Students should gather at your school at the slotted time

b. You as the coach of the team, need to log in and select recorder for team test

c. Have students sign in, hit Compete, and get ready for first test **but not click the button** to "watch" f or the start.

d. Hand out first test to each student, keeping them silent and instruct them not to look at the test until their online test starts

e. Only once you are ready for students to start, Click Start Individual Events

f. Have students click the button to "watch" for the start. Their test should start shortly. Then they can turn over their sheets

g. Monitor first test (15 minutes, all answers are integers, NO calculators, *official answer is the computer entered answer)*

h collect first test when done, distribute second test. Again keeping them silent and instruct them not to look at the test until their online test starts

i. Only once you are ready for students to start, Click the button in the third box to start round two

j. have students click the button to "watch" for Round two. Their test should start shortly. Then they can turn over their sheets

k. Monitor second test (15 minutes, all answers are integers, NO calculators, *official answer is the computer entered answer*

l.. When second test is done, students can talk

m. gather team of 8 together.

n. Distribute team test. They should not look at it yet. Only one person should be logged into the computer (the recorder)

o. start team test. The recorder should click their button to listen for the start of the team event.
     The recorder should say when their computer has loaded the team event.
      Only then may any students turn over their problem sheet for the team event.
     (30 minutes all answers are integers, Calculator active,
     official answer is the computer entered answer)

p When team test done, double check the scores from events and from team test.

An opinion about time slots:

While most coaches feel the 3 – 4:30 Monday is the prime time, 4:30 – 6 should be highly sought. In the old model, the bus never got home until 6. This way, you could practice for 1½ hours before taking the tests!

A dear friend of the League,
Tom Kilkelly,
# passed away this summer

A Passage from his obituary:

Thomas was a passionate mathematics teacher who inspired, mentored, and educated students and colleagues throughout his long career. He taught in many places, spending most of his career at St. Thomas Academy and Wayzata High School. After retiring from classroom teaching, Tom worked with the students and mathematics department at Cristo Rey High School, dedicating himself to the Ignatian Volunteer Corps. He was proud of the accomplishments of the math teams he coached and their numerous state championships. He authored contest problems and challenged students to become skilled problem solvers.

Not only did Tom work at Cristo Rey during retirement, he also served as Head of the Problem Writing Team from 2017 – 2021.

Tom also served on many mathematics committees, coached the MN ARML team for 20 years, and wrote ARML power questions. He will be deeply missed.
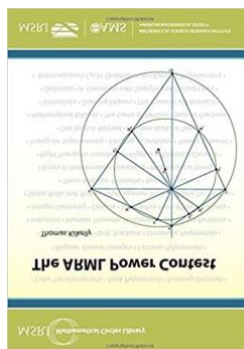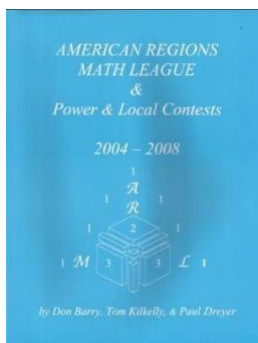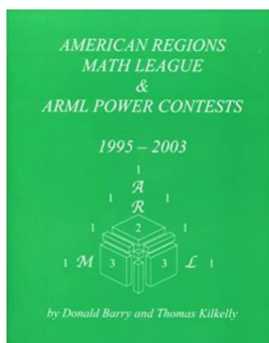
Books by Tom Kilkelly

The Impact of Math Team

The call went out in the summer of 2020 to Math League alumni to Share Your Story. Stay tuned for another story in the next newsletter.

Introducing Rena Erickson, our Social Media Specialist

Rena Erickson will be writing stories and sharing photographs via social media platforms to raise the profile of the Math League. She will be searching for stories to share, so if you have one, email her at
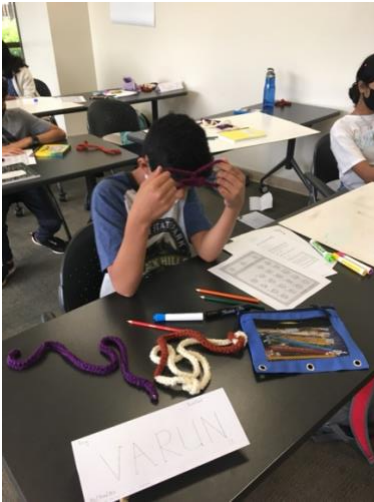
mnhsmlsm@gmail.com

Follow the League on Facebook, Twitter, and Instagram!

Good luck on the first Meet, Monday, November 1st.
If you run into any issues, contact us at
mathleague@augsburg.edu
or call Tom Young at
763 568 0118

More Pictures from the 2021 Summer Math Institute

Many thanks to Zach Sheffert for great work in teaching the 10 – 12 online probability course!

Free Texts from the Summer Math Institute!!

Dr. Ken Suman, a retired mathematics professor at Winona State University, has been our lead teacher in the 10th – 12th grade SMI for the past two years. In 2018, students at SMI studied Counting Techniques and in 2019, they studied the Theory of Equations.

Dr. Suman wrote texts for the classes, specifically with Math League in mind. These texts are a goldmine of information. Dr. Suman has willingly shared his expertise and suggested that the texts be available to all Math Leaguers.

To that end, the pdfs of the texts can be found at scoringmnmathleague.org under the Coaches Corner tab. Then click on Topic Resources and you'll see the links.

PowerPoints available to help remind you of how to run a meet. They're posted on mnmathleague.org website under For Coaches link

Newsletter #26 Puzzler - A tough KenKen

http://joemaller.cm/3369/solving-a-difficult-kenken-puzzle/

	1	2	3	4	5	6
A	1= 1	15+ 5	10+ 6	3	13+ 4	11+ 2
B	6	4	1	5	2	3
C	13+ 5	3	11+ 4	2	7+ 1	6
D	3	7+ 6	2	11+ 4	5	1
E	2	1	5	6	13+ 3	4
F	9+ 4	2	3	1	6	5= 5

Newsletter #27 Puzzler:

From the Putnam exam https://kskedlaya.org/putnam-archive/1998.pdf

A right circular cone has base of radius 1 and height 3.
A cube is **inscribed** in the cone so that one face of the cube is contained in the base of the cone.
What is the side-length of the cube?