



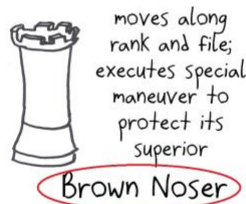
A message from the Executive Director, Tom Young

Hello all! Three regular season meets down, two to go!

Here's Newsletter #3 for the 2023 – 2024 season. In it, notice these items:

1. A message from Colin Gardner Springer
2. Meet Dates for 2023 – 2024
3. Meet Dates for 2024 – 2025 Results of the survey!!!!
4. Wayne Roberts' new book
5. Nuts and Bolts for this season
6. *Plan for next year for Math League 2.0*
7. *Guess the Interval Game explained*
8. *Video Contest*
9. *State Tournament T-Shirt Design Contest*
10. *Our Minnesota IMO Contestants*

More Fitting Names for Chess Pieces



Author: Ben Orlin (who by the way, will be an honorary judge at the state tournament!!)

1. A message from the HPWT (Head of the Problem Writing Team) Colin Gardner-Springer

I hope the year 2³.11.23 is treating everyone well so far!

Meet 4 is coming up soon, and as usual we've attempted to include some problems which should be accessible to nearly everyone, along with others to challenge the very best in Minnesota.

Some hints regarding the individual #1 problems:

A1 requires being able to factor a (monic) quadratic expression.

B1 involved calculating the area of a sector of a circle.

C1 requires being familiar with functional notation.

D1 is perhaps simplest if you can find the axis of symmetry of a parabola.

Feel free to pass these hints (or the entire newsletter!) along to your students.

The best way to excel at math competitions is to practice on problems from old competitions. Thank you for making old MSHSML events (and other competition problems) available to your students.

Despite some very challenging problems over the course of three meets, we still have four students maintaining a perfect score for the season. Congratulations to Kevin Qui, Michael Luo, Henry Zheng, and Elizabeth Zhu!

Best wishes to all,

Colin Gardner-Springer

2. Meet Dates for 2023 - 2024

Meet 1	November 6, 2023	
Meet 2	November 27, 2023	
Meet 3	December 18, 2023	
Meet 4	January 22, 2024	
Meet 5	February 12, 2024	Required to meet as a Division in person
Tournament	March 11, 2024	NOTE: Change in site – tournament will be held at Spring Lake Park HS

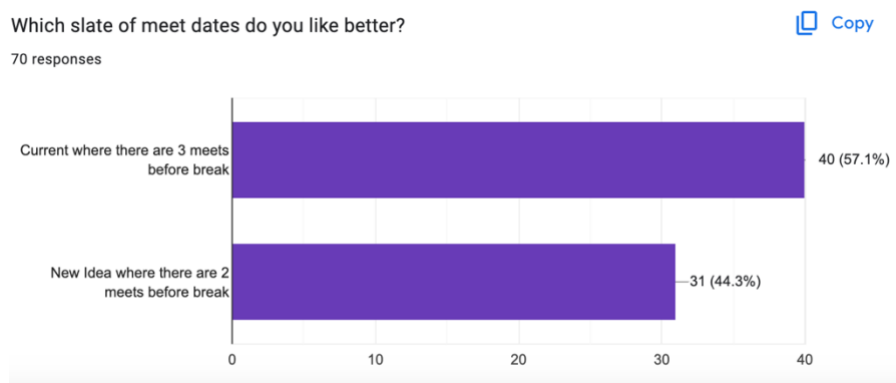
3. Meet Dates for 2024 – 2025

In the last newsletter we asked for your opinion as to which of the following two schedules you would prefer

2024 - 2025
November 4, 2024
November 25, 2024
December 16, 2024
January 27, 2025
February 10, 2025
March 10, 2025

2024 - 2025
November 18, 2024
December 9, 2024
January 13, 2025
February 3, 2025
February 24, 2025
March 24, 2025 (possibly March 17 depending on school availability)

Seventy-one of the coaches weighed in with the following results:

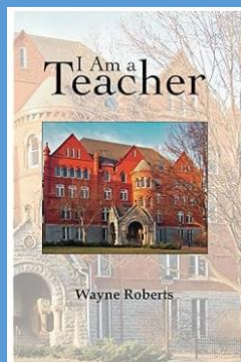


At the end of the newsletter is a small font copy of the coaches responses

At this time, no changes are anticipated, but stay tuned!

4.

Wayne Robert's
New Book



Amazon at
[Wayne's Book](#)

5. Odds and Ends for this season

a. **Divisions can decide which of the four ways to administer a meet.**

The method chosen may vary from meet to meet, but note.

Schools are required to gather together at Meet 5.

The four ways to administer a meet are:

- i. Gather as a division at a common site and administer the tests the “old” way. The “old” way is defined as giving students a paper copy of the tests, correcting them at the site, and coaches entering the scores via the scoring website.
 - ii. Gather at individual schools and administer the test the “new” way. The “new” way is defined as giving students a paper copy of the tests, allowing them to enter their answers online via the scoring website, and coaches verify the scores after the events are finished.
 - iii. Gather some of the schools at a common site and allow the other schools in the division to gather at their own school and use a “hybrid” method to deliver the meet. Schools gathered at the common site will use the “old” way while the schools gathering at their own school will use the “new” way.
 - iv. Gather schools at a common site and allow the schools to use the “new” way to administer the meet. This can be done if the division is confident that the site has sufficient Internet capability and the students have the device capability to do the meet online the “new” way.
- c. Given that schools will be doing meets in different ways and at different times, coaches should stress the importance of not discussing the problems until all schools are finished. Coaches can, however, release solutions when all schools in the division are finished.
- d. All events A through D and the team event are NO calculator. Also, all answers will be integers. Coaches should stress this with their students. An integer is defined as a number from the set $\{\dots -3, -2, -1, 0, 1, 2, 3\dots\}$. Answers written in the form of a fraction will not be correct. For example, $6/2$ will not be considered correct nor will $3/1$.

6. New Competition Structure for 2024 – 2025 and beyond

Overview: Due to the pandemic and the shifting nature of the League Operations the League Office thought it was necessary to evaluate our current operations to see if they fit the reality of today. In order to get the best data, the League Office distributed a survey that went out to all coaches, hosted an in-person retreat with 15+ coaches and the Executive Committee, and dedicated the majority of the Coaches Conference to this topic. Based on the robust discussions over the last few months, the Executive Committee drafted this proposal which the Board approved October 1st. These changes will go into effect in the 2024 – 2025 season

Timeline: These changes, adopted by the Board, will be implemented for the 2024-2025 school year.

Part 1: The structure of meets will be changed from 4 individual events to 3 individual events, ***with all students participating in all individual events.***

Rationale:

- Allows 9th and 10th grade students more access for advanced questions.
- Keeps the time frame for In-Person Meets the same
- Eliminates the disparity of choosing different events for different students.
- Retains the process of selecting the scoring team ahead of time.
- Allows for easier substitutions when students are absent.

Specific Details:

- The 3 individual events will each have 5 questions.
 - Each question will be worth 1 point.
 - There will be two “quickie questions” per event.
 - Power scoring will still be in place.
- Coaches will still need to set their scoring team prior to the Meet start.
 - No more than 6 of the 8 scoring team members shall be beyond the 10th grade (as is currently the case).
- Team Event Scoring
 - There will be 6 questions on the team event.
 - Each question will be worth 5 points.
 - A perfect team score at one meet will be 150 points.
- The topic list will be revised and submitted to the board for approval at a future meeting.
- Additional practice materials will be created, perhaps including a reorganizing of the problem archive.
- Coaches might be able to select a Junior Varsity team in the scoring system (implementation pending)

Part 2: Implement a “Guess the Interval” for Meet 1 and Meet 5.

Rationale: This event will increase competition fun for all students and the team aspect and bonding amongst students.

Specific Details:

- The League Office will create and provide an overview, scoring instructions, and instructional video on how to implement it.
- This will not be a part of the scoring system.
- This event will be available as an in-person, virtual, and hybrid version for Meet 1.
- This event will take place live at Meet 5.

7. Guess the Interval Game Version BETA

SETUP

You are given 10 items to estimate the interval in which the item resides.

You are given 14 guesses to use to identify the interval

PLAY

During the 20-minute game time, you submit guesses as to the interval an item resides.

You can submit up to five guesses on the same item. This may improve your score.

No internet researching allowed

SCORING

Every team starts with 3200 points. The best score is 0.

If your guess for the interval doesn't include the right answer within that interval, you are assessed 100 penalty points each of these times. Penalty points are added to the total

If your guess for the interval does contain the correct answer, points are subtracted from your score according to the following scale:

Your interval score is **the floor of the quotient of your max divided by your min of the interval**

If your interval score is 1, 300 points are subtracted from your score

If your interval score is 2 through 5, 150 points are subtracted from your score

If your interval score is 6 through 10, 50 points are subtracted from your score

If your interval score is over 10, zero points are subtracted from your score

Your best result per question is what is used for the total

Fifty points are subtracted for each unused guess

A max of 5 guesses per question

The team with fewest points wins

A sample Excel spreadsheet that implements game will be sent with the email accompanying this newsletter

8.

MN State High School Math League Math Team Video Contest

1st place: \$200 to school's math team

2nd place: \$150 to school's math team

3rd place: \$100 to school's math team

Video Guidelines:

Produce a 90 second video explaining why you like to be involved in the Math League. Videos might include: student interviews, teacher endorsements, sample problems, or video of practices/meets.

Video Entry Submission:

Videos are due to the Math League Office
(mathleague@augsborg.edu)
by *March 4st, 2024.*

- Videos contest entries must be sent and approved by the school math team coach.
- Winning schools will be notified by March 7, 2024.
- Winning video will be shown at the State Tournament on March 11, 2024, uploaded to the Math League Facebook page, and may be used for recruitment efforts

MN State High School Math League 2024 State Tournament

T-shirt Design Contest

Prize: **\$50 VISA Gift Card and a Free T-shirt**

How to enter:

Submit a one-color design for the t-shirt front.

The design should include the words:

MN State High School Math League State Tournament March 11, 2024

- Email your design by **Feb. 8** to: mathleague@augsborg.edu
- Accepted file format: pdf only
- Include your name, grade and school in the email submission.
- Winner will be notified by Feb. 11th via email.

Email mathleague@augsborg.edu with questions

10. Our Minnesota representatives on the IMO team

1975 Paul Vojta

Contestant [♀ ♂]	P1	P2	P3	P4	P5	P6	Total	Rank		Award
								Abs.	Rel.	
Paul Vojta	6	7	7	6	6	8	40	1	100.00%	Gold medal
Paul Herdeg	6	7	7	6	6	8	40	1	100.00%	Gold medal
Miller Puckette	6	7	7	6	6	7	39	7	95.52%	Gold medal
Stephen Modzelewski	6	7	6	6	6	1	32	31	77.61%	Silver medal
Steven Tschantz	6	7	0	6	2	8	29	38	72.39%	Bronze medal
Reed Kelly	6	7	0	6	6	3	28	41	70.15%	Bronze medal
Russell Lyons	5	7	7	6	0	3	28	41	70.15%	Bronze medal

1993 Tim Chklovski

Contestant [♀ ♂]	P1	P2	P3	P4	P5	P6	Total	Rank		Award
								Abs.	Rel.	
Lenhard Ng	7	7	7	2	7	7	37	4	99.27%	Gold medal
Andrew Dittmer	6	7	5	1	7	7	33	14	96.84%	Gold medal
Wei Hwa Huang	0	2	7	4	7	3	23	66	84.22%	Silver medal
Stephen Wang	7	2	0	2	7	4	22	73	82.52%	Silver medal
Jeremy Bem	7	1	1	1	4	4	18	111	73.30%	Bronze medal
Tim Chklovski	1	2	0	5	7	3	18	111	73.30%	Bronze medal
Team results	28	21	20	15	39	28	151	7	91.67%	G, G, S, S, B, B

1996 Michael Korn

Contestant [♀ ♂]	P1	P2	P3	P4	P5	P6	Total	Rank		Award
								Abs.	Rel.	
Alexander Harry Saltman	7	7	7	7	2	7	37	4	99.29%	Gold medal
Christopher C. Chang	7	7	6	7	2	7	36	7	98.58%	Gold medal
Michael Korn	7	7	7	1	2	7	31	21	95.27%	Gold medal
Carl Bosley	7	5	2	7	3	7	31	21	95.27%	Gold medal
Carl Alexander Miller	4	0	7	6	1	7	25	50	88.42%	Silver medal
Nathan Curtis	7	2	7	7	1	1	25	50	88.42%	Silver medal
Team results	39	28	36	35	11	36	185	2	98.65%	G, G, G, G, S, S

schedule question responses

Costs and Benefits of Each Choice

I somewhat prefer the new option, EXCEPT that I believe State should be on March 17th (whichever option is selected for regular meet dates) since that week appears to be much less common for spring breaks (with the notable exception of Anoka-Hennepin who returns from break on the 18th). The 10th and 24th both appear to have more numerous conflicts. \]]\

"

I prefer to do 3 meets before break, but have no costs/benefits other than preference and can do both options at Saint Agnes.

Benefits: Avoid conflicts with Thanksgiving and winter break, allow most fall sports to end,

I know my school schedule isn't full week of Thanksgiving off this upcoming year. The second option isn't bad; however, weather in February is a bit more wintry and so a meet could be interrupted due to that potentially. I do like the larger gaps in the 2nd schedule; however, my stipend is pretty small so it makes me feel like I'd be coaching from beginning mid October until potentially Spring break which is quite a long time (for the \$600 I get- not to mention how much of that goes to providing snacks).

New coach so I don't have an answer to this yet. I just like familiarity.

With the new idea, there are 2 Federal Holidays on Mondays between meets. For schools that practice on Mondays, this limits the amount of practice time.

State meet avoiding Spring Break conflicts would be appreciated. Season is already pretty long and I think option B makes it longer.

This change should not be made before the 2025-2026 school year, as activity calendars for the fall and winter of 2024 are already built in many schools-- particularly in those smaller schools where we are sharing students with athletics. Additionally, I think we should move earlier in the year, not later. I lose students when they are freshmen because we start later than when the Junior High League starts, and I don't get them back until maybe their senior year, because they find other activities to fill the time. It is already a stretch to start practice in September to attract those students early when we don't compete until November; having Meet 1 later still would make it that much harder.

January and February are busier months for the students at our school. November has less activities, so we get better participation at the earlier meets.

I like the concept of slowing down to only have 2 weeks of winter break, but it concerns me to put the state tournament anywhere near many districts' spring break at the end of March. Would there be a way to do 2 meets before winter break, and then delay the state meet until mid-April? Or still then just go on to do the state meet a week or two after Meet 5 in early March?

Right now, I am having a hard time building a culture with my Math Team. Part of that is because the meets are coming so quickly. When that happens, I haven't been able to instill the habits for success. If we can get more time between meets at the beginning of the season, I have a better chance of getting a rhythm going. Then, when the schedule becomes more condensed, they already have those habits to work on their own,.

If we moved to the new idea, there would be a lot of time between meet 2 and 3. Most of that time would be over break when students aren't really using their math skills. I feel like a lot of December's progress towards the topics for meet 3 would be lost over winter break.

I would prefer to get Math team going early in the year.

I like having 3 meets in before Christmas break and having a couple weeks after break to work on problems for meet 4. I also like that this schedule puts the state meet on Pi Day some years ;)

Current plan places Meet 2 on a Finals Day during a Holiday week, and has potential conflicts for Week 3 at schools with a long winter break. Also has a very long gap between Meets 2 and 3. New Idea plan has no conflicts with our school calendar (first time in a very long time that has happened). It would also give a little buffer from the fall sports season so that those two would not "collide" in the fall, which is difficult for students and coaches.

It is nice to have a meet early November. This typically falls in between sport seasons (if your team is not advancing in the playoffs) and we are able to get more kids to participate without having to battle with sports. Moving a meet to January 13 runs into problems with end of the semester final exams.

We would actually have school for all of the meets in the new option.

Either is fine with me...

Better distribution of time between meets.

More material can be covered in classes before the topics are required for meets. Students will feel more prepared. Weather issues may be more disrupting to the second schedule. With virtual meets this is not as big of an issue.

Much better scheduling with school breaks .. New schedule does not put meets on Mondays immediately following breaks (esp Thanksgiving) or during exam schedule.

I am ok with either but I prefer the first choice.

Doesn't conflict with winter break at all. Starts a little later which gives people more time. Though since it starts later it also ends later.

We typically do not have school for the first meet. The 2 meets before break allows us to have school on all meet days. Making it easier to get students to the meet.

More time to promote Math League and then to start practices. So many of our students are in multiple things and coordinating it all is the toughest aspect.

Easing into competition is much better than easing out! Also it gives schools time to recruit more mathletes for the league competitions. A meet earlier in December works best for all schools as they are in session. Having differing weeks (in December) of competition really compromises integrity. Thank you for considering our input!

Team members are used to the current schedule. New schedule would allow schools a little more time to recruit new members.

The new idea should not conflict with our spring break.

I like the later start because it is less intrusive for practices around Thanksgiving.

For coaches who also coach a fall sport, it is nice to be able to start a little bit later.

I like having 2 meets in November, as it is between fall and winter sports seasons. I get more kids to participate in November, because they don't have sports practices. Getting done on March 10th also ends just as spring sports seasons start - pushing the state meet back to March 24 runs into spring sports.

The old schedule has meets on "no school" days for my team. On Nov. 4 and Jan. 27, there is no school. These are teacher in-service days. I am always missing students on these two meets because they will schedule medical appointments and/or college visits on these days.

We have spring break March 10.

The early start is better for student engagement.

Pros: Gives more time to recruit and prep before the first meet. It also works out better with our days off. Cons: We would be probably be on spring break on March 24.

This has worked. It gets things going sooner in the fall. The benefit of the later start is that fall sports would be mostly done with, freeing up more students to participate on Math Team.

Usual schedule fits current mathletes needs

3 meets before Christmas seems rushed. Earlier in December is easier than later in December with the business of the end of semester 1. I'm also a soccer coach so it gives more time between the fall season and winter season. In general, the latter schedule aligns more closely with the winter activity season. March is tricky though with spring breaks. The earlier in March the less likely a school is on spring break.

I think pushing the state tournament back a couple of weeks will cause more scheduling conflicts than we suppose. We are always going to have conflicts, mostly due to the fact that different schools run on quarters, trimesters, or semesters. The natural breaks to their schedules fall at different times. I think it's a bit silly to try to plan for the exceptions (students who want to try to do many activities, a few schools who have a break at a particular week, etc). I think the BEST scheduling change we could make is to have four regular season meets and one state tournament. If we really wanted, we could do a regular "preseason" meet in very late October. Meet dates: Mid Nov Mid Dec Mid Jan Mid Feb State Tournament on Monday closest to Pi-Day Preseason in late October Now that the AMC Exams happen in November, it would be possible to simply say variations of those problems COULD be in some of the meets in Dec/Jan/Feb/Mar.

Having 3 meets before winter break is easier to schedule with students. Have 3 meets after winter break may be more difficult to schedule with schools on trimester schedules and spring breaks at the beginning of March.

The new idea avoids the yearly complication of us being on winter break for meet 3.

holidays breaks are hectic with choir and band kids. If this is more after break, that would help and 2nd semester can learn more math.

My attendance went way down the week before winter break, and I could barely fill a team. As a volunteer/non-teacher coach, having more time at the beginning of the year will help me identify student strengths.

Option 1 - Benefit: State Tournament is NOT on our spring break (in the past we have lost top students to Music Dept Trips over break), Cost: We have no school the week of Nov 25th - could it be possible for us to take the meet the previous Thursday? I think I remember ONCE bringing kids into the school on a non-school day for a meet. Option 2 - Benefit: No conflicts for regular meets, Cost: March 24 *is* over our spring break, we might have more student conflicts. The 17th would be better for us.

It is easiest to keep kids committed and on schedule prior to winter break. Moving the majority of meets until after winter break will decrease overall participation as kids tend to trail off throughout the season and even more so after winter break.

Spring Break conflict.

More practice earlier in the season and it seems to be better paced. I am worried about the short practice time before meet 4, which generally seems to be the toughest.

We do not have school on November 25th, so I prefer the second set. I also like starting a little later.

Makes it more of a winter season event, so my fall sport athletes will be able to finish the fall season before math team starts. Also avoids most of the major holidays and school music concerts

Meshes better with Math League participants who also play winter sports.

Math team can be a very long season for some students seeing that we start in october and go to march... Many of my students are in multiple activities/sports, so finishing a little earlier, which is usually before spring break with the current idea, is a nice break for them. going that late into march will have many conflicts with spring break.

the second option overlaps with knowledge bowl..and it gets tough for practice time with sports and math league and knowledge bowl.

Just prefer this...did I already fill out?

More schools will be on spring break on March 24th which is not ideal timing for the state meet.

I don't like the idea of a meet shortly after we get back from break (option 2). I feel like the practicing we do in December will be forgotten over the break and it wouldn't leave much time for review/practice in January if the meet is so soon.

I can live with either.

Knowledge Bowl and Robotics really amp up in January and February, so starting our season earlier and ending earlier is better for the smaller schools that have kids in all 3 of those activities. Other things that also are getting more involved at that time is FCCLA, one-act play, and Close-Up. Then we also have to compete with GBB and BBB playoffs towards the end of February where there could be a playoff game on the 24th of February and normally that is the in-person meet. Those involved with sports wouldn't be able to attend that last meet and could potential hurt the team chances of winning the section. Please leave the dates alone!!!!

I like the first because most spring breaks are not affected. The second options will have far more schools on spring break depending on the year. We, for example, would be on spring break that week. I think if we are wanting a true representation from each school, and more opportunity for schools to participate, we need to avoid as many spring breaks as possible. The same will be true for sports schedules. Most if not all are done before November 4th, and most spring sports begin after March 10th. The second option will possibly run into spring tryouts. I don't really see a cost difference between the two.

Our school calendar matches better with this choice

Inservice day for my school on November 4th and low attendance on the meet after Thanksgiving

Nice to get meets in before the snow later in the winter season could delay more meets

In the second choice, Feb 3 is a workshop day for my district.

I prefer to be done with the season earlier in the spring.

Participation rates of students with other obligations.

I could go with either schedule but would prefer to see another week between the first 2 meets in the 2 meet proposal. Thanksgiving will make it hard to have many practices between 11/18 and 12/9. How many schools would be on spring break for each proposal during the state tourney? I'd guess more would be out on 3/24, but I don't know for sure.

I like 3 before winter break and 3 after. I also like to be done before spring sports start. Otherwise our season spans across all 3 sports seasons when you include starting practices well before meet 1.

The latter choice conforms better to our school calendar.

I would love more time before winter break to get new students used to math team.

Cons for 2 meets before break: Are some students on Spring Break by March 24? Pros for 2 meets before break: Lines up more with athletic seasons.
Avoids scheduling difficulties in years when districts have varying winter break schedules.

Students are more available before break as many winter sports are not yet in full swing so it is easier to schedule around p practices and events.