

Since 1977



2025

Math League International Summer Tournament



The Math League is a highly influential mathematics program for K-12 students in the United States, across North America, and around the world.



www.mathleague.world

History of the Math League



The Math League is a highly influential mathematics program for K-12 students in the United States, across North America, and around the world. Since its inception in 1977, it has grown to become an internationally recognized program, held annually without interruption.



Founders and Contributions

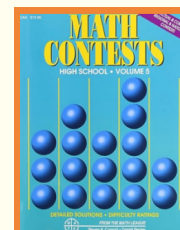
The Math League was founded by renowned mathematics educators, Mr. Steven R. Conrad and Mr. Daniel Flegler. In 1977, Mr. Flegler was awarded the "Excellence in Secondary Education Award" by Princeton University. Later, in 1985, both founders received the "Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST)" presented by President Ronald Reagan, the highest recognition for mathematics and science educators in the United States. The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) are the nation's highest honors for teachers of mathematics and science (including computer science). Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education. Daniel Flegler is the winner from New Jersey State, and Steven R. Conrad is the winner from New York State.



Mr. Steven R. Conrad



Mr. Daniel Flegler



Both founders have also served as editors and reviewers for numerous mathematical journals and as chairpersons or members of mathematics competition committees across 15 U.S. states. They were also part of the U.S. SAT committee for six years and have co-authored 18 books.

Overview of the 2025 Math League International Summer Tournament



- The 2025 Math League International Summer Tournament is jointly organized by the Math League, the Mathematics Departments of Princeton University, Columbia University, and Williams College. It will take place in New Jersey. Participants include outstanding students from the U.S., Canada, China, and other countries.
- Activities include the finals competition and advanced mathematical learning.



Dates

- Grades 4-5: July 12, 2025 (check-in) - July 19, 2025 (check-out)
- Grades 6-9: July 20, 2025 (check-in) - July 28, 2025 (check-out)



2025 Math League International Summer Tournament Schedule



(Grades 4-5) Tentative Schedule

Math League 2025 Schedule (Grades 4-5, tentative)

Time	Saturday 12-Jul	Sunday 13-Jul	Monday 14-Jul	Tuesday 15-Jul	Wednesday 16-Jul	Thursday 17-Jul	Friday 18-Jul	Saturday 19-Jul
8:00 AM		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast		Breakfast
8:30 AM								
9:00 AM		Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Tournament (Speed Round, location: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Departure Day (International students)
9:30 AM								
10:00 AM								
10:30 AM		Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Tournament (Individual Round, Part I, location: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	
11:00 AM						Departure (for North American Students)		
11:30 AM								
12:00 PM		Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	
12:30 PM								
1:00 PM								
1:30 PM								
2:00 PM		Math Tournament (Team Round, location: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Field Trip (Princeton University and Vicinity)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	
2:30 PM		Break	Break	Break	Break		Break	
3:00 PM								
3:30 PM	Arrival at Campus (All students)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Tournament (Individual Round, Part II, location: TBD)	Math Tournament (Relay Round, location: TBD)	Math Lecture & Math Activities(Professor:, Topic: TBD)		Tournament Summary ()	
4:00 PM	Opening dinner							
4:30 PM		Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()		Recreational activities ()	
5:00 PM								
5:30 PM		Dinner	Dinner	Dinner	Dinner		Dinner	
6:00 PM								
6:30 PM								
7:00 PM								
7:30 PM		Talent Show, Part 1 (location: TBD)	Talent Show, Part 2 (location: TBD)	Mathemagics (Professor: TBD, topic: TBD)	Math League Award Ceremony (location: TBD)	Reading, Journal Writing, Quiet time	Reading, Journal Writing, Quiet time	
8:00 PM								
8:30 PM								
9:00 PM								
9:30 PM								
10:00 PM	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	

TBD: To be decided

(Grades 6-9) Tentative Schedule

Math League 2025 Schedule (Grades 6-9, tentative)

Time	Sunday 20-Jul	Saturday 21-Jul	Monday 22-Jul	Tuesday 23-Jul	Wednesday 24-Jul	Thursday 25-Jul	Friday 26-Jul	Saturday 27-Jul	Sunday 28-Jul
8:00 AM			Breakfast	Breakfast	Breakfast	Breakfast	Breakfast		Breakfast
8:30 AM									
9:00 AM		Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Tournament (Speed Round, location: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Departure Day (International students)
9:30 AM									
10:00 AM									
10:30 AM		Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Tournament (Individual Round, Part I, location: TBD)	Math Lecture & Math Activities (Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	
11:00 AM							Departure (for North American Students)		
11:30 AM									
12:00 PM		Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	
12:30 PM									
1:00 PM									
1:30 PM									
2:00 PM		Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Tournament (Team Round, location: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Field Trip (Princeton University and Vicinity)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	
2:30 PM		Arrival at Campus (North America)	Break	Break	Break	Break		Break	
3:00 PM	Arrival at Campus (International students)								
3:30 PM	Opening dinner	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Lecture & Math Activities(Professor: TBD, Title: TBD)	Math Tournament (Individual Round, Part II, location: TBD)	Math Tournament (Relay Round, location: TBD)	Math Lecture & Math Activities(Professor:, Topic: TBD)		Tournament Summary ()	
4:00 PM									
4:30 PM		Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()	Recreational activities ()		Recreational activities ()	
5:00 PM									
5:30 PM		Dinner	Dinner	Dinner	Dinner	Dinner		Dinner	
6:00 PM									
6:30 PM									
7:00 PM									
7:30 PM		Movie Night	Talent Show, Part 1 (location: TBD)	Talent Show, Part 2 (location: TBD)	Mathemagics (Professor: TBD, topic: TBD)	Math League Award Ceremony (location: TBD)	Reading, Journal Writing, Quiet time	Reading, Journal Writing, Quiet time	
8:00 PM									
8:30 PM									
9:00 PM									
9:30 PM									
10:00 PM	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	Lights out	

TBD: To be decided

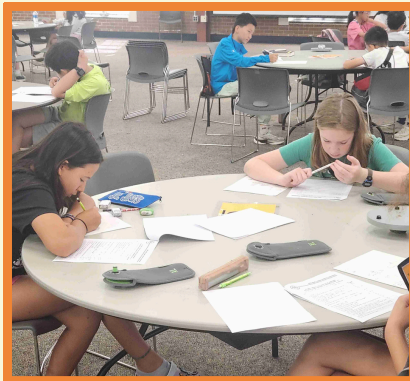


2025 Math League International Summer Tournament Finals



The Finals consist of both individual and team competitions:

- Individual competition includes: Individual Round and Speed Round.
- Team competition includes: Relay Round and Team Round.



Individual competition

- Individual Round: Students will independently solve 10 to 15 questions, each with a time limit of 7 to 10 minutes.
- Speed Round: Students will complete 60 relatively easy questions within 45 minutes, focusing on speed and accuracy.



Team competition

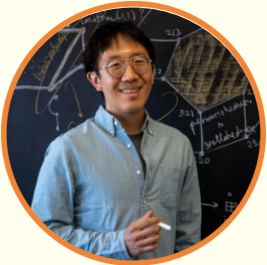
- Team Round: Team members collaborate to solve 10 to 15 problems within 1 to 2 hours.
- Relay Round: In a relay-race format, teams tackle a total of four relay round questions. Each of the four team members solves their assigned problem and passes their answer to the next person in line. The final score is determined by the answer submitted by the fourth team member.

Learning Mathematics from Renowned Professors



Professors from prestigious institutions, including Princeton, Columbia, Williams College, Swarthmore College, and Rutgers University, will teach students during the tournament.

Professors of Math League International Summer Tournaments (Partial List)



June Huh
Princeton University



Matt Weinberg
Princeton University



Jacob Shapiro
Princeton University



Pravesh Kothari
Princeton University



Mark Saul
Mathematical
Association of America



Doron Zeilberger
Rutgers University



Neil Sloane
AT&T Bell Labs



Arthur Benjamin
Harvey Mudd College



Steven Miller
Williams College



Glen Whitney
National Museum of
Math



Pat Devlin
Swarthmore College



Michael Thaddeus
Columbia University

Math League International Summer Tournament Lecture Topics (Partial List)



1. From the Quadratic Formula to Differentiation
2. Mathematics in History, Applications, and Enjoyment
3. Mathematics and Music
4. The Wonderful World of Permutations
5. Using Randomness in Proofs
6. Mathematics and Games
7. Stable Machine
8. Famous Sequences
9. Tensegrity Polyhedra
10. Grundy's Game
11. Apollonian Circle Packings
12. Diving into Dimensions
13. How to Use Math to Build a Safe World?
14. What's Your Favorite Number?
15. The Art of Problem Solving
16. Unlocking Math Magic: Exploring Numbers with AR & VR
17. Knot Theory
18. Checking Divisibility Using Finite Automata
19. NIM and JIM
20. Introduction to Mathematical Physics
21. Modular Origami



Benefits for Participants



Learn Mathematics from Renowned Professors:

- Develop mathematical thinking, creative thinking, critical thinking, and problem-solving skills.
- Explore the connection between mathematics and art.
- Discover applications of mathematics in real life.

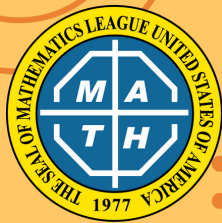
International Exchange and Academic Excellence



1. Participate in internationally recognized math competitions.
2. Learn from esteemed professors and gain inspiration for mathematics and science.
3. Interact with top students from around the globe.
4. Receive competition, participation, and volunteer certificates.
5. Develop connections with U.S. professors, potentially leading to recommendation letters, collaborative research, and published papers.
6. Enhance opportunities for admission to prestigious universities worldwide. (For over 10 years, many Chinese participants in the Math League International Summer Tournaments have been admitted to prestigious universities worldwide, including Harvard University, Stanford University, Princeton University, Columbia University, the University of Chicago, the University of California, Berkeley, the University of Oxford, and the University of Cambridge.)



Math League International Summer Tournament Certificates



Individual Competition Certificates



Team Competition Certificates



Certificate of Completion Volunteer Certificate





Renowned U.S. Professors Guide Students in Research.

Gain the opportunity to receive recommendation letters written by U.S. professors, establish long-term connections with them, and learn mathematics or conduct mathematical research under their guidance. You may also have the chance to collaborate with U.S. professors to publish mathematical papers in academic journals. Below are examples of two students (one elementary school student and one middle school student) who participated in the Math League International Summer Tournament and wrote mathematical papers under the guidance of Professor Steven Miller (Williams College). These papers have been published in prestigious mathematical academic journals.

GEOMETRIC PROOFS OF THE IRRATIONALITY OF SQUARE-ROOTS FOR SELECT INTEGERS

ZONGYUN CHEN, STEVEN J. MILLER, CHENGHAN WU

1. INTRODUCTION

The positive integers $1, 2, 3, \dots$ are not surprisingly one of the most important sequences in mathematics, and typically the first encountered. Quickly one meets interesting sub-sequences, such as the primes $(2, 3, 5, 7, 11, \dots)$, the perfect squares $(1, 4, 9, 16, 25, \dots)$ and the Fibonacci numbers $(1, 2, 3, 5, 8, \dots)$ to name just a few. These are well studied and arise in numerous places; see the On-line Encyclopedia of Integer Sequences [OEIS] for details and properties of these and others.

Almost all integers have irrational square-roots, with the percent of $n \leq x$ with $\sqrt{n} \notin \mathbb{Q}$ approximately $100 \cdot x^{-1/2}\%$. The standard proof uses the property that if a prime p divides a product xy then $p|x$ or $p|y$ or both (see for example [MS] for a proof) and the Fundamental Theorem of Arithmetic (every integer can be written uniquely as a product of primes in increasing order; see [HW]).

Assume a non-square $n > 1$ has a rational square-root; thus we can write $\sqrt{n} = a/b \in \mathbb{Q}$ with a, b relatively prime integers and without loss of generality it suffices to consider n that are square-free, as if $n = m_1 m_2^2$ then $\sqrt{n} = \sqrt{m_1} \cdot m_2$. Then $nb^2 = a^2$. As $n > 1$ is square-free, there is a prime p that divides n . Thus $p|a^2$ so $p|a$ and we can write a as ap . Substituting yields $nb^2 = a^2 p^2$; as n is square-free and a multiple of p , we must have n/p is an integer relatively prime to p and thus $p|b^2$. A similar argument now shows $b = \beta p$, contradicting a and b are relatively prime and therefore \sqrt{n} is irrational.

There's a lot of interesting history on this proof; if we don't use the property that if a prime divides a product then it divides at least one factor, we can mimic the above argument, but only by essentially reproving the result case by case. For example, if $n = 2$ then we would have $2b^2 = a^2$. If $a = 2\alpha + 1$ is odd then $a^2 = 4\alpha^2 + 4\alpha + 1$ is odd, and thus cannot be a multiple of 2, and thus $a = 2\alpha$. Similarly if $n = 3$ we would have $3b^2 = a^2$ and 3 must divide the right hand side as it divides the left. We can write $a = 3\alpha + r$ with $r \in \{0, 1, 2\}$ and note

$$a^2 = 9\alpha^2 + 6\alpha r + r^2 = 3(3\alpha^2 + 2\alpha r) + r^2,$$





Who should participate in Math League International Summer Tournament?



Love mathematics

- Students who are passionate about mathematics and science and willing to challenge themselves.



Broaden one's horizon

- Students who are eager to broaden their horizons and aspire to become global talents in the future.



Study abroad

- Students who plan to study abroad in the United States (or other countries) in the future.



What does the 8-week training include?



Pre-competition training

- "Gifted and Talented" courses and exercises from the U.S. schools, designed to develop students' creative thinking, critical thinking, and problem-solving skills.
- Analysis of past finals competition questions to learn mathematical reasoning in English, master mathematical English vocabulary, and gain a deeper understanding of mathematical problems.
- Preview of the content taught by professors during the Summer Tournament to help students better understand the lessons.
- Analysis of questions from other top U.S. mathematics competitions to broaden students' perspectives.
- Mathematics and innovation.
- A comparison of education systems between China and the U.S.





Safety and Security at the Math League International Summer Tournament

Comprehensive Supervision and Unified Arrangements

During the tournament, all learning and activities are fully supervised and uniformly organized by school teachers. Students are not allowed to move about freely. For every 12 students, 2 school teachers provide 24-hour supervision.



Medical Services

For minor illnesses such as colds, fevers, or stomach aches, the school clinic can provide immediate treatment. For other medical needs, school teachers will accompany students to a nearby hospital for consultation and treatment.



University Dormitories and Standard Meals

Students will stay in standard university dormitories, either single or double rooms, with access to bathrooms and restrooms. Meals will follow the standard U.S. student dining format (buffet-style).

Airport Pick-Up and Drop-Off Services

If needed, the organizing committee provides airport pick-up and drop-off services. Committee staff will meet students at the airport or accompany them to the airport, assisting with check-in, baggage handling, and other travel needs.



The New York Times Article



The New York Times

NUMBERPLAY

Breaking the Grip of the Gaokao, China's SAT

By GARY ANTONICK August 31, 2015 12:00 pm



Gary Antonick (center front) with the China Math League team outside Wallenberg Hall at Stanford University on Aug. 19, 2015. Gary Antonick

The notorious *Gaokao*, (高考, or "High Test") is China's SAT on steroids, with a score on the nine-hour test being the sole criterion for admission to Chinese universities. Preparing for the test is a years-long obsession for both students and parents. (In case you missed it: Brook Larmer's [Inside a Chinese Test-Prep Factory](#).) And for many, the unfortunate consequence is that the lengthy preparation destroys, rather than enhances, academic ability. Student enthusiasm and curiosity are crushed.

Although many in China are aware of the Gaokao's impact, the test has a 1,300-year history and will not be easily killed. Instead, perhaps the best way to break the Gaokao's life-draining grasp is indirectly, through clubs and activities that rejuvenate kids' sense of curiosity and fun. And two weeks ago I discovered one such extra-curricular activity that's becoming popular among Chinese math-lovers: The Math League, an organization based in New Jersey committed to having kids worldwide enjoy math and discussions about problem-solving.

The New York Times Article on Math League International Summer Tournament

Contact Info:

- Email: INFO@LTHOUGHTS.COM
- Wechat customer support:
- Follow the official account :



Official Website: www.mathleague.world