The 7th World Mathematics Team Championship

November 23 to 27, 2016 In Korea

WTMC Organizing Committee



Time Schedule

Title	Date	Time	Group	Schedule
	Nov 24	9:00 am ~ 10:00 am	Teachers	Team Leaders/Coaches Meeting
Competition Day		10:00 am ~ 11:00 am Proctors		Proctors Meeting
		1:00 pm ~ 1:30 pm All Participants		Opening Ceremony
		1:50 pm ~ 2:30 pm	All Participants	Individual Round
		2:45 pm ~ 3:25 pm	All Participants	Relay Round
		3:40 pm ~ 4:20 pm	All Participants	Team Round
		4:30 pm ~ 6:30 pm	Graders Only	Grading
		8:00 pm ~ 9:00 pm 9:00 pm ~ 10:00 pm		Special Lecture Student Interaction Activities and Gift Exchanges
Award Ceremony	Nov 25	7:00 pm ~ 10:00 pm	All participants	Award Ceremony

WMTC Scoring and Rules

	Rounds	Problems	Times	Points problem/set	Points each round	Method Team Score	Max Team Total
Individual	3	14/4/2	30 min.	2/4/8	60	Average	60
Relay	3	2/2/2	24 min.	20/15	60	Average	60
Team	1	20	40 min.	5	100	x 100 %	100

History of WMTC



In 2009, Mr. Quan K. Lam met with Mr. Zhou Guozhen for a proposal organizing a mathematics competition in Beijing. This competition would differ from many other mathematics competitions such as American Mathematics Competitions(AMC) and International Math Olympiad(IMO). It would be a team-oriented competition where competing students from all over the world, forming their own teams, stay in a central location for several days. They would compete with each other while sharing their experience and culture with other international teams through touring famous sights of that location and

other academic and cultural activities together. That proposal contained several objectives.

- 1. Although high school students in China have been some of the strongest math students in the world(winning most of the IMO competitions in the last 20 years), other than that, China was not the host of any other international math competition. It was long overdue, for Beijing in particular, to host a truly international mathematics competition.
- 2. Having good teamwork skills is a valuable asset for succeeding in college as well as in the work force. Therefore, this competition would focus on team-oriented examinations where students work together to solve problems.
- 3. Another key objective for this competition was to give students a chance to compete and to share their experience and culture with students from other regions and countries. Exposure to different cultures, languages, personalities, and customs is vital for being a well-rounded person and job candidate.

The following agreement with both parties was:

- 1. An international team oriented competition where students would stay in a central location for five days. Participants will tour famous sights and participate in academic and cultural activities. The first competition would be held in Beijing in November of 2010.
- 2. Mr. Zhou's organization would be responsible for the funding of the event, the

recruitment of students within mainland China, and the primary organization for creating and organizing the test problems for the competition. His organization also would act as the host for the first competition.

- 3. Mr. Lam would be responsible for the academic side of the event, which includes recruitment of students outside mainland China, reviewing and finalizing the problems created by Mr. Zhou's organization, and adding new problems to the competition that would give an international perspective to the competition.
- 4. The competition would be held in different locations each year so that participants could enjoy diverse settings and cultures as well as encourage students to continue to participate for different experiences.

In the next 12 months after this arrangement, the following key events occurred leading to the success of the competition:

- 1. December 2009 Mr. Quan Lam proposed the name World Mathematics Team Championship(WMTC) and designed the logo for WMTC. This name and logo were accepted and agreed upon by Mr. Zhou Guozhen to be used to represent WMTC. It was also proposed and accepted that the first WMTC was to be held in Beijing in November 24 to 28, 2010. Mr. Zhou and Mr. Lam would be the co-chairmen for WMTC.
- January 2010 Mr. Quan Lam outlined the competition rules, format, and, content for WMTC. WMTC would have three levels: Junior [mainly for primary school students], Intermediate [for middle school students], and Advanced [for high school students]. Each level consists of three rounds categorized as Individual, Team, and Relay. Students compete in teams of six.
- 3. March 2010 Mr. Quan Lam drafted a document that laid out the responsibility and standard of practice for proctors and a document describing the scoring method for graders and scorers.
- 4. July 2010 Both Mr. Zhou Guozhen and Mr. Quan Lam participated the international math competition conference WFNMC 2010 in Latvia, where Mr. Lam gave a speech about mathematics competitions. In his speech, he introduced WMTC to the international math competition coaches.

5. November 2010 - The first WMTC was successfully held. For this first competition, 194 Primary students, 151 Intermediate students, and 100 Advanced students attended, along with many parents, coaches, and observers from 10 regions/countries. The positive feedback from participants was a reflection that it was a successful and promising event. This lead to the decision to continue with the same format for WMTC 2011.

The success from the first year was due to Mr. Zhou Guozhen and his organization. They spent an incredible amount of time and effort to make the competition as successful as possible. It was universally agreed that very few organizations within the international math competition community could have better planning and execution of this event. Although other organizations(e.g. from Korea and Nanjing) had expressed interesting in hosting WTMC in their respective countries during the next few years, WTMC remained in Beijing for numerous reasons. The key reason was that WMTC was simply not mature or well organized enough for it to change its venue every year, transfer all the planning details, and properly train the new organizations to comply with the codes and regulations designed by Mr. Zhou and Mr. Lam. WMTC needed more time to fully develop into a smoothly run, well organized, and enjoyable experience for the participants.

After six years in Beijing, WMTC is now ready to move to other locations. As Korea was the first region that indicated interest to host WMTC four years ago, it will be the first location outside of Beijing to host WMTC. An international competition can only flourish when it is hosted in different regions year-by-year, as originally intended. With new venues, naturally changes will come to WMTC. We are hoping each participating region will give their honest feedback and suggestions so that WMTC can truly be a better run, multicultural, and vastly beneficial competition for students all over the world.

Quan K fam

History of WMTC

Quan K. Lam November, 2016

WMTC, Chairman

Welcome Message



Korea welcomes everyone who has visited for this year's World Mathematics Team Championship. Our respect and gratitude goes to the coaches and parents who have

worked hard and sent us great support as we prepared for the competition.

I had one goal as I organized the competition in Korea. It was to make sure all could feel comfortable during their stay in Korea as if it

was their home. I truly hope the time you spend in Korea will be a meaningful and unforgettable experience.

Finally I would like to once again send my sincere gratitude to everyone who has contributed to the successful organization of the event. Your support was a great source of motivation throughout the process.

I have witnessed the power of trust and confidence in the process of preparing for the competition.

I hope you have a great time in WMTC with your new friends from all around the world.

Patrick Yoo

November, 2016 Patrick Yoo

2016 WMTC, Korea Host WMTC Organizing Committee Members



6 • The 7th World Mathematics Team Championship

Welcome Message



Good afternoon, everyone. I am Sul Hoon, a member of our National Assembly.

I would like to warmly welcome all participants and coaches to the 7th World Mathematics Team Championship. I also sincerely congratulate Korean Gifted Students Evaluation Association and all the staffs for successfully hosting the event.

WMTC as a group competition has been gathering some of the best students of mathematics from all around the world for the past seven years. Unlike other math tournaments that focus on the competition among the students, WMTC places high value on cooperation and team synergy. Such qualities are much relevant to the modern academia where teamwork and cooperation are considered more seriously than individual performance. I believe all participants, throughout your experience at WMTC, will learn the value of communication and cooperation that lies beyond competition.

This year's WMTC is especially meaningful. The past six events of the championship had been held in Beijing, China, but this year WMTC is expanding its realm and is being held in Seoul, Korea. The number of participating countries has also significantly increased, so today over 600 participants from 20 different countries gathered here for this international event. I expect that WMTC will continue to grow into a bigger event and expand its influence throughout the world.

I am again very glad to celebrate the 7th event of WMTC with everyone here, and I hope all of you will have great experience from the competition and become the future leaders of the mathematical community.

Thank you very much.

November, 2016 Sul Hoon

November, 2016 Sul Hoon, Member of the National Assembly

http://wmtc.international

WTMC Organizing Committee • 7

2016 WMTC Special Lecture



James H. Cgoi, Ph.D.

Co-founder, Director of Research at Sabio Academy Former Director of e-Learning Technologies at Motorola Former Research Scientist at Siemens Medical Imaging

B.S. in Mathematics and Physics, University of Illinois at Chicago M.S. Electrical Engineering, University of Illinois at Chicago

Ph.D. Theoretical and Applied Mechanics, Northwestern University

James Choi

Stand-up Mathematician

You must have seen stand-up comedians. But have you seen a "stand-up Mathematician"?

You will see one at WMTC. No, it is not about performing mental math on stage (mainly because our stand-up mathematician is not fast). Our stand-up mathematician, Dr. James Choi, will slowly take you on a journey through the world of numbers.

All those numbers you thought you knew will come alive and tell you new stories. There will be suspense, intrigue, and mysteries. It is hard to believe mere numbers can do that. But you will see.

He will "twist" and "push" numbers right before your eyes, until those number turn into something that you never imagined possible. As for what that something is, you need to come to WMTC to find out.

He will end his talk with a story that will haunt you in your sleep until you find a solution. And you may never find a solution.



2016 WMTC Students Interaction



Junghwan Lee Cheongshim International Academy Member of KGSEA Math Circle



Byungho Jeong Cheongshim International Academy Member of KGSEA Math Circle

See you on Nov 24 9PM

Super relay 30 minutes

Two different teams are randomly paired up to create one mixed team. The mixed team should have 12 members on the team.

The rules of the Super relay are similar to those of the 'Relay Round', with only one difference. This difference is that there is no actual time limit on when you submit your answers. But, because there is no time limit, there will be a limit on the number of times you can submit your answers. The limit on the number of times you can submit your answers is 3 times.(You may not submit your answer after your third try.)

The faster you are able to get the answer to the last question correctly, the higher up the ranking you go.

A gift will be handed out to the first three teams that manages to get the answer correct.

2016 WMTC Students Interaction

The Random Quiz

20 minutes

'The Random Quiz' is consisted of approximately 40 random questions that test your trivia knowledge to the next dimension. The scale of randomness goes from "What is the largest rock in the world?" to "What is the average price of an Americano from Starbucks around the world?". (It's pretty random)

The first one to put their hand up gets the chance to answer the question, and if the person does not get the answer correctly, the chance moves on to the next person.

The more questions you can get correctly, the rewards get exponentially better!

Korean traditional 제기차기 (Jegichagi)

All the time remaining

When the two events above are finished, you can just chill out and talk with your friends

OR

You can come join us with a fun Korean traditional folk game called 제フネフ (Jegichagi). There will be a booth where you can freely enjoy yourself with this folk game, and if you manage to do 5 consecutive 'kicks' , you can pick up some free candy.



World Youth Mathematics League

What is WYML?

World Youth Mathematics League(WYML for short) is an annual international mathematics team competition for students in elementary and middle school. With the help of Dr. Quan Lam, Prof. David Brown, and Mr. Patrick Yoo, high school students from diverse math circles all around the world have been organizing WYML since 2014; we are now preparing for our 4th year.

In the competition, participants from Korea and U.S find sites at their respective nation and region to spend a day solving math problems as a team and having fun. WYML is usually held during the last week of March, with a week's leniency to account for the time differences and diverse circumstances.

Our Vision

WYML's visions are very simple. We want to help young students find the joys of a subject that is often viewed as "dry, boring, and individualistic." By exposing students to problems that are not only creative, but also those that require their teamwork to solve, we hope that students will realize how fun math is. We also hope to provide more opportunities for younger students to participate in such competitions by reducing the participation cost and having sites in each country to participate in. Finally, we hope that through WYML, students will be able to overcome the barrier of race, nationality, and language to open up grounds for international exchange.

Participating in WYML

There are multiple ways to participate in WYML:

Elementary and middle school students can form teams of 2-3 people and divide into Junior and Intermediate Section depending on their grade to participate on the day with their friends.

High school students and coaches can join the WYML Organizing Committee to host WYML in their region. As of right now, we have one site in Korea run by KGSEA Math Circle and two sites in the U.S, run by the San Diego Math Circle and BCA Math Circle. We welcome any math circles to join us.

For more information, please visit wyml.orgoremailusatinfo@wyml.org to join the WYML Organizing Committee.

Team List

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Team Number	Division	Nationality	Team Name	
AD1	ADVANCED	Australia	CITIPOINTE CHRISTIAN COLLEGE BRISBANE	
AD2	ADVANCED	India	INDIA Advanced	
AD3	ADVANCED	KOREA	HAFS M4 Team A	
AD4	ADVANCED	KOREA	HAFS M4 Team B	
AD5	ADVANCED	KOREA	Bugil A	
AD6	ADVANCED	KOREA	CSIA Team A	
AD7	ADVANCED	KOREA	KMLA	
AD8	ADVANCED	KOREA	TARS	
AD9	ADVANCED	KOREA	DDAK	
AD10	ADVANCED	KOREA	РАТО	
AD11	ADVANCED	KOREA	CRUCIBLE	
AD12	ADVANCED	KOREA	GADDIEL	
AD13	ADVANCED	KOREA	CSIA Team B	
AD14	ADVANCED	MALAYSIA	E MATHEMATICS OLYMPIAD SYSTEM	
AD15	ADVANCED	Philippines	Philippines Advanced A	
AD16	ADVANCED	Philippines	Philippines Advanced B	
AD17	ADVANCED	Philippines	Philippines Advanced C	
AD18	ADVANCED	Taiwan	Team Taiwan Senior High School	
AD19	ADVANCED	Thailand	Thai_Alternate	
AD20	ADVANCED	USA	BCA1	
AD21	ADVANCED	USA	BCA2	
AD22	ADVANCED	USA	BCA3	
AD23	ADVANCED_Alternate	Hong Kong/Japan/Korea	Alternate A	
AD24	ADVANCED_Alternate	Egyptian/USA	Alternate B	
AD25	ADVANCED_Alternate	MALAYSIA/THAI/TAIWAN	Alternate C	
IM1	Intermediate	Australia	Australia - Penrhos College (1)	
IM2	Intermediate	Australia	CITIPOINTE CHRISTIAN COLLEGE BRISBANE	
IM3	Intermediate	Bulgaria	Sofia SMG	
IM4	Intermediate	CHINA	CHINA INTERMEDIATE	
IM5	Intermediate	Egyptian	EGYPTIAN Intermediate	
IM6	Intermediate	Indonesia	Sampoerna Academy Medan (Indonesia)	
IM7	Intermediate	INDONESIA	IMTC TEAM A	
IM8	Intermediate	Indonesia	Team Indonesia	
IM9	Intermediate	IRAN	IRAN Intermediate A	
IM10	Intermediate	IRAN	IRAN Intermediate B	
IM11	Intermediate	IRAN	IRAN Intermediate C	
IM12	Intermediate	IRAN	IRAN Intermediate D	
IM13	Intermediate	IRAN	IRAN Intermediate E	

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Team Number	Division	Nationality	Team Name	
IM14	Intermediate	IRAN	Intermediate_Alternate	
IM15	Intermediate	KOREA	DWIM	
IM16	Intermediate	KOREA	CI dolphins	
IM17	Intermediate	KOREA	J4F	
IM18	Intermediate	MALAYSIA	E MATHEMATICS OLYMPIAD SYSTEM	
IM19	Intermediate	Philippines	Philippines Intermediate A	
IM20	Intermediate	Singarpore	Hwacheong INTERMEDIATE	
IM21	Intermediate	Taiwan	Taiwan A	
IM22	Intermediate	Taiwan	Taiwan B	
IM23	Intermediate	Thailand	THAI Team A	
IM24	Intermediate	USA	USA Intermediate A	
IM25	Intermediate	Uzbekistan	Fortune	
IM26	Intermediate	Vietnam	Interm. VN Team A	
IM27	Intermediate	Vietnam	Interm. VN Team B	
IM28	Intermediate	Vietnam	Interm. VN Team C	
IM29	Intermediate_Alternate	Australia Perth/Hong Kong/KOREA	Alternate A	
IM30	Intermediate_Alternate	Kazakhstan/USA	Alternate B	
IM31	Intermediate_Alternate	Myanmar/Vietnam	Alternate C	
JR1	Junior	Bulgaria	Sofia SMG Junior	
JR2	Junior	India	INDIA Junior A	
JR3	Junior	India	INDIA Junior B	
JR4	Junior	Indonesia	Merlion School Surabaya (Indonesia)	
JR5	Junior	Indonesia	Team Indonesia	
JR6	Junior	IRAN	IRAN Junior A	
JR7	Junior	IRAN	IRAN Junior B	
JR8	Junior	KOREA	CLAVIS	
JR9	Junior	Myanmar	T & H Junior (A)	
JR10	Junior	Philippines	Philippines Junior	
JR11	Junior	Singapore	Singapore International Math Contests Centre	
JR12	Junior	Thailand	THAI Team A	
JR13	Junior	Thailand	THAI Team B	
JR14	Junior	Vietnam	Junior VN Team A	
JR15	Junior	Vietnam	Junior VN Team B	
JR16	Junior	Uzbekistan	Algorithm	
JR17	Junior_Alternate	Egyptian/EGYPT_USA	Alternate A	
JR18	Junior_Alternate	Hong Kong/USA	Alternate B	
JR19	Junior_Alternate	Myanmar/Uzbekistan/Vietnam	Alternate C	



Singapore International Math Olympiad Challenge (SIMOC) is a unique concept of mathematics competition which not only tests your ability to solve mathematical problems on pen and paper but also tests your ability to work as a team to play interactive mathematical games and solve puzzles. SIMOC gives students an opportunity to compete with top mathematical talents from around the world and learn from each other as a team. Individual and team recognition awards are up for grabs.

SIMOC consists of three categories:

- Math Olympiad Contest for Grade 2 to 10 students
- Maths Warriors Competition (team based)
 - Mind Sports Challenge (team based)

For more details please visit WWW.Simoc.Sg

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Math

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Science(Physics)

Main Topic : "The Nature of Light"



What

Math Science Camp is an intensive one week program for junior high school students.

Who

Students who are born between 2001 to 2004, from around the world

) Why

To foster future mathematician, scientists and engineers. To discover mathematical phenomena in everyday life. To cultivate curiosity and critical thinking abilities.

Where

Namsan Twin City Tower in Seoul

Korean Gifted Students Evaluation Association E-mail:admin@kgsea.org

http://wmtc.international

-Camp Dates -

Math Session - 2016. DEC. 28 ~ 2017. JAN. 1 Science (Physics) Session - 2017. JAN.1 ~ 5 In Korea (UTC+9)

-Registration Period & Tuition -

Early : ~2016. NOV. 15

(\$900 for each session)

Regular : ~2016. DEC. 20

(\$1,000 for each session)

- All participants will be provided with meals and accommodation during the camp period 4 nights and 5 days.
- All participants will use 3-students per room at the dormitory.
- Parents or Guardian of participants can accompany the participants and can even take classes with the students.
- There will be a special tour for parents and guardians.



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2016 7th World Mathematics Team Championship

2016 WMTC Tour Itinerary

Т	itle	Date	Time	Group	Schedule	
E: Te	xtra our	Nov 22	Afternoon All day	Australia Brisbane USA_BCA	National Museum of Korea Korean Folk Village	
E: T	xtra our	Nov 23	Morning Afternoon All Day	Myanmar Australia Penhors/Bulgaria Australia Brisbane/USA_BCA	Heyri Village National Museom of Korea The 3rd Tunnel	
Reş	gular our	Nov 25	9:00 am - 4:00 pm	All International Participants	Everland	
Reį	gular our	Nov 26	8:00 am - 9:30 am 10:00 am - 12:00 am 12:30 pm - 1:30 pm 2:00 pm - 4:30 pm 4:30 pm - 5:30 pm 5:30 pm - 7:30 pm	All International Participants	Move to COEX SM Town Hollogram Musical Lunch The War Memorial of Korea Move to Entas hall Dinner	
E	xtra our	Nov 27	8:00 am - All day 9:00 am - 7:00 pm	Australia Brisbane/Egypt Myanmar	Seoul City Tour Bus One Mount Snow Theme Park	

2016 7th World Mathematics Team Championship

637 Participants 75 Teams 20 Countries









SPONSORS





Hotel Information

Ramada Songdo Hotel 812 DongChun 1 Dong Yeonsugu, Incheon, Incheon Gwang' yeogsi Local : 032-832-2120 Overseas : +82-32-832-2120

StellaMarina Hotel Incheon

Stella Marina Hotel6F, 51 46-beon-gil Nonhyeon-ro, Namdong-gu, Incheon, Korea Local : 032-426-1100 Overseas : +82-32-426-1100