



3rd BELT AND ROAD TEENAGER & TEACHER WORKSHOP 2019



24 – 30 SEPTEMBER 2019

PREPARED BY
ASHARINA FIZA BT AHMAD
MAKTAB RENDAH SAINS MARA
TRANSKRIPAN, PULAU PINANG



INTRODUCTION

To support the Belt and Road Initiative – China's proposal to build a Silk Road Economic Belt and a 21st Century Maritime Silk Road, in cooperation with related countries - unveiled by Chinese President Xi Jinping, China Association for Science and Technology and Ministry of Science and Technology of China have jointly launched the Belt and Road Teenager Maker Camp & Teacher Workshop annually since 2017. This event aims to strengthen cross-cultural exchange, promote international understanding and inspire innovation in young generation.

The camps give students the opportunity to cooperate with the best of their age at international level, to share ideas and study cutting-edge knowledge in science labs of top schools in China through hands-on experience and teamwork under guidance of experienced teachers.

Science education forum and teacher workshop are held for teachers to share educational practice of different countries and learn skills of stem education.

Belt and Road Teenager Maker Camp & Teacher Workshop also includes diversified cultural and scientific programmes including Chinese cultural experience and various visits. We hope that more and more young scientists from different parts of the world could join in the camps to engage with science and technology, experience various cultures and traditions and build a friendship for lifetime through this wonderful event.

ABOUT

Hosted by

- China Association for Science and Technology (CAST)
- Ministry of Science and Technology of the People's Republic of China (MOST) People's Government of Guangxi Zhuang Autonomous Region

Organised by

- Children & Youth Science Center of CAST (CYSC)
- China Association of Children's Science Instructors (CACSI) Guangxi Association of Science and Technology (GAST)
- Department of Science and Technology of Guangxi Zhuang Autonomous Region Department of Education of Guangxi Zhuang Autonomous Region
- Nanning Municipal Government

Supported by

- IAP Science Education Programme (IAP SEP)
- Economic Cooperation Organization Science Foundation (ECOSF) Network of African Science Academies (NASAC)

Co-organised by

- Guangxi Youth Science and Technology Center Guangxi Science and Technology Museum
- Guangxi Association for Youth Science and Technology Education Nanning No.2 High School

ACCOMMODATION

Howard Johnson CAEXPO Plaza Nanning
No.98, Zhuxi Road, Qingxiu District, Nanning,
Guangxi
Tel: +86 771 6706666



VENUES

- Nanning No.2 High School No. 66, Yunjing Road, Qingxiu District, Nanning, Guangxi
- Guangxi Science and Technology Museum to the Hotel
- Anthropology Museum of Guangxi
- Fantawild Asian Legend
- Howard Johnson CAEXPO Plaza Nanning

MALAYSIAN DELEGATION

COMMITTEE

1. **Dato' Ir Dr Lee Yee Cheong**
 - Chairman UNESCO International Science Technology Innovation for South-South Cooperation
 - ASM Fellow
2. **Dato' Dr Sharifah Maimunah Binti Syed Zin**
 - Coordinator of STEM unit UNESCO International Science Technology Innovation for South-south Cooperation
 - ASM Fellow
3. **Datin Sri Hajjah Norzamani Binti Abdol Hamid**
 - Director of Private Education Division, Ministry of Education
4. **Datin Maharom Binti Mahmood**
 - Former Head of History Sector, Curriculum Development Division, Ministry of Education
5. **Dr Rusilawati Binti Othman**
 - Head of Science and Mathematics Sector, Curriculum Development Division, Ministry of Education
6. **Mdm Zainon Binti Abd Majid**
 - Head of Primary Science Sector, Curriculum Development Division, Ministry of Education

SUPERVISOR

1. **Mdm Asharina Fiza Binti Ahmad**
 - Design and Technology Teacher, MARA Junior Science College
2. **Miss Rohaya bt Husny Pahmy**
 - Research Officer Sains@USM, Malaysian Science Universiti

PARTICIPANTS

1. Muhammad Irfan Haikal Bin Mohd Firdaus
2. Muhammad Hazim Aiman Bin Ahmad Nazri
3. Muhammad Alif Muazzam Bin Mohd Kauli

- Form four students, MARA Junior Science College (MRSM)



Our international journey
began from KLIA2



Participants with their volunteer,
Ms Yonglian Qin



Us in front of our Hotel,
Howard Johnson CAEXPO Plaza



During Opening Ceremony with Malaysia
Consul in Guangxi, China; Mr Airi

PROGRAMMES FOR STUDENTS

DAY 1: 24 SEPTEMBER 2019 (TUESDAY)

TIME	ACTIVITY	LOCATION	VENUE
All-day	Registration	Lobby	Hotel
17:00-19:30	Dinner and Ice-breaking Activity	Grand Ballroom, 1st floor	
20:00-21:30	Opening Ceremony Rehearsal (Students who need to be on the stage)	Lecture Hall No.1	Nanning No.2 High School



Opening Ceremony at Nanning High School No 2



Officially launched by distinguished committee members

DAY 2, 25 SEPTEMBER 2019 (WEDNESDAY)

TIME	ACTIVITY	LOCATION	VENUE
09:30-09:50	Group Photo	Square in front of Qitian Building	Nanning No.2 High School
10:00-10:50	Opening Ceremony	Lecture Hall No.1	
10:50-11:50	Keynote Speech		
14:00-17:00	Tour	Guangxi Science and Technology	



Distinguished guest, committee, supervisors and participant Group Photo



Opening remark by Mr. Meng Qinchai, Executive Secretary of CAST

DAY 3, 26 SEPTEMBER 2019 (THURSDAY)

TIME	ACTIVITY	LOCATION	VENUE
09:00-17:30	Team Project	Classrooms	Nanning No.2 High School
19:00-21:00	<p>Viable Project</p> <p>Group A will include students from Video Making, Creative Programming, Intelligent Robot and the Art of Electronic.</p> <p>Group B will include students from Colorful Chemistry, the Art of Printing, Airplane Model and the Art of Model</p>	<p>Group A, Lecture Hall No.3</p> <p>Group B, Zhitong Building, Ladder Classroom</p>	

- **Team Project Presentation and Pre-reviewing**

Under each subject, teams will do their presentation under the guidance of their instructor. The instructor of each subject will pick up teams who may enter the reviewing round and compete for the Best Maker.

- **Team Project Presentation and Reviewing**

Each team will have 10 minutes to present their project and answer questions from the judges with PPT. The PPT should be in English and contain information as below: project name, team number, selected subject (one of the five), list of team members and task allocation, scientific principles related to the project, and other information you would like to show to the judges. This year, each team's presentation is specially required to add some contents given by the Ukrainian experts. For example, project orientation to the solution of specific problem (globally, for society, for individual or group of individual).



Glimpse of week-long activities e.g. various scientific tasks in the fields of intelligent robots, colourful chemistry, model world, electronic art and video making.

DAY 4, 27 SEPTEMBER 2019 (FRIDAY)

TIME	ACTIVITY	LOCATION	VENUE
09:00-12:00	Team Project	Classrooms	Nanning No.2 High School
13:30-17:00	Team Project Presentation and Pre-reviewing	Classrooms	
18:30-22:00	Buffet and Cultural Night	Grand Ballroom, 1 st Floor	Hotel



With Costa Rica Performers



Students performed Zapin Dance



DAY 5, 28 SEPTEMBER 2019 (SATURDAY)

TIME	ACTIVITY	LOCATION	VENUE
09.30 – 11.30	Tour	Anthropology Museum of Guangxi	
14:00-18:00	Tour	Fantawild Asian Legend	



Tour at Fantawild Asian Legend

Siamese dancers



DAY 6, 28 SEPTEMBER 2019 (SUNDAY)

TIME	ACTIVITY	LOCATION	VENUE
09:00-12:00	Team Project Presentation and Reviewing	Lecture Hall No.3	Nanning No.2 High School
16:00-17:30	Awarding Ceremony	Lecture Hall No.1	
18:30-20:30	Farewell Banquet	Grand Ballroom, 1 st Floor	Hotel



Lanang, Hazim and Zyad



Irfan & his teammate, Jirapak



Alif's Victory Shot



Appointed as Judge

DAY 7, 29 SEPTEMBER 2019 (MONDAY)

TIME	ACTIVITY	LOCATION	VENUE
All-day	Departure		



Malaysian and Pakistan Delegation



With Mr Haithem and Ms Zhang



Ms Rohaya, Mdm Aizhan and I



Dr Saudhakar, Ms Kyaw and Mdm Aizhan

PROGRAMMES FOR SUPERVISORS

DAY 3, 26 SEPTEMBER 2019 (THURSDAY)

TIME	ACTIVITY	LOCATION	VENUE
09:00-11:30	Science Education Forum (Open Forum with Simultaneous Interpretation)	Lecture Hall, 3rd floor of Office Building	Guangxi Science and Technology Museum
13.30-15:30	Workshops Group A at 501, Group B at 503	General Technology Classroom	Nanning No.2 High School
15:30-17:30	Workshops Group A at 503, Group B at 501,	General Technology Classroom	

Science Education

Forum Speakers:

1. **Ms. Zeng Zheng**, Deputy Director of Division of Teacher Development, Children & Youth Science Center of CAST, China

Mr. Liu Xin, Sci-class

Title: For the future we share: The Practice of Informal Science Education & Professional Development of Instructors in China

2. **Ms. Mendez Calvo Raquel**, Head of the Academic and Professional Evaluation office, CFIA, Costa Rica
Title: CFIA- Steam Initiatives

3. **Ms. Zhekeyeva Aizhan**, Co-Founder and President of Kaz Robotics Federation RPA, Kazakhstan
Title: Educational Robotics in Kazakhstan

-
4. **Ms. Meeruppe Gamage Lakshmi Ratnamala**,
Sri Lanka Title: Science Education in Sri Lanka
 5. **Mr. Vitalii Lisovyi**, Project Manager of Junior Academy of
Sciences of Ukraine
Title: Business Incubator of Junior Academy of Sciences
 6. **Ms. Rohaya Husny Pahmy**, Research Officer of Universiti Sains
Malaysia
Title: University-Industry-Community Collaboration in STEM
 7. **Prof. Laurentiu Dan Milici**, vice president of programmes for youth, Cygnus
Scientific Society - UNESCO Center, Romania
Title: Most important projects carried out by Cygnus Scientific Society -UNESCO
Center
 8. **Mr. Hatem Slimane**, President of Tunisian Association for Future Of Science
and Technology
Title: STEAM outside classroom as an amazing experience



MS Rohaya presenting her speech



Science Education Forum

DAY 4, 27 SEPTEMBER 2019 (FRIDAY)

TIME	ACTIVITY	LOCATION	VENUE
09.00 – 12.00	Workshops Group A at 501, Group B at 503,	General Technology Classroom	Nanning No.2 High School
13:30- 17:00	Workshops Group A at 503, Group B at 501,	General Technology Classroom	
18:30- 22:00	Buffet and Cultural Night	Grand Ballroom, 1st Floor	Hotel

Teacher's Workshop

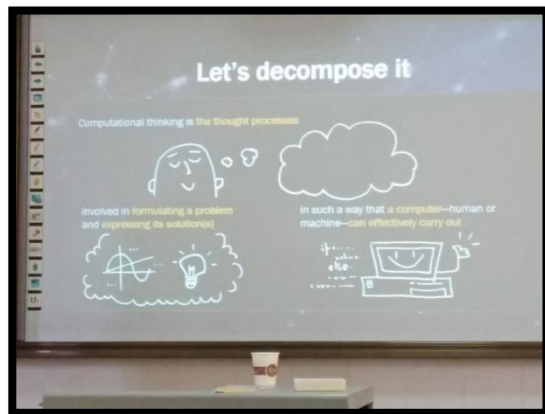
Location: General Technology Classroom 501 and General Technology Classroom 503, Qitian Building

Topic1: Computational Thinking

Workshop Instructor: Mr. Xin Liu

(Science Class)

Computational thinking is a thinking process that could help teachers and students to understand complex computer science concepts and use coding skills for problem solving. In this workshop we will learn the fundamental methods of computational thinking and see how to use them to design programmes to play Go game, tic-tac-toe and even an artificial intelligence solution.



Everything can be design to program.



Ms Rohaya, Mr Xin Liu and me.

Topic2: PBL Course Design on Environmental Protection Instructors: Ms. Rachel Zhang/Mr. Frank Wang (DF Robot)

“Protecting Mother Earth” is more than just words but actions. Whether it is the UNESCO Sustainable Development Goals or the recent rubbish classification movement in China, we are all aware of the importance to be the “Earth Guardians” to use sustainable approach when it comes to development. With the advancement of Internet of Things (“IoT”) and artificial intelligence, we now have more solutions to environmental protection. In this workshop, we will adopt Project Based Learning (“PBL”) course design with the theme of “Recycling Resources”, combining open source hardware such as Micro:bit and MaQueen robot to have real hands-on experience in creating innovative projects. The participants will be divided into groups to design the solutions for resource recycling, and finally present the prototypes.

In this workshop, we will be able to:

- ❑ Familiar with the five stages of PBL design
- ❑ Experience multiple Micro:bit based fun programming projects
- ❑ Design a MaQueen robot to run, patrol, sing and dance
- ❑ Understand simple IoT technology with fun projects
- ❑ Through teamwork, combined with the knowledge and tools learned, design achievable solutions to help “Recycling Resources” 19



Hands on to program Maqueen



Mr Frank Wang, DF Robot instructor

Topic3: Getting Started With STEM: An Example Lesson Demonstrating the Process and Language of Instruction Instructor: Ms. Hayley Brown (iSTEM Australia)

Often as educators often we fall into the trap of wanting to give our students the answers. In this workshop we investigate ways to increase student engagement through two simple engineering tasks. And perhaps have some fun and excitement on the way.

In this workshop we learnt that:

- ☐ Participate as a student in a two-stage engineering challenge
- ☐ Construct and launch a simple paper air propelled rocket
- ☐ Discuss and share with colleagues' techniques that can be used to further engage students
- ☐ Be introduced to ways to increase student awareness of learning
- ☐ Be introduced to ways to promote your school within the local community



Group A team members



Dr. Kenneth Raymond Silburn

Topic4: The Interdisciplinary and Project-Based Course Design for Electronics Learning. Instructor: Dmitry Maslov (Shenzhen Chaihuo Maker Education)

Developed from real life and with the mathematical knowledge as the basis, the workshop will show the teachers a vivid model of the interdisciplinary and project-based course design. The teachers can plan a lesson outline based on this model. As a result, they will understand how to integrate scientific subjects to traditional subjects and guide students to seek “hows” and “whys” in daily life.

Part 1: Introduction of Grove Zero modules and Code craft

Part 2: Scientific experiment based on mathematical

knowledge Part 3: How to build a project-based lesson



Ms Rohaya and I program the modules



Our team members with Grove Zero instructor

AWARD WINNING

1. Best Maker Award

Best Maker Award recognizes the best among the outstanding students from around the world who participate in Belt and Road Teenager Maker Camp & Teacher Workshop. The winning groups are selected based on their presentation.



The Best Maker
Muhd Hazim Aiman bin Mohd Nazri
Video Making



2. Best Presentation Award

Best Presentation Award recognizes the second best among the outstanding students from around the world who participate in Belt and Road Teenager Maker Camp & Teacher Workshop. The winning groups are selected based on their presentation.



The Best Presentation
Muhd Irfan Haikal bin Mohd Firdaus
Video Making



3. Best Teamwork Award

Best Teamwork Award encourages the great efforts and teamwork of outstanding students from around the world who participate in Belt and Road Teenager Maker Camp & Teacher Workshop.



The Best Teamwork
Muhd Alif Muazzam bin Mohd Kauli
Video Making



OUR STORY



“This is my 1st ever international level workshop attended. It was so exciting meet with amazing personalities around the world. We shared passion and enthusiasm in nurturing STEAM to our students. I learnt how to program, make codes and fun technologies device which I can apply during my daily teaching and learning process. The key is students should learn to be more creative and imaginative while seeking for problem solving. My goal next is to nurture more students mathematically and technologically literate. Many thanks to ASM, USM and MARA for giving this precious opportunity for me”.

**ASHARINA FIZA BT AHMAD
MARA JUNIOR SCIENCE
COLLEGE**

“It was so fun and quite frustrating at the same time. We had to really concentrate! I know now that every maker have to keep making prototype creatively until they get it right”.

**MUHD IRFAN HAIKAL BIN MOHD
FIRDAUS MARA JUNIOR
SCIENCE COLLEGE**



“This is very amazing camp for teenagers and teachers. It helps me build my confidence and I learnt new things and new friends. So, I think this camp should be continued so that more students and teachers can take advantage from this”.



**MUHD ALIF MUAZZAM BIN MOHD
KAULI MARA JUNIOR SCIENCE
COLLEGE**

“I hope continuous programmes like this will take place every year as it provides a great opportunity for students. It's great inspiration for us and I feel grateful. I wished we could stay longer (2 weeks ^-^). It's so fast!”.

**MUHD HAZIM AIMAN BIN MOHD
NAZRI MARA JUNIOR
SCIENCE COLLEGE**



GRATITUDE

My group and I would like to take this opportunity to express our gratitude to Akademi Sains Malaysia (ASM), Universiti Sains Malaysia (USM) and Majlis Amanah Rakyat for kindly agreeing to our participation and to funding our attendance at the 3rd Belt and Road Teenager Maker Camp and Teacher Workshop. We are most grateful indeed for this wonderful opportunity. I am certain that the event will not only be a valuable learning experience for us but be very useful to apply the knowledge in our daily learning and teaching life.



AKADEMI SAINS MALAYSIA



UNIVERSITI SAINS
MALAYSIA



MAJLIS AMANAH RAKYAT