Hong Kong STEM Olympiad 2016 Briefing Session

Organizers (HKIEd / EdUHK)

科學與環境學系
Department of Science and Environmental Studies

Department of **Mathematics** and **Information Technology**

CEES Centre for Education in Environmental Sustainability 可持續發展教育中心

Co-organizers

SME

香港教育城 HKedCity

The Academy of Sciences of Hong Kong 港科院

HK工E THE HONG KONG INSTITUTION OF ENGINEERS 香港工程師學會
Environmental Division 環境分部

Major Supporters

AiTLE

行政長官卓越教學獎教師協會
Chief Executive's Award for Teaching Excellence Teachers Association

環保協進會 Environmental Association

教育局 Education Bureau

HKACE 香港電腦教育學會 The Hong Kong Association for Computer Education

WWF

GREEN COUNCIL 環保促進會

Hong Kong STEM Olympiad 2016 Briefing Session

Time	Items
16:30 - 17:00	Introduction to STEM Olympiad • Programme Rundown • Online Application
17:00 - 17:45	Assessment framework Sample questions
17:45 - 18:15	Q & A

Hong Kong STEM Olympiad 2016

Date:
8th July, 2016 (Friday, whole day)

Venue:
The Hong Kong Institute of Education (Tai Po Campus)

Organizing Committee

	Staff-in-charge
Advisors	Dr. CHAN, Wai Hong Daricks (Head of MIT) Dr. LEE, Yeung Chung (Head of SES) Prof. SO, Wing Mui Winnie (Director of CEES)
Chair & Deputy Chairs	Prof. YEUNG, Yau Yuen (SES) Dr. SONG, Yanjie (MIT) Mr. CHENG Pat Leung, Victor (HKedCity)
Academic coordinators /subject experts (Questions)	Math - Dr. CHAN, Wai Hong Daricks; Dr. CHEUNG, Ka Luen; Dr. MAN, Yiu Kwong ICT - Dr. WONG, Ka Wai Gary; Dr. SUN, Daner Phy - Dr. CHAN, Man Ho; Dr. YEUNG, Chi Ho; Prof. YEUNG, Yau Yuen Chem - Dr. HO, Wing Kei; Dr. LEUNG, Chi Fai Bio - Dr. CHEANG, Chi Chiu; Ms LEE, Hoi Man Sarah
Other internal or external members	Mr. LAU Kwok Leung (HKASME); HKEdCity
Secretariat	Ms Melissa Tong ; Ms Cici Luo

Objectives

It is a grand interschool event for informal learning of STEM as initiated by HKIEd/EdUHK in response to the recommendations and strategies for promoting of STEM education among schools in Hong Kong as proposed by the EDB/Curriculum Development Council in 2015.

- To provide senior secondary school students with informal learning opportunities to deepen their understanding of STEM, and to enhance their interest in pursuing further study in STEM subjects and career; and

- To create an atmosphere conducive to the teaching and learning of STEM in secondary schools, and to heighten teachers' and students' awareness of the importance of STEM education.

Features:

The STEM Olympiad consists of two parts:

- Part I: "STEM-related Knowledge Challenge （知識大檢閱）"
  - Students will participate on both individual and team basis to demonstrate their knowledge in relation to STEM subjects.
- Part II: "Innovations in Practice (創新實踐大挑戰)"
  - Students will work in teams to solve a set of problems and create an innovative design, artefact or solution that requires integration and application of STEM related knowledge and skills.
- *NO prior training or preparation is required. Students will come for an enjoyable event to*
  - a) *Acquire new knowledge, skills and insights into STEM education through participating in the competition;*
  - b) *Reflect on their future orientation with respect o STEM education and career; and*
  - c) *Be rewarded with medals, trophies, prizes (coupons and/or mobile devices) and certificates of High Distinction, Distinction, or Credit*

Organizers

HKIEd

- Department of Science and Environmental Studies (SES)
- Department of Mathematics and Information Technology (MIT)
- Centre for Education in Environmental Sustainability (CEES)

(The event is being jointly organized by SES, MIT and CEES of HKIEd)

Co-organisers

- Hong Kong Association for Science and Mathematics Education (HKASME)
- Hong Kong Education City Limited (HKedCity)
- The Academy of Sciences of Hong Kong (ASHK)
- The Hong Kong Institution of Engineers (HKIE)

Major Supporters

- Association of I.T. Leaders in Education
- Chief Executive's Award for Teaching Excellence Teachers Association
- Environmental Association
- Education Bureau of HKSAR Government
- Hong Kong Association for Computer Education
- WWF-Hong Kong
- Hong Kong Technology Education Association
- Green Council

Eligibility for application

- S.5 & S.6 students could form teams of **four** to participate in the event. Each team could comprise four S.5 and/or S.6 students in any combination.

- Each team should comprise students taking the subjects of **Physics, Chemistry, Biology and ICT** so that the team should be able to solve problems related to all these four areas. All members are expected to have studied core mathematics.

- All schools are invited to nominate **one to four teams**.

- Priority will be given to schools that nominate teams comprising S.6 students.

Rundown of the Competition:

Rounds	Items	Type of question
Morning Session Part I: Knowledge Challenge	Part I (a): Individual Knowledge Challenge Members of each team to answer a set of questions in one of the four areas (Physics, Chemistry, Biology, or ICT)# respectively	MC questions*
	Part I (b): Team Knowledge Challenge Each team to answer mathematics problems related to all the four areas (Physics, Chemistry, Biology, and ICT)	MC questions*
Afternoon Session Part II: Innovations in Practice	Part II: Innovations in Practice Each team to solve a selected problem and create an innovative design, artifact or solution by integrating and applying STEM knowledge and skills	Hands-on problem solving and design

* Questions in both English and Chinese will be provided

Major Prizes and Awards (Tentative):

- **Individual awards** (gold, silver and bronze medals) for three students with the highest ranking in each subject (Physics/ Chemistry/ Biology/ ICT) in Part I(a)

- **Team awards** (champion trophies for schools plus gold, silver and bronze medals for individuals) for Parts I(b) and II

- **Grand prizes** (coupons and/or mobile devices) for team members of the overall champion in Part II

- **Certificates** of High Distinction, Distinction, or Credit for all individuals achieving the standards required

Important Dates:

Date	Item
20 May 2016	Briefing of Hong Kong STEM Olympiad 2016
09 May - 08 June 2016	Online Application
08 July 2016	Hong Kong STEM Olympiad 2016

Enquiry:

- Website: http://www.ied.edu.hk/stemo
- Email: stemo@ied.edu.hk

Chairperson of Organising Committee

- Professor Yeung Yau Yuen
- Tel: (852) 2948 7650
- Email: yyyeung@ied.edu.hk

Hong Kong STEM Olympiad 2016

Schedule (Tentative)

Slide **HUNTER**

Time	Event
9:00-9:30	Registration
9:30-10:00	Opening Ceremony & Briefing
10:00-11:30	A.M. Session *(Part I)*
11:30-13:00	Lunch
13:00-13:40	Mini Lecture & Result release
13:45-16:15	Finals *(Part II)*
16:15-16:45	Break & Survey Time
16:45-17:15	Winners announced & Closing Ceremony

Other Activities for participants

In STEM Olympiad day, the following activities will be provided to teachers and/or students

- Sharing talk/ workshop by HKIEd STEM educators or school STEM teachers
- Demo/workshops by relevant companies or professional organizations
- Ecotour
- Six Arts (六藝五常嘉年華)
- Exhibition

A.M. Session (Part I(a))

Part I(a): Individual Knowledge Challenge

Task	Members of each team to answer a set of questions in one of the four areas (Phy, Chem, Bio or ICT)
Type of questions	MC questions
Method of assessment	Subject ranking based
Award	1st, 2nd, 3rd (by subject)
Duration	_40 mins_

A.M. Session (Part I(b))

| Part I(b): Team Knowledge Challenge	
Task	Each team to answer mathematics problems related to all the four areas (Phy, Chem, Bio and ICT)
Type of questions	MC questions
Method of assessment	Subject ranking based
Award	1st, 2nd, 3rd (Team Award)
Duration	_40 mins_

We will select 40-50 top teams as based on the following formula (normalized scores) :

Part I (a) : S um of 4 team members

+

2 X Part I (b) : Whole team

→

40-50 top teams
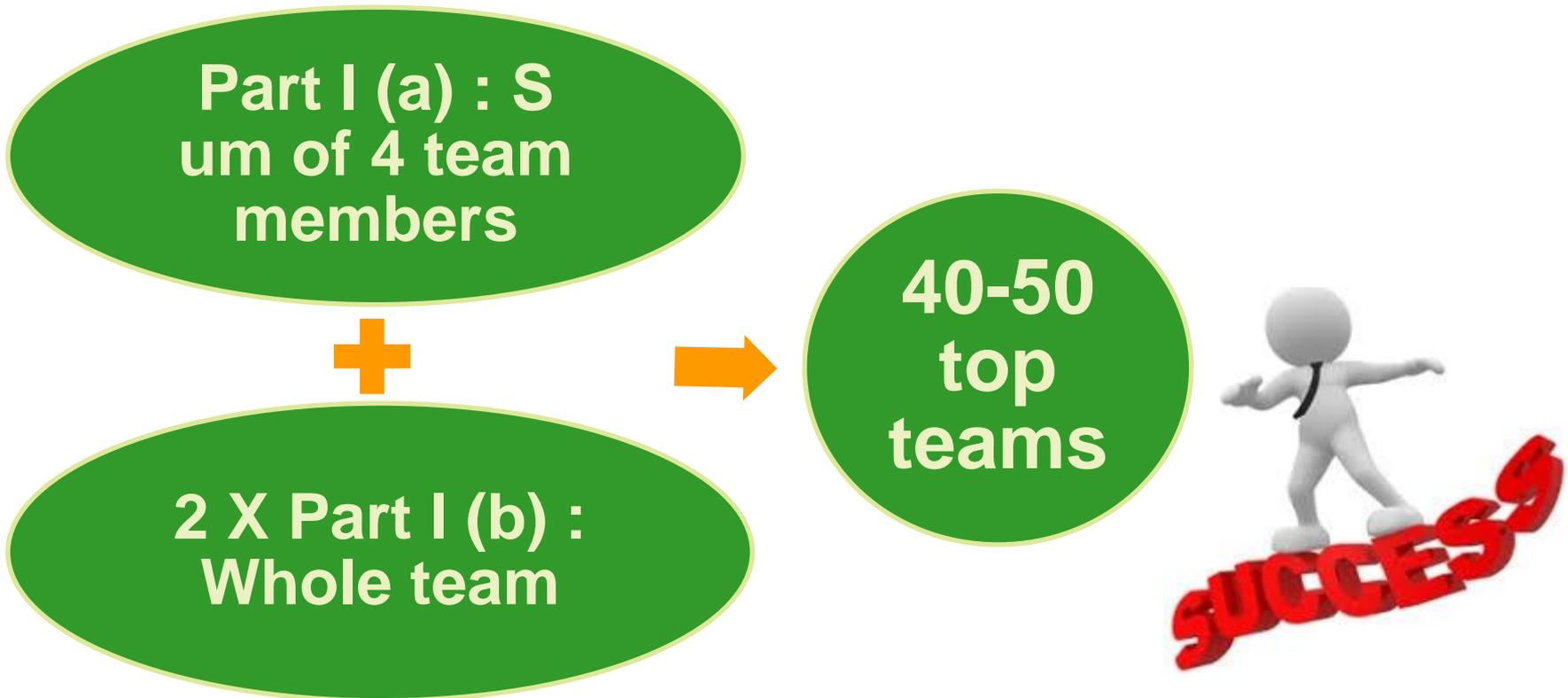
The list of finalists will be announced after the lunch time.

Slide **HUNTER**

- Sports Hall and Conference Hall
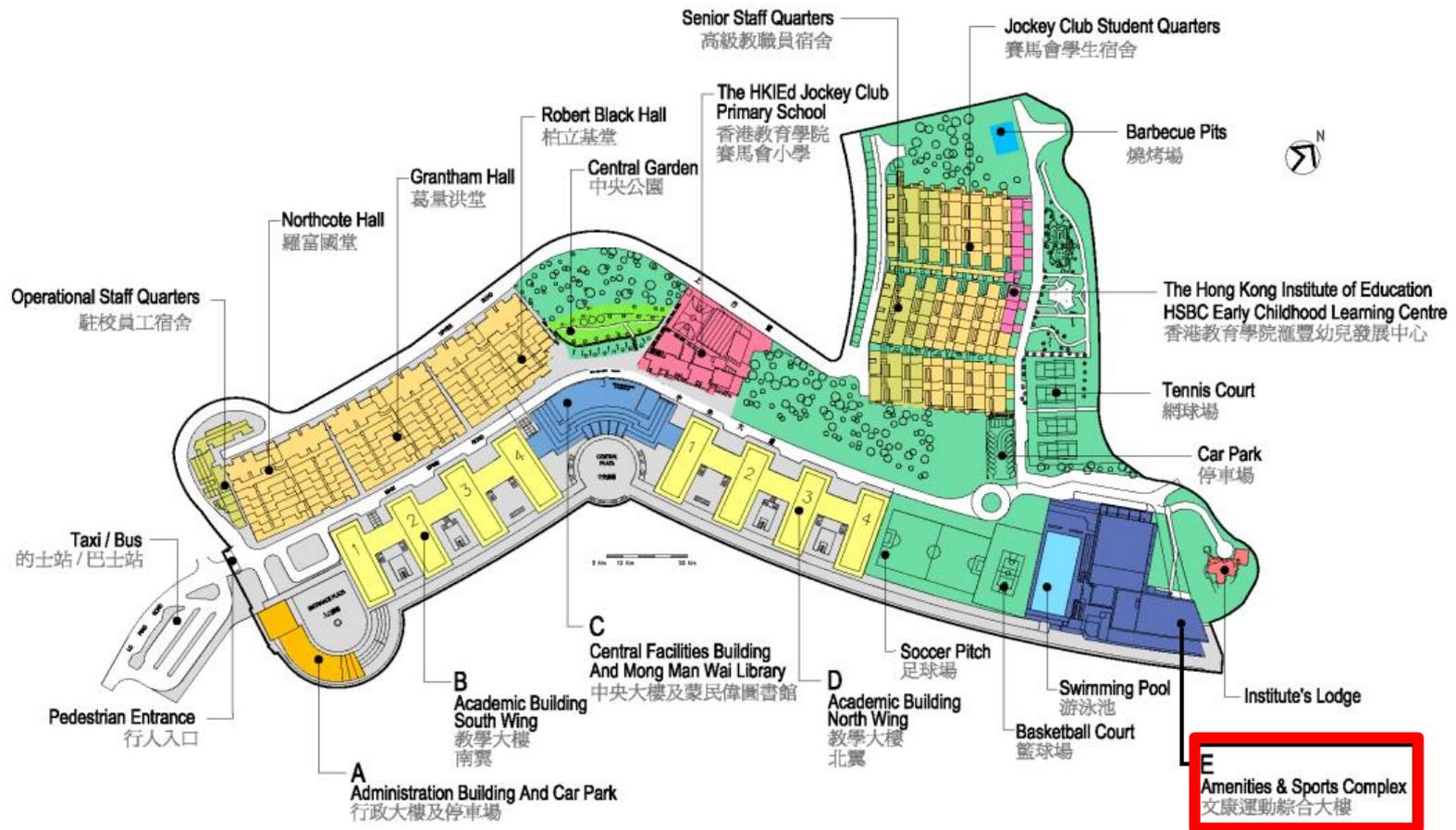
P.M. Session

- Mini Lecture & Result release @ C-LP-11
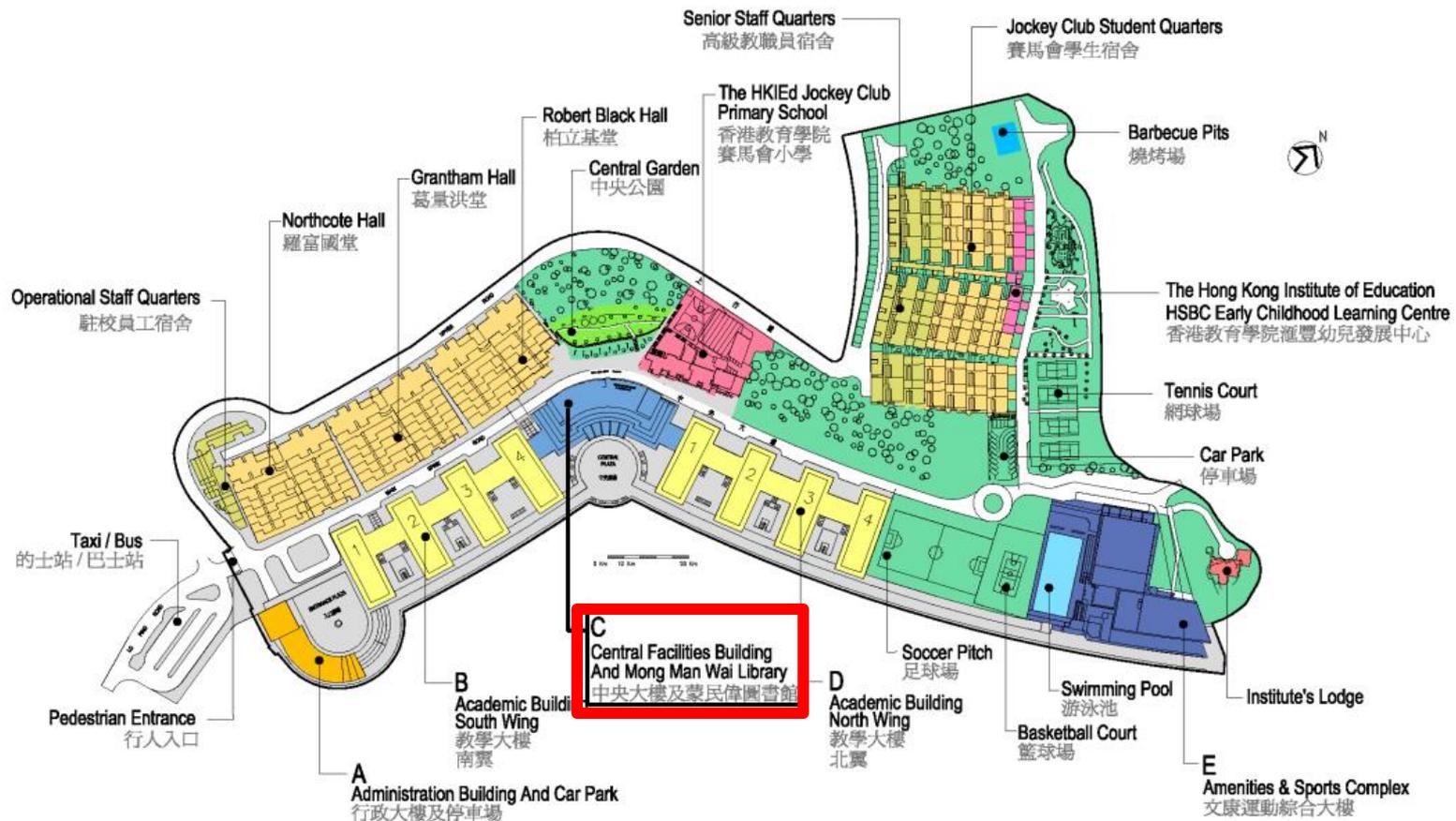
P.M. Session (Part II)

| Part II: Hands-on problem solving	
Task	Each team to solve a selected problem and create an innovative artifact by integrating and applying STEM knowledge and skills
Type of questions	Hands-on problem solving and design
Location	Sports Hall
Duration	*2 hours*

Selection Scheme

Finals Teams	→	**Nomination and Adjudication**	→	**3 winning teams**
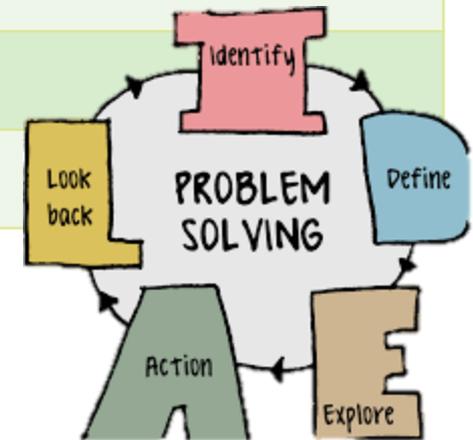
- Presentation by a team member about their ideas and application

- **Additional questions** for Part I(a) & Part I(b) respectively in case there are same scores among competitors

Announcement of Awards

- Location: Sports Hall
- Speeches by guests
- Award presentation

Individual awards (Part I(a))

Team awards (Part I(b))

Team awards (Part II)