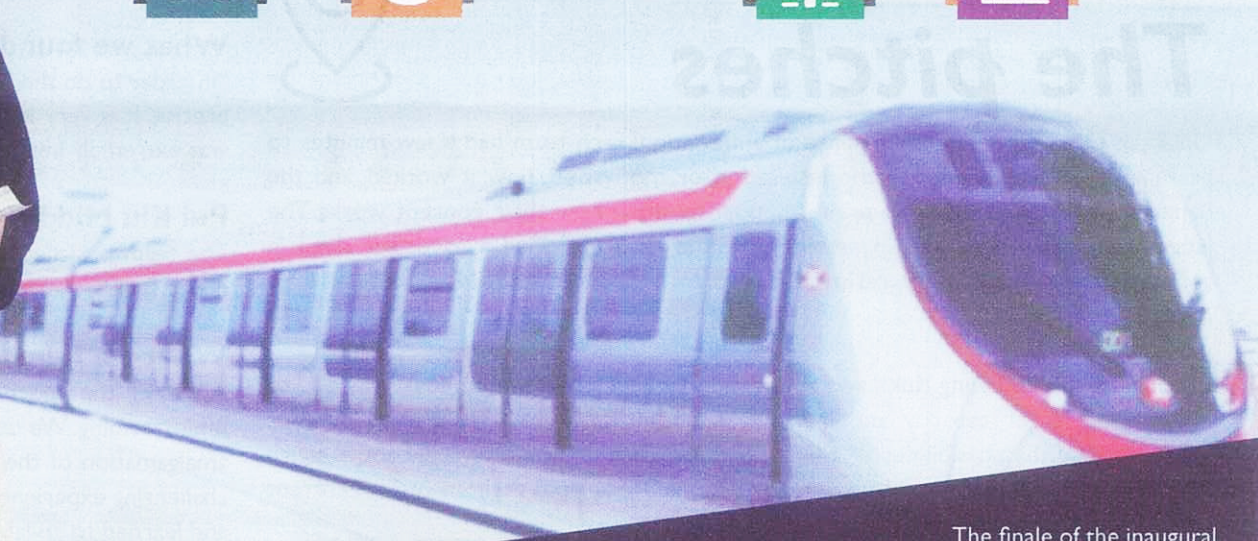
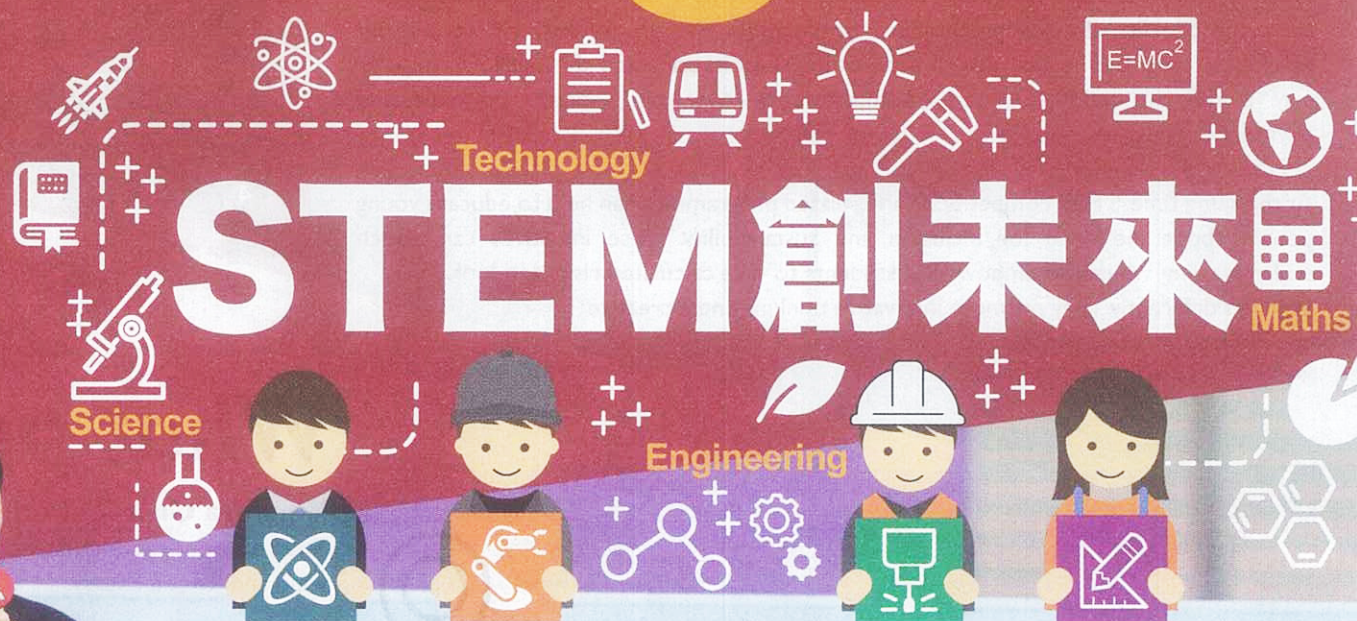


young post sunday

community connect 心繫社區



The finale of the inaugural "Community Connect – STEM Challenge" saw 14 shortlisted teams of Form 3 to Form 5 secondary school students taking part in a tense and exciting Pitch Day. This was the culmination of an event which had challenged them to apply STEM (science, technology, engineering and mathematics) concepts and present their vision for "Inclusive and Sustainable Communities" to a panel of expert judges. Also in attendance was an audience which included teachers, principals and members of the press.

The overall challenge was designed by MTR Corporation and supported by Junior Achievement Hong Kong, HKEdCity and the Association for Computer Education. The aim was to encourage students to observe the world around them and stay curious about how STEM knowledge are applied to solve real-life issues. And the ideas and presentations were generally of a very high standard.

Over 300 students from 44 schools, amounting to 57 teams, originally entered the competition, with the best 14 invited to the Pitch Day on April 28.

There, each team presented their concept and then answered a range of challenging questions from the judges covering technical, safety, implementation and user-centricity aspects. The answers given showed the dedication, hard work and preparation that had gone into each project, but there were also moments of humour and levity.



1. Cheung Chuk Shan College presents their LOHAS Bridge project.
2. Chief Executive Carrie Lam joins the Pitch Day judges in the audience.
3. Students from Po Leung Kuk Choi Kai Yau School present their vision for a sustainable hillside community.



A better life for everyone

Inclusive and sustainable communities enable all segments of society to participate in and share the benefits of development. Such communities, though, are not created without careful planning. Businesses, government, other organisations and the public at large all play a role in building better communities by addressing social, economic and environmental issues.

At the same time, STEM competitions and related programmes can help to educate young people about the need for inclusion and sustainability. These initiatives can enrich understanding, while also empowering students to take calculated risks and look at things differently. They promote innovative thinking and a creative approach to solving problems.



4

The pitches



On Pitch Day, there was a real sense of anticipation. Each team had a few minutes to present its project, explaining the inspiration or motivation, how it worked, and the benefits – they used their 3D-printed model to show how their concept works. The judges were also interested in hearing how they had identified a particular need in society, done the necessary research, and then gained the knowledge and skills to develop their ideas.

Leading off, the Po Leung Kuk Laws Foundation College presented an idea intended to increase passenger capacity and improve passenger flow in MTR train cars. After demonstrating the possibilities of a new floor and door design, they faced some tough questions from the judges, but were ready with statistics from their analysis of current and proposed design parameters.

Pui Kiu Middle School provided extra entertainment when one of their students, playing an elderly woman, hobbled up a flight of stairs to illustrate the need for their system. It was a simple and practical design to help senior citizens get up and down stairs. The 3D model to illustrate this was very impressive, but the judges did raise a question about possible patent issues related to the mechanism.

The team from St Paul's Convent School team presented their "Light Up My Life" aquaponics system for the elderly, aimed at promoting health and wellness for senior citizens. The judges showed plenty of interest, suggesting there might be a ready market for such an invention.

Though a little nerve-racking for some, it was clear that the event gave the students a real sense of accomplishment.

- Judges William Lo and Dorothy Chan check out the 3D model produced by the ELCHK Lutheran Academy.
- The Pui Kiu Middle School team on stage demonstrating their 3D model.
- The team from Ying Wa College designed an integrated system to streamline travelling by connecting the IoT with RFID and Big Data.
- MTR employees, Peter Wan and Jessica Chan, visited schools to talk about STEM subjects.
- The team from Ju Ching Chu Secondary School (Yuen Long) presenting their vertical wind turbine.
- Professor Dickon Ng stressed the importance to STEM subjects and was impressed by the creativity the students showed.



What participants said

Ying Wa Girls' School

The team designed a wheelchair ramp system and energy conversion system utilising wind and kinetic energy.

What we found challenging:

"In order to do the 3D model printing, the calculations and measurements must be very precise. It is very important to get everything right, so communication within the team was extremely important."

Pui Kiu Middle School

The team designed a system to assist elderly people who have difficulty going up and down stairs.

What we found challenging:

"One of the most challenging things for us was the discussion after our initial brainstorming. We each had to argue for our point of view, but the project is an amalgamation of the different ideas from all members of the team. It has been a very challenging experience for us, but also very rewarding. We got to know each other better and learned to collaborate well."

Ju Ching Chu Secondary School (Yuen Long)

The team designed a vertical wind turbine system that harnesses wind power in MTR tunnels and above ground to provide a green power source.

What we learned:

"The 3D CAD design and 3D printing skills we gained from participating in this event are something we will definitely use again in the future."

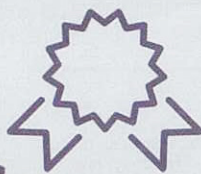


7

8



From the judges



One judge, Professor Dickon Ng, chairman of the Department of Physics at the Chinese University of Hong Kong said that the STEM competition provided a platform for students to take on new challenges, to be creative, and to look at problems from different angles. "It involved the application of STEM skills that students have learned at school. They were able to take these core skills and apply them to real-life situations."

He noted that some students came up with ideas to help elderly people, while one team developed a bridge concept for vehicles to help alleviate congestion and reduce emissions. "If we want to develop and to modernise our society, we need these kinds of technologies and science. The student teams today showed good teamwork and cooperation. They showed creativity, which is what helps people reach ever higher and achieve their goals."

Another judge, Stark Chan, the founder of a local technology company said that the competition was a platform for students to plan and apply what they've learned in school. "They are not just studying for the sake of it, but to learn something practical," he said. "They see that their studies are relevant to real life."

In particular, he was looking for the creativity and innovation in each project, but also to see that ideas were grounded in reality. They could seem extraordinary or outlandish, but also had to be practical. He expected students to draw on simulation, research and logical thinking skills to find ways to execute their plans.

"Programmes such as this give students a strong sense of achievement," he said. "Through working with others to create the projects and perhaps winning an award, their feelings of worth from completing the challenge will drive them on to further projects and more competitions. In this way, they can progress and develop as individuals."



What the MTR volunteers said



For MTR Corporation employees, the STEM competition was also very rewarding. Jessica Chan, assistant property manager at The Cullinan and Peter Wan, manager, civil works contract, were two of the company volunteers who visited schools to talk about how STEM subjects are applied in their daily jobs.

"When I first heard about the competition, I was very interested," Chan said. "When I was in high school, I didn't have many opportunities to meet people who worked for a big company, who could tell us how the things we learned in school would be useful later on. For me, the whole experience has been very memorable. The students showed innovative thinking and asked some excellent questions."

As an engineer, Wan found it was a challenge to break down some more complex concepts so they were easier to understand. At his talks, though, students were increasingly interested and engaged, which he found very rewarding. "They asked some very good questions and I was impressed," he said. "I could see how the talks helped them understand how STEM knowledge and skills can be applied, and that made them want to learn more. Maybe some are now interested in becoming engineers."



The winners

The winners of the STEM Challenge were duly announced and included:

- Most innovative project – **Cheung Chuk Shan College**
 - Most creative 3D-printed models – **ELCHK Lutheran Academy, Po Leung Kuk Choi Kai Yau School**
 - Best application of STEM subjects – **Pui Kiu Middle School**
 - Best application of "Inclusive and Sustainable Community" concept – **St Paul's Convent School**
- Best performing teams – **Ju Ching Chu Secondary School (Yuen Long), Pui Kiu Middle School, Ying Wa Girls' School**

The three best performing teams won a week-long study tour to Sweden in July 2018, where they will visit MTR's railway operations and learn more about sustainable development.



STEM for the future

Students who took part in the programme learned how STEM disciplines are applied in daily life. In addition, they were taught about structured approaches to problem solving and attended workshops on 3D CAD drawing and 3D printing skills. During Pitch Day, the shortlisted teams were judged on a list of criteria that included theme, analysis, their proposal, and presentation skills. This gave each team the chance to demonstrate careful thought, preparation, STEM knowledge and skills, public speaking abilities, as well as inspiration and insight.

In his closing remarks, Professor Frederick Ma, chairman of MTR Corporation, neatly summed up the objectives and outcomes of the competition.

"The STEM Challenge encourages students to use STEM skills to work together and creatively solve societal issues they have identified," he said. "The MTR Corporation, as a part of the social fabric of Hong Kong, provides services to meet the needs of a broad range of users, as well as to nurture the long-term development and growth of a healthy society. The judging panel found the projects and presentations to be of a very high standard, showcasing the STEM knowledge and skills of the student teams."

At the event, Chief Executive of HKSAR Mrs Carrie Lam commended the participants for applying STEM concepts to articulate their vision. She also took some time to meet participants before presenting prizes to the winning teams.

"Inclusive and sustainable growth is a key focus for many economies around the world, so that the fruits of development are enjoyed by all segments of society and that our next generation can achieve sustainable development," she said. "I am delighted to see that students taking part in this programme have applied technology to express their vision, and contribute their ideas to helping Hong Kong's sustainable development."

Mrs Lam also encouraged students to continue to be curious and explore what STEM subjects can offer, as they are an integral part of Hong Kong's future development.

Organised by:
MTR Corporation

Supported by:
Junior Achievement Hong Kong
The Association for Computer Education
HKEdCity

10. Best Performing Team - Pui Kiu Middle School
11. Best Performing Team - Ying Wa Girls' School
12. In his closing comments, Professor Frederick Ma reiterated MTR Corporation's commitment to nurturing STEM talents for Hong Kong.
13. Chief Executive Carrie Lam commended the participants on their application of technology to express their vision.
14. Best Performing Team - Ju Ching Chu Secondary School (Yuen Long)

Shortlisted school teams:

No.	School Name
1	Cheung Chuk Shan College
2	Christian Alliance SW Chan Memorial College
3	ELCHK Lutheran Academy
4	Ju Ching Chu Secondary School (Yuen Long)
5	Lok Sin Tong Leung Chik Wai Memorial School
6	Ng Wah Catholic Secondary School
7	Pak Kau College
8	Po Leung Kuk Choi Kai Yau School
9	Po Leung Kuk Laws Foundation College
10	Pui Kiu Middle School
11	Pui Ying Secondary School
12	St Paul's Convent School
13	Ying Wa College
14	Ying Wa Girls' School

Judges:

Professor Frederick Ma, MTR chairman; Dr Dorothy Chan, board member of MTR Corporation; Dr William Lo, chairman of Junior Achievement Hong Kong; Professor Dickon Ng, department chairman of the Department of Physics at the Chinese University of Hong Kong; and Stark Chan and Jason Chiu, who are founders of local technology companies

