

# sunday

## youngpost

## Rising to the Challenge

Student participants at the MTR STEM Challenge Pitch Day impressed judges with innovative projects



Three best performing teams in the 2018/19 MTR STEM Challenge will join a week-long study trip to London after receiving the awards at the Pitch Day on May 4, 2019 which also marked the conclusion of this year-long programme.

It was many months of hard work for the students who had made it on to the shortlist. 14 student teams from Form Two to Form Five pitched proposals based on the theme of "Innovation for Sustainable Infrastructure" to a panel of expert judges.

The MTR STEM Challenge aims to foster curiosity about the world and encourage an interest in science, technology, engineering, and maths (STEM) subjects.

Around 700 students in 132 teams took part in the competition, more than double of last year's numbers. The challenge began in September 2018 when MTR staff visited schools and gave interactive talks to more than

13,000 local secondary school students. The students were also invited to participate in micro:bit coding workshops to learn how to use the programmable micro-computer which the teams had to incorporate into their proposals.

Prizes were awarded for the most eco-friendly design, the best application of STEM knowledge, the most creative model, and the best demonstration of the theme of innovation for sustainable infrastructure. There was also a prize for the most innovative project, and awards for the three best performing teams. As part of the prize, the top three teams and their teachers will visit the MTR's overseas operations in London, where the MTR operates the TfL Rail service, which will form part of the future Elizabeth Line, and the South Western Railway.





## From the **students**

The calibre of the projects and presentations by the 14 short-listed teams was exceptional. Each team gave polished pitches, and participants expertly fielded probing questions from the judges. The three winning teams stressed the importance of learning new skills, teamwork, and good preparation.

The team from Pui Kui Middle School created new train cars with doors that open upwards instead of sliding horizontally. The team created detailed moving models of the train cars from laser-cut pieces of wood. The models went through several design iterations before the team felt they were good enough to assemble.

“As a team, we want to learn more about STEM and its real-life applications,” a team member said. “We also wanted to challenge ourselves by participating in the MTR STEM Challenge. As MTR passengers ourselves, we identified overcrowding in MTR stations and on trains as issues we wanted to address. We also spent a great deal of time preparing answers to possible questions from the judges.”



The project from Kit Sam Lam Bing Yim Secondary School offered a priority seating system that makes use of age-recognition technology based on biometric features, and was designed with comfort, caring and safety in mind.

“We are thrilled to have won one of the best performing team awards,” a team member said. “All the projects were of a very high standard. Although we feel we could have done better in some areas, we believe that if you persevere and work hard, you can achieve anything. We are also very thankful for all the support and guidance our teacher gave us.”

The team from Sacred Heart Canossian College presented a SmartParking solution to alleviate traffic congestion. The solution featured an automatic payment system, as well as real-time notifications of traffic condition and illegal parking detection.

“We wanted to take on the challenge of creating a sustainable solution to a global problem,” a team member said. “Some issues were beyond our capabilities, but we felt that we could address the problem of traffic congestion. As a team, we worked together to solve problems as they came up. Working together as a team was one of the best parts of the challenge for us.”





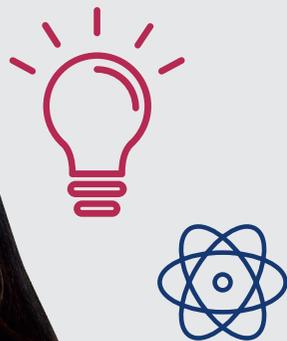
# From the judges



The judges on the panel were all innovators from a diverse background. One of the judges, Marina Chan, director of education, MIT Hong Kong Innovation Node, said, “I was very impressed by the ideas the teams came up with. They addressed real issues that were based on their personal experiences, and we took into consideration sustainability goals as well as balance in their plans.”

Each team developed their project ideas to address real-world issues, and worked collaboratively to find solutions. Chan said that some of the teams came up with ideas that she would have expected to see at university level, noting their “impressive prototyping.”

“Competitions like this are important because they raise awareness of social issues. They provide good examples and models for students and show them what tools are out there to help them,” Chan said. “Students use their design and technology skills for the good of society. They come together as a team, and respect each other’s skill sets. Each project we saw today is the work of a team, not just one person,” she explained. Chan also mentioned that problem-solving was at the core of every project, and that meant students needed to identify whether problems could be addressed with innovative solutions. They had to “look for the right fit,” she noted.



# MTR staff share experiences

For those who work at the MTR, volunteer opportunities to connect with the communities that they serve are available through the company’s Community Connect initiatives. From September 2018, staff volunteers went to schools to give talks about how STEM subjects they take at school can have real-world applications within the MTR.

Karissa Chan, support engineer of safety assurance, said that when she was a secondary school student, she always enjoyed speakers sharing their experiences at her school, and she wanted to do the same.

“During the school talks, the students used their deductive reasoning skills to come up with logical answers to questions we presented to the group,” Chan said. “The students also showed impressive skills when fielding questions from the judges at the Pitch Day. I was inspired and impressed by the students as their projects showcased their creativity and hard work. Their projects were very well thought out,” said Chan.

Ricky Sung, construction engineer of train service, volunteered because he wanted to share his experience of how maths and science concepts are applied in his work at the MTR.

“I enjoy connecting with others in the community. The school talks are not just good opportunities to share with students, and also to learn from them,” Sung said. “At a micro:bit workshop, I tried to complete one of the tasks, and I ended up being the last to finish. I had to get help from the students,” Sung said. He also said that he was paired with a colleague from another division at each school talk, and that offered a chance to see the company and his job from another perspective.



# STEM support for a sustainable future

In his closing remarks, Professor Frederick Ma, chairman of the MTR Corporation, said that the corporation is pleased to be able to leverage the company's expertise and resources through the MTR STEM Challenge to support the government's STEM education initiatives in Hong Kong.

"We hope this programme can further stimulate students' interest in STEM subjects and help nurture STEM professionals for the community," Ma said, adding that the students were vital to Hong Kong's future.

Guest of honour Matthew Cheung, Chief Secretary for Administration of the Hong Kong Special Administrative Region (HKSAR), attended the event and met with the student teams to learn about their projects. Cheung spoke about the need for the community to work together to groom local talent. The aim, he said, is to support the development of innovation and technology in Hong Kong to enable the Greater Bay Area to become the "Silicon Valley of China". He also stressed that the government of the HKSAR has shown its commitment to supporting STEM education in schools by implementing measures such as updating STEM education-related curricula, organising different professional development activities for teachers, and the establishment of the STEM Education Centre.

## Best Performing Team Awards (Three winners)

Kit Sam Lam Bing Yim Secondary School  
Pui Kui Middle School  
Sacred Heart Canossian College

## Most Eco-friendly Design

The Hong Kong Management Association K S Lo College

## Best Application of STEM Knowledge

Lok Sin Tong Wong Chung Ming Secondary School

## Most Creative Model

St. Stephen's Girls' College

## Best Demonstration of the Theme: Innovation for Sustainable Infrastructure

St. Paul's Convent School

## Most Innovative Project

Ju Ching Chu Secondary School (Yuen Long)

## Judging panel of MTR STEM Challenge

**Professor Frederick Ma**, chairman of MTR Corporation

**James Kwan**, board member of MTR Corporation

**Steven Lam**, co-founder and CEO of GOGO VAN

**Alex M. H. Wong**, assistant professor of department of electronic engineering at City University of Hong Kong

**Marina Chan**, director of education, MIT Hong Kong Innovation Node

**Lily Cheng**, founder of Hubel Labs Limited

